ESA PSS-01-603 Issue 3
September 1995

ESA preferred parts list

Prepared by;
Product Assurance and Safety Department
European Space Research and Technology Centre
Noordwijk, The Netherlands

Approved by:
The Inspector General, ESA

european space agency / agence spatiale européenne

Published by ESA Publications Division,
ESTEC, Noordwijk, The Netherlands

Printed in The Netherlands

ESA price code: E3

ISSN-0379 - 4059

ABSTRACT

This document contains a list of preferred components to be used in the selection, procurement and application of components for ESA spacecraft and associated equipment.

FOREWORD

This new issue of the ESA Preferred Parts List now comprises two levels, which are not referred to in the current issue of ESA PSS-01-60: Component selection, procurement and control for ESA space systems.

It is not intended to update ESA PSS-01-60, which will be superseded by a document issued by the European Cooperation for Space standardization, ECSS-Q-60.

The following amendments to the current issue of ESA PSS-01-60 are therefore now applicable:

At the end of Paragraph 4.7.3, add the following sentence:

> 'Components selected from Part II of the Preferred Parts List, in particular those evaluated to ESA PSS-01-60, shall be assessed to verify that design and processes are unchanged and that evaluation results are still valid.'

Amend Paragraph 4.10.4 to read:

'**4.10.4 Lot Acceptance Testing (LAT)**

— **Components listed in Part I of the PPL**

(existing text of paragraph)

— **Components listed in Part II of the PPL**

All components shall be subjected as a minimum to Lot Acceptance Testing Level 2 (LAT2) as defined in the ESA/SCC specifications.'

DOCUMENT CHANGE RECORD

Issue	Date	Sections affected	Remarks
Issue 1	June 1983		New document
Issue 2	June 1985	All	Completely revised issue
Issue 3	September 1995	All	Completely revised issue

TABLE OF CONTENTS

SECTION 1: INTRODUCTION

1.1 SCOPE

This document is a list of preferred components to be used in the selection, procurement and application of components for ESA spacecraft and associated equipment.

This list is divided into two parts, I and II. The inclusion of items in the two lists is determined by the application of different criteria; these are defined in Section 2.

1.2 PURPOSE

The purpose of this list is:

— to provide equipment designers and manufacturers of ESA spacecraft and associated equipment with a list of electronic components considered to be acceptable to ESA and, consequently, to promote the use of standard components;
— to control and minimise the variety of electronic components used in ESA projects.

SECTION 2: COMPONENT SELECTION CRITERIA

2.1 General

Components selected for inclusion in this preferred parts list (PPL) have been subjected to a type variant reduction. Their selection also indicates that they:

— are capable of satisfying a wide range of design applications;

— are mature in their technology and suitable for incorporation into flight-standard hardware;

— have a significant chance of being utilised for current and future programmes;

— are available from sources the previous performance of which indicates that they are capable of providing products of the required quality.

2.1.1 Type selection

Part I components are selected from:

— components included in the ESA/SCC QPL list;

— components that have been found satisfactory after ESA/SCC evaluation, for which an ESA/SCC specification is available and that are not covered by the first criterion;

— components listed as Grade 1 parts in the NASA GSFC PPL, having ESA-selected sources and not covered by the first two criteria;

— components listed in the NASDA QPL and not covered by the first three criteria.

Part II components are selected from:

— components that have been fully and successfully evaluated in accordance with ESA PSS-01-60 and for which an evaluation report is available;

— components listed as Grade 2 parts in the NASA GSFC PPL, having ESA-selected sources and not covered by the first criterion or the criteria for Part I components.

2.1.2 Type removal

A component type may be removed from this list for any of the following reasons:

— the component has become obsolete;

— adequate sources are no longer available;

— the type has been replaced by a functionally similar but improved component;

— inherent reliability/quality problems have been experienced.

2.2 APPLICABLE DOCUMENTS

The following documents are applicabler to the extent specified herein.

ESA/SCC QPL (Issue 95/1)	Qualified Parts List
GSFC PPL-20 (March 1993)	NASA GSFC Preferred Parts List
NASDA QPL (March 1994)	NASDA Qualified Products List
ESA PSS-01-60 (Issue 2)	Component selection, procurement and control for ESA space systems

2.3 DEFINITIONS AND ABBREVIATIONS

See ESA PSS-01-60.

SECTION 3: CONTRACTOR'S RESPONSIBILITY

The contractor is responsible for verifying the status validity of the components he has selected.

ESA PSS-01-60 specifies the contractor's other responsibilities.

The contractor can refer to the ESA Components Radiation Effects Data Base for the purpose of verifying the radiation sensitivity of a particular component.

SECTION 4: USE OF THE TABLES

4.1 TYPE DESIGNATION

The referenced type (style) designations are selected from industrial standards (JEDEC, MIL etc.) and identify only the similarity to the actual style, the precise characteristics of which are defined in the applicable specification, which is also referenced.

4.2 SPECIFICATION

Where possible, reference is made to specifications issued within the framework of the ESA/SCC system. Other specifications are referenced only for definition of precise characteristics and are therefore not necessarily recommended for procurement. Requirements for the selection of procurement specifications are contained in ESA PSS-01-60.

4.3 COMPONENT CHARACTERISTICS/REMARKS

The electrical characteristics are listed for guidance only and, unless otherwise stated, are specified at $+22 \pm 3°C$.

4.4 MANUFACTURER'S CODE

Manufacturer's codes are not included in the table of components deriving from the ESA/SCC QPL, but the full name and address of the qualified manufacturer can be obtained from that list.

SECTION 5: REVISION PROCEDURE

Revisions to this document will be communicated by the issue of modified or additional pages with the appropriate revision letter and date. they will be accompanied by an updated cover sheet and documentation/change record.

This document will be reviewed and updated, as required.

SECTION 6: MANUFACTURER'S CODES, NAMES AND ADDRESSES

The list in the following pages contains a manufacturer's code specific to a manufacturer at a particular location and the full name and address of the manufacturer designated by each code.

PAGE INTENTIONALLY LEFT BLANK

MCODE	MANUFACTURER	ADDRESS
ALPUW	ALPHA INDUSTRY	20 Sylvan Road,Woburn,USA,MA 01801.
ANDUC	ANALOG DEVICES	1500 Space Park Drive,Santa Clara,USA,CA 95052.
ATCUH	AMERICAN TECHNICAL CERAMICS	One Norden Lane,Huntington Station,USA,NY 11746.
CADUR	CADDOCK ELECTRONICS	1717 Chicago Avenue,Riverside,USA,CA 92507.
CELFS	CELDUC	BP 304,Courbevoie,France,F-92402.
DELUA	DELEVAN DIV. AMERICAN PRECISION INDUSTRY	270 Quaker Road,East Aurora,USA,NY 14052.
EFDFL	EUROFARAD	23 rue Jeanne d'Arc,Lagny,France,F-77400.
FCIFP	FRAMATOME CONNECTOR INTERNATIONAL	3, Avenue du Marechal Devaux,PARAY-VIEILLE-POSTE,FRANCE,F-91550.
FECJN	FUJI ELECTRIC CO. LTD	Matsumoto Factory,Tsukama 2666 Matsumoto, Nagaro,Japan,.
FENUM	FENWAL ELECTRONICS	450Fortune Blvd,Milford,USA,MA 01757.
FIRFN	FIRADEC	Zone Insdustrielle des Brais B.P. 194,SAINT-NAZAIRE CEDEX,France,F-44604.
FUJJK	FUJITSU	1015 Kamikodanaka Nakahara-Ku,Kawasaki City,Japan,.
GEKFA	GEKA SFERNICE	238 Rue du Tertre,Ancenis,France,F-44150.
GEPFN	GEPE	Rue Ste Claire Deville,Z.I. de St Liguaire, NIORT,France,F-79000.
GPSBL	GEC PLESSEY SEMICONDUCTOR	Lincoln Industrial Park, Doddington Road,Lincoln,United Kingdom,LN6 3LF.

MCODE	MANUFACTURER	ADDRESS
GPSBS	- GEC PLESSEY SEMICONDUCTOR	Cheney Manor,Swindon,United Kingdom,SN2 2QW.
HARUP	- HARRIS SEMICONDUCTOR	2401 Palm Bay Road, N.E.,Palm Bay,USA,FL 32905.
HITJI	- HITACHI LTD	Hitachi Works, 1-1, Saiwai-Cho, 3-Chome,Hitachi-Shi, Ibaraki-Ken,317 Japan,.
HONUP	- HONEYWELL	12001 State Highway 55,Plymouth,USA,MN 55441.
INRUE	- INTERNATIONAL RECTIFIER	233 Kansas Street,El Segundo,USA,CA 90245.
KEMUS	- KEMET ELECTRONICS CORPORATION	2835 Kemet Way,Simpsonville,USA,SC 29681.
LCCFA	- LCC	Avenue du Colonel Prat,Saint-Apollinaire,France,F-21850.
LEMHE	- LEMO	P.O. Box 194,Ecublens,Switzerland,1024.
LINUG	- LINFINITY MICROELECTRONICS	11861 Western Avenue,Garden Grove,USA,CA 92641.
LTCUM	- LINEAR TECHNOLOGY	Mac Carthy Boulevard,Milpitas,USA,CA 95035.
MACBD	- M/A-COM	Humphrys Road,Dunstable,United Kingdom,LU5 4SX.
MACBM	- M/A-COM LTD	Featherstone Road, Wolverton Mills,MILTON KEYNES, BUCKS,ENGLAND,MK12 5EW.
MHSFN	- MATRA HARRIS	La Chantrerie/Route de Gachet, C.P. 3008,NANTES CEDEX 03,France,F-44087.
MICFI	- MICROSPIRE	16, parc d'activite du beau vallon,ILLANGE,France,F-57110.
MSCUA	- MICROSEMI	2830 S. Fairview Street PO Box 26890,Santa Ana,USA,CA 92704.

MCODE MANUFACTURER	ADDRESS
MSCUS - MICROSEMI	8700 E. Thomas Road,Scottsdale,USA,AZ 85251.
NECJK - NIPPON ELECTRIC	3-484 Tsukagoshi Saiwai-Ku,,KAWASAKI CITY,JAPAN,.
NESUL - NEW ENGLAND SEMICONDUCTOR	6 Lake Street,Lawrence,USA,MA 01841.
NSCUC - NATIONAL SEMICONDUCTOR	2900 Semiconductor Drive PO Box 58090,Santa Clara,USA,CA 95052.
OPTUC - OPTEK TECHNOLOGY	1215 W. Crosby Road,Carrollton,USA,TX 75006.
PMIUC - PRECISION MONOLITHICS INC.	1500 Space Park Drive,Santa Clara,USA,CA 94040.
PPCUR - PPC PRODUCTS CORP.	7516 Central Industry Drive,Riviera Beach,USA,FL 33404.
RADFI - RADIALL	B.P. 709,LA VERPILLIERE,France,F-38297.
RADFV - RADIALL	642 Rue Emile Romanet,VOREPPE,France,F-38340.
RAYUM - RAYTHEON	350 Ellis Street,Mountain View,USA,CA 94039.
ROSUB - ROSEMOUNT	PO Box 959,Burnsville,USA,MN 55337.
SEMBL - SEMELAB	Coventry Road,Lutterworth,United Kingdom,LE17 4JB.
SEMUN - SEMTECH	652 Mitchell Road PO Box 367,Newbury Park,USA,CA 91320.
SFRFN - SFERNICE	115,121 Blvd de la Madeleine, B.P. 17,NICE-CEDEX,France,F-06021.
SIEGM - SIEMENS A.G.	Balanstr. 73,MUNICH,Germany,D-81541.
SOAUS - STATE OF THE ART	2470 Fox Hill Road,State College,USA,PA 16803.

MCODE	MANUFACTURER	ADDRESS
SPRFT	SPRAGUE FRANCE	8, Avenue du Danemark B.P. 0143,TOURS-CEDEX,France,F-37001.
TCSFE	THOMSON COMPOSANTS SPECIFIQUES	Rue Rocheplaine,Saint-Egreve,France,F-38120.
TOKJM	TOKIN CO. LTD	2-5-8 Kita Aoyama, Minato-ku,Tokyo,107 Japan,.
TRABD	TRAK MICROWAVE	4 Lindsay Court,Dundee,United kingdom,DD2 ITY.
UICUM	UNITRODE INTEGRATED CIRCUITS	7 Continental Boulevard,Merrimack,USA,NH 03054.
ULTUG	ULTRONIX	461 North 22nd Street,Grand Junction,USA,CO 81501.

SECTION 7: TABLES OF PREFERRED COMPONENTS

Part I

01 — Capacitors
02 — Connectors
03 — Crystals
04 — Diodes
05 — Filters
06 — Fuses
07 — Inductors
08 — Microcircuits*
09 — Relays
10 — Resistors
11 — Thermistors
12 — Transistors
13 — Wires and cables
14 — Transformers
16 — Switches
18 — Opto-electronics
19 — Thyristors
20— Thermostats
23 — Lamps
27 — Fibre-optic components
30 — RF passive components
99 — Miscellaneous

PAGE INTENTIONALLY LEFT BLANK

PART I

PAGE INTENTIONALLY LEFT BLANK

Section	Component Types
01	CAPACITORS
02	CONNECTORS
03	PIEZO-ELECTRIC DEVICES
04	DIODES
05	FILTERS
06	FUSES
07	INDUCTORS
08	MICROCIRCUITS
09	RELAYS
10	RESISTORS
11	THERMISTORS
12	TRANSISTORS
13	WIRES AND CABLES
14	TRANSFORMERS
16	SWITCHES
18	OPTO-ELECTRONICS

Section	Component Types
19	THYRISTORS
20	THERMOSTATS
23	LAMPS
27	FIBRE OPTIC COMPONENTS
30	RF PASSIVE COMPONENTS

Section 01 Component Type: CAPACITORS

Sub-Section	
01-01	CERAMIC
01-02	CERAMIC CHIP
01-03	TANTALUM SOLID
01-04	TANTALUM NON-SOLID
01-05	PLASTIC METALLIZED

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CCR05 (TYPE I)	ESA/SCC 3001/018	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 1 to 9.1 / 0.5pF / 200 / 30 10 to 330 / 2 / 200 / 30 360 to 1800 / 2 / 100 / 30 2200 to 3300 / 2 / 50 / 30 Size (max mm) : 5.1 x 5.1 x 2.55 Operating temperature range (°C) : -55 to +125	
CCR06 (TYPE I)	ESA/SCC 3001/019	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 390 to 1800 / 2 / 200 / 30 2200 to 4700 / 2 / 100 / 30 5100 to 18000 / 2 / 50 / 30 Size (max mm) : 7.65 x 7.65 x 2.55 Operating temperature range (°C) : -55 to +125	
CKR05 (TYPE II)	ESA/SCC 3001/008	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) 10 to 1000 / 10 / 200 / -25 +15 1200 to 10000 / 10 / 100 / @ rated volt. 12000 to 100000 / 10 / 50 Size (max mm) : 5.1 x 5.1 x 2.55 Operating temperature range (°C) : -55 to +125	
CKR06 (TYPE II)	ESA/SCC 3001/006	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) 1200 to 10000 / 10 / 200 / -25 +15 12000 to 100000 / 10 / 100 / @ rated volt. 120000 to 1000000 / 10 / 50 Size (max mm) : 7.65 x 7.65 x 2.55 Operating temperature range (°C) : -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
0805 (TYPE I)	ESA/SCC 3009/003	Cap. Range (pF) / Tol. (±) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 4.7 to 9.1 / 0.5pF / 50,100 / 30 10 to 1000 / 5% / 50,100 / 30 Ag/Pd terminations Size (max mm) : 2.3 x 1.45 x 1.3 Operating temperature range (°C) : -55 to +125	
1210 (TYPE I)	ESA/SCC 3009/004	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 470 to 3900 / 5 / 100 / 30 470 to 3900 / 5 / 50 / 30 Ag/Pd terminations Size (max mm) : 3.6 x 2.8 x 1.8 Operating temperature range (°C) : -55 to +125	
1812 (TYPE I)	ESA/SCC 3009/005	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 1000 to 8200 / 5 / 100 / 30 1000 to 8200 / 5 / 50 / 30 Ag/Pd terminations Size (max mm) : 5.0 x 3.6 x 1.8 Operating temperature range (°C) : -55 to +125	
2220 (TYPE I)	ESA/SCC 3009/006	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 4700 to 18000 / 5 / 100 / 30 4700 to 18000 / 5 / 50 / 30 Ag/Pd terminations Size (max mm) : 6.2 x 5.5 x 1.8 Operating temperature range (°C) : -55 to +125	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CDR11 (Type I)	MIL-C-55681/4	Cap. Range (pF) 0.1 to 1000; Tol. (± %) 2; Rated Volt. (V) 50; Temp. Coeff. (±10E-6/°C) 30 Ag/Pd terminations; Size (max mm) : 1.4 x 1.4 x 1.0 Operating temperature range (°C) : -55 to +125	ATCUH
CDR13 (Type I)	MIL-C-55681/4	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C): 10 to 100 / 2 / 500 / 30 110 to 220 / 2 / 300 / 30 240 to 470 / 2 / 200 / 30 510 to 620 / 2 / 100 / 30 680 to 5100 / 2 / 50 / 30 Ag/Pd terminations; Size (max mm) : 2.8 x 2.8 x 2.0 Operating temperature range (°C) : -55 to +125	ATCUH
0805 (TYPE II)	ESA/SCC 3009/008	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) @ rated volt.: 1000 to 10000 / 10 / 100 / -30, +20 1000 to 27000 / 10 / 50 / -30, +20 Ag/Pd terminations; Size (max mm) : 2.3 x 1.45 x 1.3 Operating temperature range (°C) : -55 to +125	
1210 (TYPE II)	ESA/SCC 3009/009	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) @ rated voltage: 1000 to 33000 / 10 / 100 / -30, +20 22000 to 120000 / 10 / 50 / -30,+20 Ag/Pd terminations; Size (max mm) : 3.6 x 2.8 x 1.8 Operating temperature range (°C) : -55 to +125	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1812 (TYPE II)	ESA/SCC 3009/010	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) @ rated volt. 1000 to 8200 / 10 / 100 / -30, +20 1000 to 8200 / 10 / 50 / -30, +20 Ag/Pd terminations Size (max mm) : 5.0 x 3.6 x 1.8 Operating temperature range (°C) : -55 to +125	
2220 (TYPE II)	ESA/SCC 3009/011	Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Charact. (%) @ rated volt. 47000 to 150000 / 10 / 100 / -30, +20 100000 to 1000000 / 10 / 50 / -30, +20 Ag/Pd terminations Size (max mm) : 6.2 x 5.5 x 1.8 Operating temperature range (°C) : -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1505 (Chip)	ESA/SCC 3011/002	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 0.22 and 0.33 10 50 0.68 10 25 1.5 10 16 Gold plated terminations Size (max mm) : 4.2 x 1.7 x 1.7 Operating temperature range (°C) : -55 to +125	
1510 (Chip)	ESA/SCC 3011/004	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 0.68 10 50 1.5 10 25 3.3 10 16 Gold plated terminations Size (max mm) : 4.2 x 2.9 x 1.7 Operating temperature range (°C) : -55 to +125	
2010 (Chip)	ESA/SCC 3011/005	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 1.0 10 50 2.2 10 25 4.7 10 16 Gold plated terminations Size (max mm) : 5.5 x 2.9 x 1.7 Operating temperature range (°C) : -55 to +125	
2213 (Chip)	ESA/SCC 3011/006	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 1.5 and 2.2 10 50 4.7 10 25 10.0 10 16 Gold plated terminations Size (max mm) : 6.0 x 3.8 x 2.2 Operating temperature range (°C) : -55 to +125	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2815 (Chip)	ESA/SCC 3011/008	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 4.7 10 50 15.0 10 25 33.0 10 16 Gold plated terminations Size (max mm) : 7.6 x 4.2 x 3.2 Operating temperature range (°C) : -55 to +125	
TAJ Leadless Surface Mount	ESA/SCC 3012/001	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 0.15, 0.22, 0.33 10 50 0.47, 0.68, 1, 1.5 10 35 2.2, 3.3, 4.7, 6.8 10 16 Gold plated terminations Size (max mm) : 3.7 x 3.0 x 2.1 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 0.47, 0.68 10 50 3.3, 4.7 10 35 10, 15, 22 10 16 Gold plated terminations Size (max mm) : 6.2 x 3.4 x 2.8 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 1.5, 2.2, 3.3, 4.7 10 50 6.8, 10, 15 10 35 33 10 16 Gold plated terminations Size (max mm) : 7.5 x 4.5 x 3.1 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 22 10 35 100 10 16 Gold plated terminations Size (max mm) : 7.5 x 4.5 x 4.3 Operating temperature range (°C) : -55 to +125	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CSR09	MIL-C-39003/2	Capacitance Range (μF) Tol. (± %) Rated Volt. (V) 0.047 to 0.18 5 75 0.22, 0.27 5 50 0.33, 0.39, 0.47 5 35 1, 1.2, 1.5 5 15 Size (max mm) : 7.14 x Dia 2.51 Capacitance range (μF) Tol. (± %) Rated Volt. (V) 0.22 to 1.2 5 75 1.5, 1.8 5 50 2.2, 2.7 5 35 8.2 5 15 Size (max mm) : 10.3 x Dia 3.7 Operating temperature range (°C) : -55 to +125	KEMUS

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CSR13	ESA/SCC 3002/002	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 0.1 to 0.68 10 75 0.0047 to 1 10 50 2.7, 3.3 10 15 Size (max mm) : 10.7 x Dia 3.8 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 0.82 to 3.9 10 75 1.2 to 4.7 10 50 5.6, 6.8 10 35 18, 22 10 15 Size (max mm) : 15.5 x Dia 5.1 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 4.7 to 10 10 75 5.6 to 18 10 50 22 10 35 56, 68 10 15 Size (max mm) : 20.9 x Dia 7.75 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 12, 15 10 75 22 10 50 27 to 47 10 35 120, 150 10 15 Size (max mm) : 23.4 x Dia 9.3 Operating temperature range (°C) : -55 to +125	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CSR23	ESA/SCC 3002/001	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 1.2, 1.5 10 50 1.8 10 35 4.7, 5.6 10 15 Size (max mm) : 10.7 x Dia 3.8 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 5.6, 6.8 10 50 8.2, 10 10 35 33, 39 10 15 Size (max mm) : 15.5 x Dia 5.1 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 22, 27 10 50 33, 39, 47 10 35 150,180 10 15 Size (max mm) : 20.9 x Dia 7.75 Capacitance range (µF) Tol. (± %) Rated Volt. (V) 33, 39 10 50 56, 68 10 35 220, 270, 330 10 15 Size (max mm) : 23.4 x Dia 9.3 Operating temperature range (°C) : -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CLR79	ESA/SCC 3003/005		

Capacitance Range (µF)	Tol. (± %)	Rated Volt. (V)
2.7, 3.3, 3.6, 3.9	10	125
4.7, 5.6	10	100
3.5, 6.8, 8.2, 9	10	75
5, 10, 18, 22	10	50
8, 15, 25	10	30
33, 47, 56	10	16
	Size (max mm) :	10.7 x Dia 3.8

Capacitance range (µF)	Tol. (± %)	Rated Volt. (V)
15, 18	10	125
22, 30	10	100
15, 33	10	75
25, 47	10	50
40, 68, 120, 150, 170	10	30
220, 270	10	16
	Size (max mm) :	15.5 x Dia 5.1

Capacitance range (µF)	Tol. (± %)	Rated Volt. (V)
25, 39	10	125
43, 47, 56, 68	10	100
82, 100, 150, 180	10	75
60, 82, 270	10	50
300, 350, 430	10	30
680, 820	10	16
	Size (max mm) :	20.9 x Dia 7.75

Capacitance range (µF)	Tol. (± %)	Rated Volt. (V)
56, 68	10	125
82, 86, 100	10	100
220, 250	10	75
350, 430	10	50
560	10	30
1000, 1200	10	16
	Size (max mm) :	23.4 x Dia 9.3

Operating temperature range (°C) : -55 to +125

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CHS01 to CHS03	MIL-C-87217/1	For high impedance low energy circuits Cap. Range (µF) / Tol. (± %) / Rated Volt. (V) / Type 0.001 to 10 / 2 / 30 / CHS01 0.001 to 10 / 2 / 50 / CHS02 0.001 to 10 / 2 / 100 / CHS03 Operting temperature range (°C): -55 to +100	CRCUS
CRH01 to CRH05	MIL-C-83421/1	Do not use in circuits where available energy is <500 µJoules. Cap. Range (µF) / Tol. (± %) / Rated Volt. (V) / Type 0.001 to 10 / 5 / 30 / CRH01 0.001 to 10 / 5 / 50 / CRH02 0.001 to 10 / 5 / 100 / CRH03 0.001 to 3.9 / 5 / 200 / CRH04 0.001 to 2 / 5 / 400 / CRH05 Operating temperature range (°C): -65 to +125	CRCUS

PAGE INTENTIONALLY LEFT BLANK

Section 02 Component Type: CONNECTORS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
38999 Series II	ESA/SCC 3401/044	Bayonet Coupling, Removable Crimp Contacts Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts #22 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts #20 Other arrangements with contact sizes: 20, 16, 12, 8, 4 Operating Temperature Range (°C): -65 to +200 Contact sizes Rating (A) Contact sizes Rating (A) 4 80.0 8 46.0 12 23.0 16 13.0 20 7.5 22 5.0	
38999 Series III	ESA/SCC 3401/056	Triple-start, Self Locking Coupling, Scoop-proof, Removable Crimp Contacts Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts #22 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts #20 Other arrangements with contact sizes: 20, 16, 12, 8, 4 Operating Temperature Range (°C): -65 to +200 Contact sizes Rating (A) Contact sizes Rating (A) 4 80.0 8 46.0 12 23.0 16 13.0 20 7.5 22 5.0	
38999 SeriesIII Hermetic ReceptaclE	ESA/SCC 3401/047	Hermetic Receptacle Triple-start, Self Locking Coupling, Scoop-proof, non-removable solder contacts Range: 6, 13, 22, 37, 55, 66, 79, 100, 128 contacts #22 3, 6, 10, 19, 26, 32, 41, 53, 61 contacts #20 Operating Temperature Range (°C): -65 to +200 Contact size Rating (A) Contact size Rating (A) 20 7.5 22 5.0	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
D*M (Solder, PCB and Wire Wrap)	ESA/SCC 3401/001	Range: 9, 15, 25, 37 and 50 contacts #20 Coaxial Contact Arrangements, Power Contact Arrangements Gold-plated non-magnetic Operating Temperature Range (°C): -55 to +125 Contact size Rating (A) 20 7.5	
D*MA (Crimp)	ESA/SCC 3401/002	Range: 9, 15, 25, 37, 50 contacts #20 15, 26, 44, 62, 78 contacts # 22 Gold-plated non-magnetic Operating Temperature Range (°C): -55 to +125 Contact size Rating (A) Contact size Rating (A) 20 7.5 22 5.0	
MDM	ESA/SCC 3401/029	Range: 9, 15, 21, 25, 31, 37, 51 Contacts Terminations: Wire sizes AWG 26 and 28 and AWG25 uninsulated solid gold-plated wire Rating (A): 2.5 with AWG 26 and uninsulated wire 1.5 with AWG 28 Nickel Plated Shells Operating Temperature Range (°C): -55 to +125	
MTB	ESA/SCC 3401/031	Range: 5 through 81 contacts single in line Terminations: Wire sizes AWG 26 and 28 and AWG 25 uninsulated solid gold-plated wire Rating (A): 2.5 with AWG 26 and uninsulated wire 1.5 with AWG 28 Operating Temperature Range (°C): -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HE801/HPD	ESA/SCC 3401/016	Range: 2 rows: 17, 29, 41, 53, 65, 72, 84, 96, 120 contacts 3 rows: 62, 80, 98, 160 contacts Contact Type: Crimp , Wire-wrap, Solder (wire sizes 22 to 26) and PCB Rating (A): 5.0 (1 isolated contact used), 1.5 (all contacts used) Operating Temperature Range (°C): -55 to +125	
KMC	ESA/SCC 3401/039	Range: 3 rows 26, 44, 62, 80, 98, 144 contacts Contact Type: Solder and Wire-wrap for AWG 28 wires and PCB Rating (A): 2.0 (1 to 3 used contacts), 0.9 (4 to 26 used contacts) and 0.5 (over 27 used contacts) Operating Temperature Range (°C): -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SMA	ESA/SCC 3402/001	Frequency Range 0-18 GHz 3402/001 Male Contact (Plug) 3402/002 Female Contact (Receptacle) 3402/003 Adapters Crimp- or solder-type contact for flexible and semi-rigid cables, contacts for micro strip Gold-plated or amagnetic stainless steel Operating temperature range (°C): See Detail Specifications Types covered by similarity: Hermetically Sealed Receptacle	
SSMA	ESA/SCC 3402/004	Frequency Range 0-18 GHz 3402/004 Male contact (Plug) 3402/005 Female contact (Receptacle) 3402/006 Adapters Crimp- or solder-type contact for flexible and semi-rigid cables, contacts for micro strip Gold-plated nickel underplate or amagnetic Stainless Steel Operating temperature range (°C): See Detail Specifications Types covered by similarity: Hermetically Sealed Receptacle	
TNC	ESA/SCC 3402/008	Power connectors (75-120 W) Z=50 Ohms Frequency Range 0-18 GHz 3402/008 Male Contact (Plug) 3402/009 Female Contact (Receptacle) 3402/010 Adapters Crimp- or solder-type contact for flexible and semi-rigid cables, Amagnetic stainless steel body Operating temperature range (°C): See Detail Specifications	RADFV

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
D*J	ESA/SCC 3405/001	Range: 9, 15, 25, 37, 50 contacts Filter Arrangements as per ESA/SCC No 3405/001 Contacts for Low, Medium, Standard and High Frequency Grounded and non-filtered Contacts, Gold Plated Shells Operating Temperature Range (°C): -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
S700	ESA/SCC 3401/060	Rack and Panel, Removable Crimp Contacts Range: up to 250 contacts #22, multiple inserts Other arrangements with contact sizes: 20, 16, 12 Operating Temperature Range (°C): -65 to +200 Contact sizes Rating (A) Contact sizes Rating (A) 12 23.0 16 13.0 20 7.5 22 5.0	FCIFP

PAGE INTENTIONALLY LEFT BLANK

Section 03 Component Type: PIEZO-ELECTRIC DEVICES

Sub-Section

03-01	ALL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
DA	ESA/SCC 3501/006	Frequency Range: 2.5 - 300 MHz HC-27/U Can	
T807	ESA/SCC 3501/008	Frequency Range: 4.0 - 140 MHz TO-5 Can See also ESA/SCC 3501/001	
T1507	ESA/SCC 3501/009	Frequency Range: 2.5 - 20 MHz TO-8 Can See also ESA/SCC 3501/002	

PAGE INTENTIONALLY LEFT BLANK

Section 04 Component Type: DIODES

Sub-Section	
04-01	SWITCHING
04-02	RECTIFIER
04-03	VOLTAGE REGULATOR
04-05	RF/MICROWAVE SCHOTTKY (Si)
04-08	TRANSIENT SUPPRESSION
04-11	MICROWAVE VARACTOR (GaAs)
04-13	RF/MICROWAVE VARACTOR (Si)
04-15	MICROWAVE SCHOTTKY (GaAs)
04-16	RF/MICROWAVE PIN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N4148-1	ESA/SCC 5101/023	DC forward voltage (max V): 1.0 @ DC forward current (pk A): 0.01 DC reverse current (max μA): 0.5 @ DC reverse voltage (V): 75 Switching time (max ns) : 4.0 Package DO-35	
1N4150-1	ESA/SCC 5101/024	DC forward voltage (max V): 0.86 @ DC forward current (pk A): 0.05 DC reverse current (max μA): 0.1 @ DC reverse voltage (V): 50 Switching time (max ns) : 4.0 Package DO-204	
IS2593A	NASDA QTS 19500/1030	DC forward voltage (max V): 2.5 @ DC forward current (pk A): 1.0 DC reverse current (max μA): 10 @ DC reverse voltage (V): 1000 Switching time (max ns) : 0.4 Package (max mm) : Dia 5.8	HITJI
ISS296	NASDA QTS 19500/1033	DC forward voltage (max V): 1.0 @ DC forward current (pk A): 0.1 DC reverse current (max μA): 0.75 @ DC reverse voltage (V): 60 Switching time (max ns) : 7.0 Package (max mm) : 3.1 x 2.5 x 2.0	HITJI
ISS343	NASDA QTS 19500/1042	DC forward voltage (max V): 0.96 @ DC forward current (pk A): 0.1 DC reverse current (max μA): 0.1 @ DC reverse voltage (V): 170 Switching time (max ns) : 1.0 Package (max mm) : 3.1 x 2.5 x 2.0	HITJI

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N645-1, 1N647-1, 1N649-1	MIL-S-19500/240	DC forward voltage (max V): 1.0 @ DC forward current (pk A): 0.4 DC reverse current (max μA): 0.05 @ DC reverse voltage (V): 225, 400 Switching time (ns): - 600 Package: A1	MSCUA
1N5416, 1N5417, 1N5418, 1N 5420	MIL-S-19500/411	DC forward voltage (max V): 1.5 @ DC forward current (pk A): 9.0 DC reverse current (max μA): 1.0 @ DC reverse voltage (V): 100, 200 Switching time (ns): 150 (400 for 1N5420) 400, 600 Package: A248	MSCUA
1N5550, 1N5552, 1N5554	MIL-S-19500/420	DC forward voltage (max V): 1.5 @ DC forward current (pk A): 9.0 DC reverse current (max μA): 1.0 @ DC reverse voltage (V): 200, 600 Switching time (ns): 2000 1000 Package: A1	MSCUA
1N5614, 1N5616, 1N5618	MIL-S-19500/427	DC forward voltage (max V): 1.3 @ DC forward current (pk A): 3.0* DC reverse current (max μA): 0.5 @ DC reverse voltage (V): 200, 400 Switching time (ns): 2000 600 Package: A248 * pulsed	MSCUA
1N5615, 1N5617(A/UN),1N5619, 1N5623	MIL-S-19500/429	DC forward voltage (max V): 1.6 @ DC forward current (pk A): 3.0 DC reverse current (max μA): 1.0 @ DC reverse voltage (V): 200, 600 Switching time (ns): 150, 250, 500 respectively 1000 Package: A248	MSCUA
1N5806, 1N5811	MIL-S-19500/477	DC forward voltage (max V): 0.975 @ DC forward current (pk A): 2.5* DC reverse current (max μA): 1.0 @ DC reverse voltage (V): 150 Switching time (ns): 25 * pulsed Package: A248	MSCUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N754A-1 thru 1N759A-1	MIL-S-19500/127	Nominal Zener volt. (V): 3.3 - 12 @ Nom. Iz (mA): 20 Regulation voltage (V): 1.0 - 0.4 Power (W): 0.4 Package: DO-204	MSCUA
1N962B-1 thru 1N973B-1	MIL-S-19500/117	Nominal Zener volt. (V): 11 - 33 @ Nom. Iz (mA): 11.5 - 3.8 Regulation voltage (V): 0.5 - 1.6 Power (W): 0.4 Package: DO-204	MSCUA
1N4464 thru 1N4496	MIL-S-19500/406	Nominal Zener volt. (V): 6.2 - 200 @ Nom. Iz (mA): 40.0 - 1.2 Regulation voltage (V): 0.35 - 12.0 Power (W): 1.5 Package: A1	MSCUA
1N4954 thru 1N4992	MIL-S-19500/356	Nominal Zener volt. (V): 6.8 - 360 @ Nom. Iz (mA): 175.0 - 3.0 Regulation voltage (V): 0.7 - 35.0 Power (W): 2.25 Package: A248	MSCUA
1N6320 thru 1N6336	MIL-S-19500/533	Nominal Zener volt. (V): 6.8 - 33.0 @ Nom. Iz (mA): 20.0 - 3.8 Regulation voltage (V): 1.6 - 0.35 Power (W): 0.5 Package: DO-204	MSCUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
BAT 14/15	ESA/SCC 5106/014	DC reverse volt. (V): 3.0 Medium/low barrier mixer Total Capacitance CT (pF): 0.22 to 0.60 Noise Figure NF (dB): 9.0 to 5.5 @ 9.3 GHz Package (max mm): DIA 1.45 x 1.45 (T package)	SIEGM
ML40019 to 21, 400150 to 52, 60, 61	ESA/SCC 5513/006	DC reverse volt. (V): 3.0 Medium Barrier Mixer Total Capacitance (pF): 0.33 to 0.95 Noise Figure (dB): 6.0 to 7.5 @ 3, 9.3 and 16 GHz Package (max mm): DIA 2.16 x 1.40 variants 06, 14, 22, 30, 38, 46, 54 62 2.54 x 1.40 x 1.27 variants 08, 16, 24, 32, 40, 48, 56 64	
DH301 to 303,312 to 315,322 to 325	ESA/SCC 5512/017	DC reverse volt. (V): 3.0 Mixer Total Capacitance (pF): 0.48 to 0.21 Noise Figure (dB): 5.5 to 7.5 @ 3, 9.3 and 15 Ghz Package (max mm): DIA 1.47 x 1.35 variants 02, 08, 14, 20, 26, 32, 38 44, 50, 56, 62	
BAS 70	ESA/SCC 5512/020	DC reverse volt. (V): -70 Mixer Total Capacitance CT (pF): 1.2 / 2.0 (BAS 70-094 single diode) 0.08 (BAS 70-B bridge) Package (max mm): BAS 70-094 DIA 1.45 x 1.35 (T1 package) BAS 70-B 3.60 x 3.60 x 1.60 (HPAC-140 package)	SIEGM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N6103,A thru 1N6118,A	MIL-S-19500/516	Nominal Zener volt. (V): 6.75-190 @ Nom. Iz (mA): 175-5.0 Regulation voltage (V): - Power (W): 2.0 Package: A298 Peak Power (W): 500 for 1 ms	MSCUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ML4512 to ML4518	ESA/SCC 5512/002	Tuning Total Capacitance (max pF) Q min 0.74 - 3.99 7000 - 6000 Package (max mm): DIA 1.40 x 1.27 variants 11, 24, 37, 50, 63, 76, 89 2.54 x 1.40 x 1.27 variants 13, 26, 39, 52, 65, 78, 91	
ML4519,4520, 4539,4540, 4559,4560	ESA/SCC 5512/014	Tuning Total Capacitance (max pF) Q min 4.99 - 5.99 6000 - 4000 Package (max mm): DIA 1.40 x 1.27 variants 11, 24, 37, 50, 63, 76 2.54 x 1.40 x 1.27 variants 13, 26, 39, 52, 65, 78	
ML4532 to ML4538	ESA/SCC 5512/008	Tuning Total Capacitance (max pF) Q min 0.74 - 3.99 6000 - 5000 Package (max mm): DIA 1.40 x 1.27 variants 11, 24, 37, 50, 63, 76, 89 2.54 x 1.40 x 1.27 variants 13, 26, 39, 52, 65, 78, 91	
ML4572 to ML4576	ESA/SCC 5512/013	Hyperabrupt Tuning Total Capacitance (max pF) Q min 0.74 - 3.49 4000 - 2500 Package (max mm): DIA 1.40 x 1.27 variants 11, 24, 37, 50, 63 2.54 x 1.40 x 1.27 variants 13, 26, 39, 52, 65	
ML4577 to ML4580	ESA/SCC 5512/012	Hyperabrupt Tuning Total Capacitance (max pF) Q min 2.99 - 5.99 2500 - 2000 Package (max mm): DIA 1.40 x 1.27 variants 11, 24, 37, 50 2.54 x 1.40 x 1.27 variants 13, 26, 39, 52	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ML48701E to 48705E	ESA/SCC 5512/010	Multiplier DC Reverse Voltage (V): -25 Total Capacitance (max pF) Junction Capacitance (pF) 0.31 - 0.90 0.2 - 0.6 Package (max mm): DIA 1.40 x 1.27 variants 09, 19, 29, 39, 49	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
DH252, 256, 267, 292	ESA/SCC 5512/016	Multiplier Total Capacitance (max pF) DC Reverse Voltage (V) 0.40 - 2.20 -15 to -40 Package (max mm): DIA 3.23 x 5.72	
ML4310 to ML4319	ESA/SCC 5512/003	Tuning Total Capacitance (max pF) Q min 0.6 - 5.4 2750 - 1500 Package (max mm): DIA 1.40 x 1.27 variants 09, 20, 31, 42, 53, 64, 75 2.54 x 1.40 x 1.27 variants 11, 22, 33, 44, 55, 66, 77	
ML4331 to ML4335	ESA/SCC 5512/004	Tuning Total Capacitance (max pF) Q min 0.79 - 2.6 2000 - 1350 Package (max mm): DIA 1.40 x 1.27 variants 09, 20, 31, 42, 53 2.54 x 1.40 x 1.27 variants 11, 22, 33, 44, 55	
ML4336 to ML4343	ESA/SCC 5512/005	Tuning Total Capacitance (max pF) Q min 3.19 - 11.4 1350 - 800 Package (max mm): DIA 3.23 x 2.46 variants 02,08,14,20,26,32,38,44 2.62 x 2.62 x 1.12 variants 06,12,18,24,30,36,42,48	
ML4355 to ML4365	ESA/SCC 5512/007	Tuning Total Capacitance (max pF) Q min 2.45 - 17.1 850 - 500 Package (max mm): DIA 3.23 x 2.46 variants 02, 08, 14, 20, 26, 32, 38, 44, 48, 52, 56 2.62 x 2.62 x 1.12 variants 06, 12, 18, 24, 30, 36, 42	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ML40461 - ML40464	ESA/SCC 5513/021	DC reverse volt. (V): 5.0 Total Capacitance CT (pF): 0.23 - 0.26 Noise Figure NF (dB): 6.5 - 7.5 @ 9.3, 16, 24 and 36 GHz Package (max mm): DIA 1.40 x 1.27 variant 03, 11, 19, 27 of 5513/021	MACBM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
BXY42-MESA	ESA/SCC 5513/017	Rev. volt. (V): -50 Tot. Cap. (pF): 0.24, 0.31 RF power (W): 0.35, 0.60 Minor. carrier life time @ If=10mA (ns): 35 Fast switching Package (max mm): DIA 1.45 x 1.95 variant 01 DIA 1.45 x 1.35 variant 02	SIEGM
ML4603-54 to ML4608-54	ESA/SCC 5513/004	Rev. volt. (V): -35 / -100 Tot. Cap. (pF): 0.10 - 1.20 / 0.10 - 1.15 RF power (W): 0.20 / 0.20 Minor. carrier life time @ If=10mA (ns): 300 / 700 @ If=4.5mA Fast switching Package (max mm): DIA 1.91 x 4.19	
ML4609/ML4613/ML4616	ESA/SCC 5513/008	Rev. volt. (V): -15, -40, -70 Tot. Cap. (pF): 0.46 RF power (W): 2.5 - 3.5 Minor. carrier life time @ If=10mA (ns): 20, 40, 120 Fast switching Plated heat sink Package (max mm): DIA 1.40 x 1.27 variants 17, 41, 65 2.54 x 1.40 x 1.27 variants 23, 47, 71	
ML4610, 4617, 4618, 4619	ESA/SCC 5513/009	Rev. volt. (V): -15, -100 Tot. Cap. (pF): 0.10 - 1.20 RF power (W): 0.2, 3.1 Minor. carrier life time @ If=10mA (ns): 35, 400 Fast switching Plated heat sink Package (max mm): DIA 1.40 x 1.27 variants 17, 42, 67, 92 2.54 x 1.40 x 1.27 variants 23, 48, 73, 98	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ML4611P/ML4614P	ESA/SCC 5513/020	Rev. volt. (V): -40, -70 Tot. Cap. (pF): 0.20 - 1.10 RF power (W): 0.5, 2.0 Minor. carrier life time @ If=10mA (ns): 70, 200 Fast switching Plated heat sink Package (max mm): DIA 1.40 x 1.27 variants 17, 65 2.54 x 1.40 x 1.27 variants 23, 71	
ML4620, 4621, 4625, 4626	ESA/SCC 5513/011	Rev. volt. (V): -100, -150 Tot. Cap. (pF): 0.25 - 1.20 RF power (W): 0.6 - 6.25 Minor. carrier life time @ If=10mA (ns): 240, 500 Plated heat sink Package (max mm): DIA 1.40 x 1.27 variants 17, 41, 65, 89 2.54 x 1.40 x 1.27 variants 23, 47, 71, 95	
ML4622 to ML4624	ESA/SCC 5513/014	Rev. volt. (V): -150 Tot. Cap. (pF): 0.21, 1.20 RF power (W): 0.20, 3.50 Minor. carrier life time @ If=4.5mA (ns): 700 Fast switching Package (max mm): DIA 2.16 x 1.40 variants 21, 45, 61 2.54 x 1.40 x 1.27 variants 23, 47	
ML4627 to ML4629	ESA/SCC 5513/015	Rev. volt. (V): -200 Tot. Cap. (pF): 0.10, 1.20 RF power (W): 0.20, 4.10 Minor. carrier life time @ If=4.5mA (ns): 1200 Fast switching Package (max mm): DIA 2.16 x 1.40 variants 21, 45, 61 2.54 x 1.40 x 1.27 variants 23, 47	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ML4630, 4631	ESA/SCC 5513/003	Rev. volt. (V): -200 Tot. Cap. (pF): 0.25 - 1.20 RF power (W): 0.6 - 5.0 Minor. carrier life time @ If=4.5mA (ns): 800 Plated heat sink Package (max mm): DIA 1.40 x 1.27 variants 17, 41 2.54 x 1.40 x 1.27 variants 23, 47	
ML4640 to ML4647	ESA/SCC 5513/012	Rev. volt. (V): -300, -400 Tot. Cap. (pF): 0.20, 1.40 RF power (W): 0.6 - 8.0 Minor. carrier life time @ If=4.5mA (µs): 1.5 - 6.0 Package (max mm): DIA 2.16 x 1.40 variants 12,25,38,50,62,75,87 2.62 x 2.62 x 1.12 variants 13, 26, 63	
ML4648 to ML4655	ESA/SCC 5513/013	Rev. volt. (V): -500, -600 Tot. Cap. (pF): 0.20, 1.40 RF power (W): 0.6 - 8.3 Minor. carrier life time @ If=4.5mA (µs): 3.0 - 9.0 Package (max mm): DIA 2.16 x 1.40 variants 12, 25, 37, 53, 66, 78 2.62 x 2.62 x 1.12 variants 13, 54	
ML4660,61,63,65,67,69,71 to 74	ESA/SCC 5513/005	Rev. volt. (V): -15 to -150 Insert. Loss (dB): 0.7 - 1.5 RF power (W): 0.80, 3.13 Minor. carrier life time @ If=4.5mA (ns): 25 - 400 -200 to -600 1.0 - 1.2 1.79 - 3.57 0.7 - 4.0 µs @ If=10mA Broadband Package (max mm): DIA 2.79 x 2.50 variants 01, 04, 07, 10, 13, 16, 19, 22, 25, 28	

PAGE INTENTIONALLY LEFT BLANK

Section 05 Component Type: FILTERS

Sub-Section

05-01 FEEDTHROUGH

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1270/712	ESA/SCC 3008/001	Pi Filter Minimum Capacitance: 5000pF Rated Voltage: 200V Rated DC Current: 10 A Variant: 02 Insertion loss @ 1GHz: 62dB Operating Temperature Range (°C): -55 to + 125	
SFP 040	ESA/SCC 3008/014	Pi Filter Minimum Capacitance: 44800pF Rated Voltage: 100V Rated DC Current: 10 A Variant: 14 Insertion loss @ 1GHz: 75dB Minimum Capacitance: 2400pF Rated Voltage: 200V Rated DC Current: 10 A Variant: 02 Insertion loss @ 1GHz: 60dB Minimum Capacitance: 2400pF Rated Voltage: 200V Rated DC Current: 10 A Variant: 15 Insertion loss @ 1GHz: 75dB Operating Temperature Range (°C): -55 to + 125	EFDFL

PAGE INTENTIONALLY LEFT BLANK

Section 06 Component Type: FUSES

There are no preferred sources of FUSES

PAGE INTENTIONALLY LEFT BLANK

Section 07 Component Type: INDUCTORS

There are no preferred sources of INDUCTORS

PAGE INTENTIONALLY LEFT BLANK

Section 08 Component Type: MICROCIRCUITS

Sub-Section	
08-22	MEMORY PROM
08-25	MEMORY SRAM
08-29	MEMORY OTHERS
08-40	ASIC TECHNOLOGIES DIGITAL
08-50	LINEAR OPERATIONAL AMPLIFIER
08-51	LINEAR SAMPLE AND HOLD AMPLIFIER
08-52	LINEAR VOLTAGE REGULATOR/REFERENCE
08-53	LINEAR VOLTAGE COMPARATOR
08-54	LINEAR SWITCHING REGULATOR
08-57	LINEAR TIMER
08-62	LINEAR DIGITAL TO ANALOG CONVERTER
08-80	LOGIC FAMILIES

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
53S841	M38510/20902	PROM, 2048k x 4 with 3-State Outputs, 125ns Access	RAYUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HC6364	SMD 5962-H3829440	8k x 8 SRAM	HONUP
IBM2568	SMD 5962-H9215301	32k x 8 SRAM	IBMUM
IBM6408C	SMD 5962-H3829444	8k x 8 SRAM	IBMUM
M65656	ESA/SCC 9301/030	Static, 32k x 8 SRAM	
M65697	ESA/SCC 9301/038	Static, 256k x 1 SRAM	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
6504RH	M38510R24503	Static, 4k x 1, synchronous with 3-State Outputs	
6716455	5962H3829437	Static, 8k x 8, Rad Hard, 55ns	
6716470	5962H3829436	Static, 8k x 8, Rad Hard, 70ns	
6716485	5962H3829435	Static, 8k x 8, Rad Hard, 85ns	
HM65162	ESA/SCC 9301/015	2048 x 8-Bit Asynchronous with 3-State Outputs Variants 01 and 03	MHSFN
HM65262	ESA/SCC 9301/018	16348 x 1-Bit Asynchronous with 3-State Outputs Variants 01 and 03	MHSFN
HM65664	ESA/SCC 9301/029	8192 x 8-Bit Asynchronous with 3-State Outputs Variants 01, 05, 09 and 13	MHSFN
HM65687	ESA/SCC 9301/026	65536 x 1-Bit Asynchronous with 3-State Outputs Variants 01, 04, 07 and 10	MHSFN
HM67202FV	ESA/SCC 9301/032	Static, 1k x 9, FIFO with 3-State Outputs	MHSFN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
BITSOS Std Cell MA9000 Gate Array	ESA/SCC 9000	SOS4 is a 2-micron, double metal silicon-gate CMOS/SOS process designed for radiation hardened, low voltage cell based ASICs. The SOS4 process is suitable for digital applications working in radiation intensive environments. See ESA/SCC QPL for Capability Abstract.	
CMOS/SOS, DLM	ESA/SCC 9000	GPS, Lincoln's 2.5μ Double Layer Metal, polysilicon gate CMOS/SOS process is designed for radiation hardened integrated circuit design.The Capability Domain includes the MACROSOS1 standard cell design route and the MA9000 channelled gate array design route. See ESA/SCC QPL for Capability Abstract.	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
LM124	M38510/11005	Low Power Quad Bipolar Operational Amplifier	NSCUC
1558	M38510/10108	Dual, Internally Compensated Operational Amplifier	NSCUC
LF155	M38510/11401	JFET Input, Low Power Operational Amplifier	NSCUC LTCUM PMIUC
LF155A	M38510/11404	JFET Input, High Performance, Low Power, Low Offset Operational Amplifier	LTCUM PMIUC
LF156	M38510/11402	JFET Input, Wide Band Operational Amplifier	NSCUC LTCUM PMIUC
LF156A	M38510/11405	JFET Input, High Performance,Wide Band, Low Offset Operational Amplifier	LTCUM PMIUC
LM101A	M38510/10103	Single, Externally Compensated Operational Amplifier	NSCUC LTCUM PMIUC
LM108A	M38510/10104	Single, Externally Compensated Operational Amplifier	NSCUC LTCUM PMIUC
LM118	M38510/10107	Precision, High Speed Operational Amplifier	NSCUC LTCUM
LM148	M38510/11001	Quad Medium Power, Internally Compensated Operational Amplifier	NSCUC

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
LM741A	M38510/10101	Single, Internally Compensated Operational Amplifier	NSCUC PMIUC
LM747A	M38510/10102	Dual, Internally Compensated Operational Amplifier	NSCUM
OP07	M38510/13502	Single, Low Offset, Internally Compensated Operational Amplifier	NSCUC
OP07A	M38510/13501	Single, Ultra-Low Offset, Internally Compensated Operational Amplifier	LTCUM PMIUC
OP27A	M38510/13501	Single, Ultra-Low Noise and Offset, Internally Compensated Operational Amplifier	LTCUM PMIUC

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
198	M38510/12501	Sample and Hold Circuit, 10K Ohms	NSCUC LTCUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
LM117H	M38510/11703	3-Terminal Adjustable Positive Regulator, 0.5A	NSCUC LTCUM
LM117K	M38510/11704	3-Terminal Adjustable Positive Regulator, 1.5A	NSCUC LTCUM
LM137H	M38510/11803	3 Terminal Adjustable Negative Regulator, 0.5A	NTCUC LTCUM
LM137K	M38510/11804	3 Terminal Adjustable Negative Regulator, 1.5A	NTCUC LTCUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
119	M38510/10306	Dual, High Speed Voltage Comparator	NSCUC LTCUM
2111	M38510/10305	Dual Precision Voltage Comparator/Buffer	NSCUM
LM111	M38510/10304	Voltage Comparator	NSCUC LTCUM PMIUC
LM139	M38510/11201	Quad, Single Supply, Low power Voltage Comparator	NSCUC PMIUC
LM193	M38510/11202	Dual, Low Power, Low Offset Voltage Comparator	NSCUM
LM723	M38510/10201	Positive or Negative Voltage Regulator	NSCUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SG1525A	ESA/SCC 9108/011	Regulating Pulse Width Modulator, Variants 03 and 04	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
555	M38510/10901	Single Precision Timer	NSCUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
DAC08	ESA/SCC 9407/001	8-Bit D/A Converters, 0.19% Linearity	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54AC00	Gate	M38510/75001	Quad 2-Input NAND Gate	NSCUC
54AC02	Gate	M38510R75101	Quad 2-Input NOR Gate	NSCUC
54AC04	Gate	M38510R75701	Hex Inverter	NSCUC
54AC08	Gate	M38510R75203	Quad 2-Input AND Gate	NSCUC
54AC10	Gate	M38510R75002	Triple 3-Input NAND Gate	NSCUC
54AC11	Gate	M38510/75204	Triple 3-Input AND Gate	NSCUC
54AC14	Gate	M38510R75702	Hex Schmitt Trigger Inverter	NSCUC
54AC20	Gate	M38510R75003	Dual 4-Input NAND Gate	NSCUC
54AC32	Gate	M38510R75201	Quad 2-Input OR Gate	NSCUC
54AC86	Gate	M38510R75202	Quad 2-Input Exclusive OR Gate	NSCUC
54AC240	Buffer	M38510R75703	Octal Bus Buffer with Inverted 3-State Outputs	NSCUC
54AC241	Buffer	M38510R75704	Octal Bus Buffer with 3-State Outputs	NSCUC
54AC244	Buffer	M38510R75705	Octal Buffer/Line Driver with 3-State Outputs	NSCUC
54AC74	Flip-Flop	M38510/75302	Dual D-Type Flip-Flop, Positive Edge Triggered	NSCUC
54AC273	Flip-Flop	M38510/75601	Octal D-Type Flip-Flop with Clear	NSCUC
54AC374	Flip-Flop	M38510/75602	Octal D-Type Flip-Flop with 3-State Outputs	NSCUC

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54AC373	Latch	M38510/75403	Octal D-Type Transparent Latches with 3-State Outputs	NSCUC
54AC151	Multiplexer	M38510/76201	8-Input Multiplexer	NSCUC
54AC153	Multiplexer	M38510/76202	Dual 4-Input Multiplexer	NSCUC
54AC157	Multiplexer	M38510/76203	Quad 2-Input Multiplexer	NSCUC
54AC138	Decoder/Demux	M38510/75802	1-of-8 Decoder/Demultiplexer	NSCUC
54AC299	Shift Register	M38510R76506	8-Bit Universal Shift Register with Common Parallel I/O Pins	NSCUC
54AC245	Transceiver	M38510R75503	Octal Bidirectional Transceiver with 3-State Outputs	NSCUC
54AC520	Comparator	5962-9091601	8-Bit Magnitude Comparator	NSCUC
54HC00	Gate	ESA/SCC 9201/105	Quad 2-Input NAND Gate	
54HC02	Gate	ESA/SCC 9201/113	Quad 2-Input NOR Gate	
54HC03	Gate	ESA/SCC 9201/114	Quad 2-Input Nand Gate with Open Drain Output	
54HC04	Gate	ESA/SCC 9401/033	Hex Inverter	
54HC08	Gate	ESA/SCC 9201/106	Quad 2-Input Positive AND Gate	
54HC10	Gate	ESA/SCC 9201/107	Triple 3-Input NAND Gate	
54HC11	Gate	ESA/SCC 9201/117	Triple 3-Input AND Gate	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC14	Gate	ESA/SCC 9409/007	Hex Schmitt Trigger Inverter	
54HC20	Gate	ESA/SCC 9201/118	Dual 4-Input NAND Gate	
54HC21	Gate	ESA/SCC 9201/108	Dual 4-Input AND Gate	
54HC27	Gate	ESA/SCC 9201/109	Triple 3-Input NOR Gate	
54HC30	Gate	ESA/SCC 9201/110	8-Input NAND Gate	
54HC32	Gate	ESA/SCC 9201/111	Quad 2-Input OR Gate	
54HC86	Gate	ESA/SCC 9201/119	Quad 2-Input Exclusive OR Gate	
54HC132	Gate	ESA/SCC 9201/120	Quad 2-Input NAND Gate with Schmitt-trigger Inputs	
54HC386	Gate	ESA/SCC 9201/121	Quad 2-Input Exclusive OR Gate	
54HC4002	Gate	ESA/SCC 9201/130	Dual 4-Input NOR Gate	
54HC4072	Gate	ESA/SCC 9201/124	Dual 4-input OR Gate	
54HC4075	Gate	ESA/SCC 9201/129	Triple 3-input OR Gates	
54HC4078	Gate	ESA/SCC 9201/123	8-input NOR/OR Gate	
54HC125	Buffer	ESA/SCC 9401/039	Quad Bus Buffers with 3 State Outputs	
54HC126	Buffer	ESA/SCC 9401/046	Quad Bus Buffers with 3 State Outputs	
54HC240	Buffer	ESA/SCC 9401/034	Octal Bus Buffer with Inverted 3-State Outputs	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC241	Buffer	ESA/SCC 9401/035	Octal Bus Buffer with 3-State Outputs	
54HC244	Buffer	ESA/SCC 9401/048	Octal Bus Buffer with 3-State Outputs	
54HC365	Buffer	ESA/SCC 9401/052	Hex Bus Buffer with 3-State Outputs	
54HC367	Buffer	ESA/SCC 9401/044	Hex Bus Buffers with 3-State Outputs	
54HC368	Buffer	ESA/SCC 9401/054	Hex Bus Buffer with Inverted 3-State Outputs	
54HC540	Buffer	ESA/SCC 9401/049	Octal Bus Buffer with Inverted 3-State Outputs	
54HC541	Buffer	ESA/SCC 9401/047	Octal Bus Buffer with 3-State Outputs	
54HC4049	Buffer	ESA/SCC 9401/037	Hex Buffer Converter with Inverted Outputs	
54HC4050	Buffer	ESA/SCC 9401/038	Hex Buffer Converter	
54HC160	Counter	ESA/SCC 9204/062	Synchronous Presettable 4-Bit Decade Counter with Direct Clear	
54HC161	Counter	ESA/SCC 9204/059	Asynchronous 4-Bit Binary Counter	
54HC163	Counter	ESA/SCC 9204/073	Synchronous 4-Bit Binary Counter	
54HC390	Counter	ESA/SCC 9204/078	Dual 4-Bit Decade Counter	
54HC393	Counter	ESA/SCC 9204/074	Dual 4-Bit Negative Edge-triggered Binary Counter	
54HC590	Counter	ESA/SCC 9204/071	8-Bit Binary Counter with 3-State Output Registers	
54HC592	Counter	ESA/SCC 9204/079	8-Bit Register Binary Counter	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC4020	Counter	ESA/SCC 9204/070	Asynchronous Negative Edge-triggered 14-Bit Binary Counters	
54HC4060	Counter	ESA/SCC 9204/076	Asynchronous Negative Edge-triggered 14-Bit Binary Counters and Oscillators	
54HC4024	Counter	ESA/SCC 9204/077	Asynchronous Negative Edge Triggered 7-Bit Binary Counter	
54HC4520	Counter	ESA/SCC 9204/080	Dual 4-Bit Binary Counter	
54HC190	Counter	ESA/SCC 9204/068	Synchronous 4-Bit Up/Down Decade Counter	
54HC191	Counter	ESA/SCC 9204/066	Synchronous 4-Bit Up/Down Binary Counter	
54HC4040	Counter	ESA/SCC 9204/069	Asynchronous Negative Edge-triggered 12-Bit Binary Counters	
54HC193	Counter	ESA/SCC 9204/065	Synchronous 4-Bit Up/Down Binary Counter (Dual Clock with Clear)	
54HC73	Flip-Flop	ESA/SCC 9203/071	Dual Negative Edge Triggered J-K Flip-Flop with Clear	
54HC74	Flip-Flop	ESA/SCC 9203/050	Dual Negative Edge Triggered D-Type Flip-Flop with Clear	
54HC76	Flip-Flop	ESA/SCC 9203/061	Dual J-K Negative Edge Triggered Flip-Flop with Preset and Clear	
54HC107	Flip-Flop	ESA/SCC 9203/072	Dual J-K Negative Edge Triggered Flip-Flop with Direct Clear	
54HC109	Flip-Flop	ESA/SCC 9306/048	Dual J-K Positive Edge Triggered Flip-Flop with Preset and Clear	
54HC112	Flip-Flop	ESA/SCC 9203/051	Dual J-K Negative Edge Triggered Flip-Flop with Preset and Clear	
54HC174	Flip-Flop	ESA/SCC 9306/052	Hex D-Type Edge-triggered Flip-Flop with Clear	
54HC175	Flip-Flop	ESA/SCC 9203/052	Quad D-Type Edge-triggered Flip-Flop with Clear	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC273	Flip-Flop	ESA/SCC 9203/053	Octal D-Type Edge-triggered Flip-Flop with Clear	
54HC374	Flip-Flop	ESA/SCC 9203/060	Octal D-Type Edge-triggered Flip-Flop with 3-State Outputs	
54HC574	Flip-Flop	ESA/SCC 9203/054	Octal D-Type Edge-triggered Flip-Flops with 3-State Outputs	
54HC75	Latch	ESA/SCC 9203/065	Quad 4-Bit Bistable Latches	
54HC373	Latch	ESA/SCC 9203/059	Octal D-Type Transparent Latches with 3-State Outputs	
54HC573	Latch	ESA/SCC 9202/072	Octal D-Type Transparent Latch with 3-State Outputs	
54HC164	Shift Register	ESA/SCC 9306/041	8-bit Sipo Shift Register	
54HC165	Shift Register	ESA/SCC 9306/042	8-bit Sipo Shift Register	
54HC166	Shift Register	ESA/SCC 9306/043	8-bit Piso Shift Register	
54HC195	Shift Register	ESA/SCC 9306/053	4-bit Pipo Shift Register with Overriding Clear	
54HC194	Shift Register	ESA/SCC 9306/047	4-bit Pipo Shift Register	
54HC595	Shift Register	ESA/SCC 9306/051	8-Bit Shift Registers with 3-State Output Registers	
54HC597	Shift Register	ESA/SCC 9306/054	8-Bit Piso Shift Register	
54HC670	Register	ESA/SCC 9410/016	4-Word x 4-Bit Register File with 3-State Outputs	
54HC4094	Register	ESA/SCC 9306/050	8-Bit Sipo Shift Latch Register with 3-State Outputs	
54HC283	Adder	ESA/SCC 9202/075	4-Bit Binary Full Adders with Fast Carry	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC85	Comparator	ESA/SCC 9209/004	4-Bit Magnitude Comparator	
54HC688	Comparator	ESA/SCC 9209/005	8-Bit Identity Comparator	
54HC153	Selector/Mux	ESA/SCC 9408/038	Dual 4-to-1-Line Data Selector/Multiplexer	
54HC157	Selector/Mux	ESA/SCC 9408/057	Quad 2-line to 1-line Data Selectors/Multiplexers	
54HC158	Selector/Mux	ESA/SCC 9408/059	Quad 2-to-1-Line Data Selectors/Multiplexers with Inverted Outputs	
54HC251	Selector/Mux	ESA/SCC 9408/048	1 to 8 Data Selector/Multiplexer with 3-State Outputs	
54HC253	Selector/Mux	ESA/SCC 9408/058	Dual 4 Line to 1 Line Data Selector/Multiplexer with 3-State Outputs	
54HC257	Selector/Mux	ESA/SCC 9408/047	Quad 2-to-1-Line Data Selector/Multiplexer with 3-State Outputs	
54HC4051	Mux/Demux	ESA/SCC 9408/064	Analogue Multiplexer/Demultiplexer	
54HC4053	Mux/Demux	ESA/SCC 9408/065	Analogue Multiplexer/Demultiplexer (Triple 2-Channel)	
54HC356	Mux/Register	ESA/SCC 9306/055	8-Channel Multiplexer/Register with 3-State Outputs	
54HC148	Encoder	ESA/SCC 9410/017	8-Line to 3-Line Priority Encoder	
54HC237	Decoder/Demux	ESA/SCC 9205/021	3-to-8-Line Decoder/Demultiplexer with Address Latch	
54HC137	Decoder/Demux	ESA/SCC 9205/013	3-to-8 Line Decoders/Demultiplexers with Address Latches and Inverted Outputs	
54HC138	Decoder/Demux	ESA/SCC 9408/046	3-to-8 Line Decoders/Demultiplexers with Inverted Outputs	
54HC139	Decoder/Demux	ESA/SCC 9205/017	Dual 2-to-4-line Decoders/Demultiplexers with Inverted Outputs	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HC154	Decoder/Demux	ESA/SCC 9205/023	4-to-6 Line Decoder/Demultiplexer with Inverted Output	
54HC42	Decoder/Demux	ESA/SCC 9205/020	4-to-10-Line Decoder/Demultiplexer with Inverted Output	
54HC151	Selector/Demux	ESA/SCC 9408/054	8-line to 1-line Data Selectors/Multiplexer	
54HC4066	Switch	ESA/SCC 9408/052	Quad Bilateral Switch	
54HC4514	Decoder/Latch	ESA/SCC 9205/019	4-to-16-line Decoder/Latch	
54HC242	Transceiver	ESA/SCC 9405/011	Quad Bus Transceiver with Inverted 3-State Outputs	
54HC243	Transceiver	ESA/SCC 9405/012	Quad Bus Transceiver with 3-State Outputs	
54HC245	Transceiver	ESA/SCC 9405/013	Octal Bus Transceiver with 3-State Outputs	
54HC623	Transceiver	ESA/SCC 9405/016	Octal Bus Transceiver with 3-State Outputs	
54HC280	Parity Generat	ESA/SCC 9208/003	9-Bit Odd/Even Parity Generator/Checker	
54HC123	Multivibrator	ESA/SCC 9207/006	Dual Positive or Negative Edge Schmitt-Retriggerable Monostable Multivibrator with Clear	
54HC4538	Multivibrator	ESA/SCC 9207/008	Dual Positive or Negative Edge Schmitt-Retriggerable Monostable Multivibrators with Clear Reset	
54HCT00	Gate	ESA/SCC 9201/132	Quad 2-Input NAND Gates	
54HCT02	Gate	ESA/SCC 9201/133	Quad 2-Input NOR Gates	

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HCT74	Flip-Flop	ESA/SCC 9203/070	Dual D-Type Flip-Flop with Preset and Clear	
54HCT138	Decoder/Demux	ESA/SCC 9205/022	3-to-8-Line Decoder/Demultiplexer with Inverted Outputs	
54HCT373	Latch	ESA/SCC 9203/064	Octal D-Type Transparent Latch with 3-State Outputs	
54HCT240	Buffer	ESA/SCC 9401/045	Octal Bus Buffer with Inverted 3-State Outputs	
54HCT244	Buffer	ESA/SCC 9402/009	Octal Bus Buffer with 3-State Outputs	
54HCT245	Transceiver	ESA/SCC 9405/014	Octal Bus Transceiver with 3-State Outputs	
54HCT374	Flip-Flop	ESA/SCC 9203/066	Octal D-Type Edge-triggered Flip-Flop with 3-State Outputs	
54HCU04	Inverter	ESA/SCC 9401/055	Hex Inverter (Single Stage) with Unbuffered Outputs	

PAGE INTENTIONALLY LEFT BLANK

Section 09 Component Type: RELAYS

Sub-Section

09-01	NON LATCHING
09-02	LATCHING

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
GP5	ESA/SCC 3601/003	Contact Rating: 2A at 28 Vdc Package Type: half-crystal can Operating Temperature Range (°C): -65 to +125 Variants 02, 03, 06 of 3601/003 Contact Configuration: 2PDT Coil Voltage: 26.5 and 12 Vdc Coil resistance 900 and 190 Ω	
E215	ESA/SCC 3601/007	Contact Rating: 15A at 28 Vdc Package Type: half-cubic inch can Operating Temperature Range (°C): -65 to +125 Variants 03, 04, 06 of 3601/007 Contact Configuration: 2PDT Coil Voltage: 28 and 12 Vdc	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
GP2	ESA/SCC 3602/003	Contact Rating: 2A at 28 Vdc Package Type: half-crystal can Operating Temperature Range (°C): -65 to +125 Variants 02, 03 and 06 of 3602/003 Contact Configuration: 2PDT Coil Voltage: 26.5 and 12 Vdc	
EL215	ESA/SCC 3602/009	Contact Rating: 15A at 28 Vdc Package Type: half-cubic inch can Operating Temperature Range (°C): -65 to +125 Variants 03, 04, 06 of 3602/009 Contact Configuration: 2PDT Coil Voltage: 28 and 12 Vdc	
EL415	ESA/SCC 3602/004	Contact Rating: 15A at 28 Vdc Package Type: cubic inch can Operating Temperature Range (°C): -65 to +125 Variants 04, 06 and 09 of 3602/004 Contact Configuration: 4PDT Coil Voltage: 28 and 12 Vdc	
GP250	ESA/SCC 3602/010	Contact Rating: 2A at 50 Vdc (50 000 operations) Package Type: half-crystal can Operating Temperature Range (°C): -65 to +125 Variants 02, 03 and 06 of 3602/010 Contact Configuration: 2PDT Coil Voltage: 26.5 and 12 Vdc	
GP3A	ESA/SCC 3602/005	Contact Rating: 10A at 50 Vdc Package Type: >crystal can Operating Temperature Range (°C): -65 to +125 Variants 03, 04 and 06 of 3602/005 Contact Configuration: 1PDT Coil Voltage: 26.5 and 12 Vdc	

PAGE INTENTIONALLY LEFT BLANK

Section 10 Component Type: RESISTORS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RBR52	MIL-R-39005/1	Range (Ω): 10 - 1.21M TC (10E-6/°C): 5 Max. Voltage (V): 600 Operating Temperature Range (°C): -55 to +155 Tol. (± %) : 0.5 Power Rating (W): 0.5 Size (max mm): DIA 9.90 x 25.9	ULTUG
RBR54	MIL-R-39005/3	Range (Ω): 4.99 - 562k TC (10E-6/°C): 5 Max. Voltage (V): 300 Operating Temperature Range (°C): -55 to +155 Tol. (± %) : 0.5 Power Rating (W): 0.25 Size (max mm): DIA 6.75 x 19.56	ULTUG
RBR56	ESA/SCC 4002/001	Range (Ω): 500 - 300K TC (10E-6/°C): 5 Max. Voltage (V): 150 Operating Temperature Range (°C): -55 to +155 Tol. (± %) : 0.5 Power Rating (W): 0.125 Size (max mm): DIA 6.9 x 9.3	
RBR57	MIL-R-39005/7	Range (Ω): 10 - 1.37M TC (10E-6/°C): 5 Max. Voltage (V): 600 Operating Temperature Range (°C): -55 to +155 Tol. (± %) : 0.5 Power Rating (W): 0.75 Size (max mm): DIA 13.10 x 25.91	ULTUG
RWR80 (RLP 2)	ESA/SCC 4002/003	Range (Ω): 0.5 - 2.2K TC (10E-6/°C): 30 > 10Ω Max. Voltage (V): 120 Operating Temperature Range (°C): -55 to +275 Coated variant Tol. (± %) : 1 Power Rating (W): 2 Size (max mm): DIA 4.0 x 11.1	
RWR81 (RLP 1)	ESA/SCC 4002/005	Range (Ω): 0.5 - 1K TC (10E-6/°C): 20 > 10Ω Max. Voltage (V): 50 Operating Temperature Range (°C): -55 to + 275 Coated variant Tol. (± %) : 1 Power Rating (W): 1 Size (max mm): DIA 2.67 x 7.14	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RWR89 (RLP 3)	ESA/SCC 4002/004	Range (Ω): 0.3 - 4.12K TC (10E6/°C): 30 > 10Ω Max. Voltage (V): 200 Operating Temperature Range (°C): -55 to + 275 Coated variant Tol. (± %) : 1 Power Rating (W): 3 Size (max mm): DIA 5.54 x 15.80	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RER60	ESA/SCC 4003/001	Range (Ω): 1.0 - 1.0K Tol. (± %): 1 Power Rating (W): 5.0 Size (max mm): 10.05 x 8.92 x 16.81 Operating temperature range (°C) : -55 to +200 Solder eyelet terminals	
RER65	ESA/SCC 4003/002	Range (Ω): 1.0 - 2.0K Tol. (± %): 1 Power Rating (W): 10.0 Size (max mm): 12.70 x 11.10 x 20.62 Operating temperature range (°C) : -55 to +200 Solder eyelet terminals	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RLR05 (HR 3)	ESA/SCC 4001/005	Range (Ω): 10 - 511k Tol. (± %) : 2 TC (10E-6/°C): 100 Power Rating (W): 0.125 Max. Voltage (V): 200 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +155	
RLR07 (HR 4)	ESA/SCC 4001/006	Range (Ω): 10 - 1M Tol. (± %) : 2 TC (10E-6/°C): 100 Power Rating (W): 0.25 Max. Voltage (V): 250 Size (max mm): DIA 2.49 x 7.14 Operating temperature range (°C): -55 to +155	
RLR20 (HR 5)	ESA/SCC 4001/007	Range (Ω): 10 - 1M Tol. (± %) : 2 TC (10E-6/°C): 100 Power Rating (W): 0.5 Max. Voltage (V): 350 Size (max mm): DIA 4.09 x 10.57 Operating temperature range (°C): -55 to +155	
RNC50	ESA/SCC 4001/009	Range (Ω): 100 - 100k Tol. (± %) : 1 TC (10E-6/°C): 50 Power Rating (W): 0.05 Max. Voltage (V): 200 Size (max mm): DIA 2.03 x 4.32 Operating temperature range (°C): -55 to +175	
RNC55	ESA/SCC 4001/001	Range (Ω): 10 - 2M Tol. (± %) : 1 TC (10E-6/°C): 25 Power Rating (W): 0.1 Max. Voltage (V): 200 Size (max mm): DIA 3.56 x 7.14 Operating temperature range (°C): -55 to +175	
MG680	GSFC S-311-P-683	High Voltage Range (Ω): 600 - 20M Tol. (± %) : .5 TC (10E-6/°C): 140 Power Rating (W): 0.800 Max. Voltage (V): 2000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	CADUR

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
MG710	GSFC S-311-P-683	High Voltage Range (Ω): 800 - 50M Tol. (± %) : .5 TC (10E-6/°C): 140 Power Rating (W): 1 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	CADUR
MG716	GSFC S-311-P-683	High Voltage Range (Ω): 600 - 75M Tol. (± %) : .5 TC (10E-6/°C): 140 Power Rating (W): 1.5 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	CADUR
MG721	GSFC S-311-P-683	High Voltage Range (Ω): 200 - 100M Tol. (± %) : .5 TC (10E-6/°C): 140 Power Rating (W): 2 Max. Voltage (V): 4000 Size (max mm): DIA 1.80 x 4.30 Operating temperature range (°C): -55 to +125	CADUR

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RM1206	MIL-R-55342/7	Range (Ω): 5.6 - 5.6M Power Rating (mW): 250 Temp. Coeff. (±10E-6/°C) : 50 Operating temperature range (°C) : -55 to +70 (+150 at 0 watt) Tol. (± %): 2 Voltage Rating (V): 100 Terminations : G, W Size (max mm) : 3.60 x 1.85 x 1.00	SOAUS
RM1505	MIL-R-55342/4	Range (Ω): 10 - 4.7M Power Rating (mW): 150 Temp. Coeff. (±10E-6/°C) : 50 Operating temperature range (°C) : -55 to +70 (+150 at 0 watt) Tol. (± %): 2 Voltage Rating (V): 40 Terminations : G, W Size (max mm) : 4.45 x 1.27 x 1.02	SOAUS
RM2010	MIL-R-55342/8	Range (Ω): 5.6 - 15M Power Rating (mW): 800 Temp. Coeff. (±10E-6/°C) : 50 Operating temperature range (°C) : -55 to +70 (+150 at 0 watt) Tol. (± %): 2 Voltage Rating (V): 150 Terminations : G, W Size (max mm) : 5.60 x 2.75 x 0.99	SOAUS

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SIL	ESA/SCC 4005/003	Resistance Range (Ω): 47 - 1M Tol. (± %): 2 Temp. Coeff. (± 10E-6/°C): 150 Variants 01 to 06 of 4005/003 Power rating (mW): 180 for individual resistors 100 for paralleled resistors Size (max mm): 6 pins 15.20 x 5.08 x 2.50 Spacing 2.54 mm 8 pins 20.30 x 5.08 x 2.50 Spacing 2.54 mm 10 pins 25.40 x 5.08 x 2.50 Spacing 2.54 mm	SFRFN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SINGLE LAYER	ESA/SCC 4009/001	Single layer heaters Maximum Ohmic density: 20Ω/cm² Resistance Range: 1Ω to 5000Ω Operating Temperature Range (°C): -65 to + 200	

PAGE INTENTIONALLY LEFT BLANK

Section 11 Component Type: THERMISTORS

There are no preferred sources of THERMISTORS

PAGE INTENTIONALLY LEFT BLANK

Section 12 Component Type: TRANSISTORS

Sub-Section

12-01	LOW POWER, NPN (<2WATTS)
12-02	LOW POWER, PNP (<2WATTS)
12-03	HIGH POWER, NPN (>2WATTS)
12-04	HIGH POWER, PNP (>2WATTS)
12-05	FET N CHANNEL
12-08	MULTIPLE
12-09	SWITCHING
12-10	RF/MICROWAVE NPN LOW POWER / LOW NOISE
12-16	MICROWAVE LOW NOISE (GaAs)
12-17	CHOPPER

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N2219A	ESA/SCC 5201/003	hFE min/max: 100/300 @ IC = 150 mA BV CBO (V): 75 BV CEO (V): 50 IC (mA): 800 Package: TO-39	
2N2222A	ESA/SCC 5201/002	hFE min/max: 100/300 @ IC = 150 mA BV CBO (V): 75 BV CEO (V): 40 IC (mA): 500 Package: TO-18	
2N2369A	ESA/SCC 5201/006	hFE min/max: 40/120 @ IC = 10 mA BV CBO (V): 40 BV CEO (V): 15 IC (mA): 500 Package: TO-18	
2N2484	ESA/SCC 5201/001	hFE min/max: 250/650 @ IC = 1 mA BV CBO (V): 60 BV CEO (V): 60 IC (mA): 50 Package: TO-18	
2N3019	MIL-S-19500/391	hFE min/max: 100/300 @ IC = 150 mA BV CBO (V): 140 BV CEO (V): 80 IC (A): 1 Package: TO-205	RAEUM
2N3419, 2N3420	MIL-S-19500/393	hFE min/max: 20/60 @ IC = 1 A (2N3419) hFE min/max: 40/120 @ IC = 1 A (2N3420) BV CBO (V): 125 BV CEO (V): 80 IC (A): 3 (2N3419) BV CBO (V): 85 BV CEO (v): 60 IC (A): 3 (2N3420) Package: TO-205	PPCUR
2N3501L	MIL-S-19500/366	hFE min/max: 100/300 @ IC = 150 mA BV CBO (V): 150 BV CEO (V): 150 IC (A): 0.3 Package: TO-205	RAYUM

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N3700	ESA/SCC 5201/004	hFE min/max: 100/300 @ IC = 150 mA PD (mW): 500 BV CBO (V): 140 BV CEO (V): 80 IC (A): 1 Package: TO-18	
2N5238	MIL-S-19500/394	hFE min/max: 40/300 @ IC = 5 A PD (W): 1.5 BV CBO (V): 200 BV CEO (V): 170 IC (A): 10 Package: TO-205	PPCUR
2N5666, 2N5667	MIL-S-19500/455	hFE min/max: 40/120 @ IC = 1 A (2N5666) hFE min/max: 25/75 @ IC = 1 A (2N5667) PD (W): 1.2 BV CBO (V): 250 BV CEO (V): 200 IC (A): 5 (2N5666) BV CBO (V): 400 BV CEO (v): 300 IC (A): 5 (2N5667) Package: TO-205	PPCUR

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N2060	MIL-S-19500/270	hFE min/max: 40/300 @ IC = -1 mA PD (mW): 600 BV CBO (V): -100 BV CEO (V): -60 IC (mA): -500 Package: TO-78	RAYUM
2N2605	MIL-S-19500/354	hFE min/max: 100/300 @ IC = -10 mA PD (mW): 400 BV CBO (V): -70 BV CEO (V): -60 IC (mA): -30 Package: TO-206	RAYUM
2N2894	ESA/SCC 5202/004	hFE min/max: 40/150 @ IC = -30 mA PD (mW): 360 BV CBO (V): -12 BV CEO (V): -12 IC (mA): -200 Package: TO-18	
2N2905A	ESA/SCC 5202/002	hFE min/max: 100/300 @ IC = -150 mA PD (mW): 600 BV CBO (V): -60 BV CEO (V): -60 IC (mA): -600 Package: TO-39	
2N2907A	ESA/SCC 5202/001	hFE min/max: 100/300 @ IC = -150 mA PD (mW): 400 BV CBO (V): -60 BV CEO (V): -60 IC (mA): -600 Package: TO-18	
2N3637	MIL-S-19500/357	hFE min/max: 100/300 @ IC = -50 mA PD (W): 1 BV CBO (V): -175 BV CEO (V): -175 IC (A): -1 Package: TO-205	RAYUM
2N3764	MIL-S-19500/396	hFE min/max: 40/140 @ IC = -0.5 mA PD (W): 1 BV CBO (V): -60 BV CEO (V): -60 IC (A): -1.5 Package: TO-205	RAYUM

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N3867S, 2N3868S	MIL-S-19500/350	hFE min/max: 40/120 @ IC = -1.5 A (2N3867S) hFE min/max: 30/150 @ IC = -1.5 A (2N3868S) PD (W): 1 BV CBO (V): -40 BV CEO (V): -40 IC (A): -3 (2N3867S) BV CBO (V): -60 BV CEO (v): -60 IC (A): -3 (2N3868S) Package: TO-205	PPCUR

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N3440	ESA/SCC 5203/011	hFE min/max: 40/160 @ IC = 20 mA PD (W): 5 BV CBO (V): 300 BV CEO (V): 250 IC (A): 1 Package: TO-39	
2N3997	MIL-S-19500/374	hFE min/max: 80/240 @ IC = 1 A PD (W): 30 BV CBO (V): 100 BV CEO (V): 80 IC (A): 5 Package: TO-111	PPCUR
2N5038	MIL-S-19500/439	hFE min/max: 50/200 @ IC = 2 A PD (W): 80 BV CBO (V): 150 BV CEO (V): 90 IC (A): 20 Package: TO-204	PPCUR
2N5154	ESA/SCC 5203/010	hFE min/max: 70/200 @ IC = 2.5 mA PD (W): 8.75 BV CBO (V): 100 BV CEO (V): 80 IC (A): 10 Package: TO-39	
2N5664, 2N5665	MIL-S-19500/455	hFE min/max: 40/120 @ IC = 1 A (2N5664) hFE min/max: 25/75 @ IC = 1 A (2N5665) PD (W): 30 BV CBO (V): 250 BV CEO (V): 200 IC (A): 5 (2N5664) BV CBO (V): 400 BV CEO (v): 300 IC (A): 5 (2N5665) Package: TO-213	PPCUR
2N5672	ESA/SCC 5203/004	hFE min/max: 20/100 @ IC = 15 A PD (W): 140 BV CBO (V): 150 BV CEO (V): 120 IC (A): 30 Package: TO-3	
BUX77	ESA/SCC 5203/016	hFE min/max: 50/200 @ IC = 2 A PD (W): 40 BV CBO (V): 100 BV CEO (V): 80 IC (A): 5 Package: TO-66	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2SC4832	NASDA QTS 19500/1044	hFE min: 10 @ IC = 6 A PD (W): 140 BV CBO (V): 500 BV CEO (V): 400 IC (A): 15 Package: TO-3	FECJN

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N3741	MIL-S-19500/441	hFE min/max: 30/120 @ IC = -0.25 A PD (W): 14 BV CBO (V): -80 BV CEO (V): -80 IC (A): 4 Package: TO-213	PPCUR
2N5153	ESA/SCC 5204/002	hFE min/max: 70/200 @ IC = -2.5 mA PD (W): 10 BV CBO (V): -100 BV CEO (V): -80 IC (A): 10 Package: TO-39	
BUX78	ESA/SCC 5204/006	hFE min/max: 50/200 @ IC = -2 A PD (W): 40 BV CBO (V): -100 BV CEO (V): -80 IC (A): 5 Package: TO-66	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2SK589	NASDA QTS 19500/1028	IDSS min/max (mA): 40/110 BV GDO (V): -30 BV GSO (V): -30 IG (mA): 10 VGSoff min/max (V) : -1.5/-7.0 Switching Package: TO-18 PD (mW): 360	NECJK
2SK1383	NASDA QTS 19500/1043	IDSS (μA): 40/110 IGSS (μA): 100 PD (mW): 800 BV GDO (V): 200 BV GSO (V): 200 ID (A): 3 Package: TO-5 Switching	TOKJM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N2920A (NPN)	ESA/SCC 5207/002	hFE min/max: 150/600 @ IC = 10 μA PD (mW): 500 BV CBO (V): 60 BV CEO (V): 60 IC (mA): 30 Package: TO-77	
2N3810 (PNP)	ESA/SCC 5207/005	hFE min/max: 150/450 @ IC = -1 mA PD (mW): 600 (both) BV CBO (V): -60 BV CEO (V): -60 IC (mA): 50 Package: TO-78	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2SB1350 (PNP)	NASDA QTS 19500/1035	hFE min: 50 @ IC = -0.1 A BV CBO (V): -450 BV CEO (V): -400 IC (A): -1 Package: TO-5	NECJK
2SB4307 (NPN)	NASDA QTS 19500/1034	hFE min/max: 40/100 @ IC = 0.1 A BV CBO (V): 450 BV CEO (V): 400 IC (A): 1 Package: TO-5	NECJK

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
BFY Series	ESA/SCC 5611/006	BV CBO (V): 10, 20 BV CEO (V): 8, 12 hFE min/max: 30/175 @ IC = 0.25 - 30 mA PT (W): 1.0 Nf max: 2.9, 3.2 @ 2 GHz MAG/MSG min: 12 - 13.5 dB @ 2 GHz fT min: 7 GHz Pout (mW): 45 Package: Micro-X	SIEGM
2N918	MIL-S-19500/301	BV CBO (V): 30 hFE min/max: 20/200 @ IC = 3 mA PT (mW): 300 Nf: 6 dB @ 60 MHz GPE = 15 dB min @ 200 MHz Package: TO-206	RAYUM
2N3866A	MIL-S-19500/398	BV CBO (V): 60 hFE min/max: 25/200 @ IC = 50 mA PT (W): 1.0 Pout min/max (W): 1.0/2.0 @ 400 MHz Package: TO-205	RAYUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
CFY 66	ESA/SCC 5613/002	HEMT (recommended for applications in L, S and C bands) NF ≤ 0.8 dB Ga ≥ 10 dB @ 12 GHz Vds = 3.5V Vdg = 4.5V Id = 60mA Package : Micro-X	
CFY 67	ESA/SCC 5613/004	Pseudomorphic HEMT (recommended for applications in X and Ku bands) NF ≤ 0.8 dB Ga ≥ 11 dB @ 12 GHz Vds = 3.5V Vdg = 4.5V Id = 60mA Package : Micro-X	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N2432A (NPN)	MIL-S-19500/313	hFE min/max: 80/400 @ IC = 1 mA PD (mW): 300 BV CBO (V): 45 BV CEO (V): 45 IC (mA): 100 Package: TO-206	NESUL

PAGE INTENTIONALLY LEFT BLANK

Section 13 Component Type: WIRES AND CABLES

Sub-Section

13-01	LOW FREQUENCY
13-02	COAXIAL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
3901001**B	ESA/SCC 3901/001	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -100 to +200C Insulation Type: Polyimide/Kapton, Light weight Wire size AWG 26 to 12, shielded and jacketed wires only, up to 3 cores	
3901002**B	ESA/SCC 3901/002	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -100 to +200C Insulation Type: Polyimide/Kapton, medium weight Wire size AWG 28 to 18, single finished wires unjacketed and unshielded	
MTV-BTV	ESA/SCC 3901/013	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -100 to +200C Insulation Type: Extruded PTFE for flexibility Wire size AWG 28 to 18, shielded and unshielded, up to 5 cores	
Silver plated copper 600V	ESA/SCC 3901/012	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -100 to +200C Insulation Type: Extruded cross-linked fluoropolymer Wire size ISO 001, 002, 004, 006, 010, 012, 020, 030, shielded and unshielded, up to 4 cores	
SPP	ESA/SCC 3901/017	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -200 to +200C Insulation Type: Expanded PTFE Tape Wire size AWG 4 and 8	
SPM	ESA/SCC 3901/018	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -200 to +200C Insulation Type: Polyimide/Fluorothermoplast Wire size AWG 30 to 12, shielded and unshielded, up to 7 cores	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SPL	ESA/SCC 3901/019	Voltage Rating, maximum (Vrms): 600 Temperature Range (°C): -200 to +200C Insulation Type: Polyimide/Expanded PTFE Wire size AWG 28 to 12, shielded and unshielded, up to 7 cores	

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
50CIS	ESA/SCC 3902/001	Miniature, 50 Ohms, PTFE Dielectric, Polyimide Jacket Maximum Voltage: 900 Vrms Operating Temperature Range (°C): -100 to + 200	

PAGE INTENTIONALLY LEFT BLANK

Section 14 Component Type: TRANSFORMERS

There are no preferred sources of TRANSFORMERS

PAGE INTENTIONALLY LEFT BLANK

Section 16 Component Type: SWITCHES

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
12100 AND 11100	ESA/SCC 3701/001	Contact Rating: 4A, 28Vdc, Resistive 2-, 3- and 4-pole versions Operating Temperature Range (°C): -40 to + 125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
T3	ESA/SCC 3701/003	Contact Rating: 4A, 28 Vdc, Resistive SPDT Operating Temperature Range (°C): -55 to + 125	

PAGE INTENTIONALLY LEFT BLANK

Section 18 Component Type: OPTO-ELECTRONICS

Sub-Section

18-01 OPTOCOUPLER

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
3C91	ESA/SCC 5401/001	BV CEO (V): 50 @ IC = 10 mA V CE sat Transistor (V): 0.4 @ if = 50 mA and IC = 2 mA VF Diode (V): 1.3 @ IF = 2 mA PD Opto-emitter (mW): 80 PD Opto-detector (mW): 200 Operating temperature range (°C): -55 to +125	

PAGE INTENTIONALLY LEFT BLANK

Section 19 Component Type: THYRISTORS

There are no preferred sources of THYRISTORS

PAGE INTENTIONALLY LEFT BLANK

Section 20 Component Type: THERMOSTATS

Sub-Section	
20-01	ALL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SPDT Opening contact	ESA/SCC 3702/001	Contact Rating: 4A, 30 Vdc, Resistive Difference between contact opening temp. and closing temp. (°C max): For switching temp <-35°C 10 For -35 < switching temp > +79°C 5 or 10 For switching temp > +80°C 15 Package with flange Operating Temperature Range (°C): -50 to + 150	COMFP

PAGE INTENTIONALLY LEFT BLANK

Section 23 Component Type: LAMPS

There are no preferred sources of LAMPS

PAGE INTENTIONALLY LEFT BLANK

Section 27 Component Type: FIBRE OPTIC COMPONENTS

There are no preferred sources of FIBRE OPTIC COMPONENTS

PAGE INTENTIONALLY LEFT BLANK

Section 30 Component Type: RF PASSIVE COMPONENTS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RF Coaxial Couplers	ESA/SCC 3404/005	Frequency Range (GHz): 1 - 22 Coupling factor (dB): 4 - 30 RF Power P (W): 50 Operating Temperature Range (°C): -55 to + 125	

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RF Coaxial Attenuators	ESA/SCC 3403/005	Frequency Range (GHz): 0 - 22 Attenuation value range (dB): 0 - 20 Operating Temperature Range (°C): -55 + 125 °C	
RF Coaxial Loads	ESA/SCC 3403/006	Frequency Range (GHz): 0 - 22 Rated P (in) (W): 1 Impedance (Ω): 50 VSWR Max.: Type 0<f(GHz)≤4 4<f(GHz)≤12.4 12.4<f(GHz)≤18.4 18.4<f(GHz)≤22 1 1.05 1.10 1.15 1.20 2 1.05 1.15 1.20 1.25 Operating Temperature Range (°C): -55 to + 125	

PAGE INTENTIONALLY LEFT BLANK

PART II

PAGE INTENTIONALLY LEFT BLANK

Section	Component Types
01	CAPACITORS
02	CONNECTORS
04	DIODES
05	FILTERS
06	FUSES
07	INDUCTORS
08	MICROCIRCUITS
09	RELAYS
10	RESISTORS
11	THERMISTORS
12	TRANSISTORS
16	SWITCHES
18	OPTO-ELECTRONICS
30	RF PASSIVE COMPONENTS

PAGE INTENTIONALLY LEFT BLANK

Section 01 Component Type: CAPACITORS

Sub-Section	
01-01	CERAMIC
01-02	CERAMIC CHIP
01-03	TANTALUM SOLID
01-05	PLASTIC METALLIZED
01-11	SEMICONDUCTOR

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
TCK18x		High Voltage, Molded, Type I Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) 180 — 10 to 15000 — 5 — 200 to 5000 — 8.5 x 8.5 x 5 181 — 18 to 22000 — 5 — 200 to 5000 — 11.0 x 9.5 x 8 182 — 33 to 39000 — 5 — 200 to 5000 — 13.5 x 12.5 x 8 183 — 68 to 68000 — 5 — 200 to 5000 — 15.5 x 14.5 x 8 184 — 120 to 82000 — 5 — 200 to 5000 — 18.5 x 16.5 x 8 185 — 180 to 180000 — 5 — 200 to 5000 — 20.5 x 19.5 x 8 Operating Temperature Range (°C): -55 to +125	EFDFL
TCK28x		High Voltage, Molded, Type II Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) 280 — 150 to 33000 — 10 — 200 to 5000 — 8.5 x 8.5 x 5 281 — 150 to 560000 — 10 — 200 to 5000 — 11.0 x 9.5 x 8 282 — 330 to 1000000 — 10 — 200 to 5000 — 13.5 x 12.5 x 8 283 — 680 to 1800000 — 10 — 200 to 5000 — 15.5 x 14.5 x 8 284 — 1500 to 2700000 — 10 — 200 to 5000 — 18.5 x 16.5 x 8 Operating Temperature Range (°C): -55 to +125	EFDFL
TCN83E	ESA/SCC 3001/027	Molded, High Capacitance, Type II Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) TCN83E — 1.0 to 100 — 10 — 50 to 400 — 22.5 X 30.0 X 19.5 Operating Temperature Range (°C): -55 to +125	EFDFL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
C18x		High Voltage, Type I Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) 180 10 to 15000 5 200 to 5000 6.3 x 5.5 x 3.8 181 18 to 22000 5 200 to 5000 7.7 x 7.0 x 6 182 33 to 39000 5 200 to 5000 9.2 x 9.2 x 6 183 68 to 56000 5 200 to 5000 11.2 x 11.2 x 6 184 120 to 82000 5 200 to 5000 15.1 x 11.2 x 6 185 180 to 180000 5 200 to 5000 17.6 x 16.7 x 6 Ag Pd Terminations Operating Temperature Range (°C): -55 to +125	EFDFL
C28x		High Voltage, Type II Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) 280 150 to 33000 10 200 to 5000 6.3 x 5.5 x 3.8 281 150 to 560000 10 200 to 5000 7.7 x 7.7 x 6 Ag Pd Terminations Operating Temperature Range (°C): -55 to +125	EFDFL
CNC8xRE	ESA/SCC 3001/028	Leaded Chip, High Capacitance, Type II Series / Cap. Range (pF) / Tol. (%) / Rated Volt. (V) / Size (max mm) CNC82 0.22 to 22 10 50 to 400 15.5 x 12.0 x 11.5 CNC83 1.0 to 100 10 50 to 400 18.5 x 26.0 x 17.0 Operating Temperature Range (°C): -55 to +125	EFDFL

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ATC 111 (TYPE I & II)		Monolayer, Millimeter Wave Cap. Range (pF) / Tol. (±) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) TYPE I 0.1 to 4700 / 0.5pF / 100 / Various TYPE II 1 to 4700 / 10% / 100 / Various Au/Pt Terminations Size (max mm) : 0.46 x 0.46 x 0.10 to 2.60 x 2.60 x 0.30 Operating Temperature Range (°C) : -55 to +125	ATCUH

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1505 Chip Style 195D	ESA/SCC 3011/002	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 0.47 10 40 0.68 10 25 1.5 10 16 Sn/Pb Pad Terminations Size (max mm) : 4.6 x 2.1 x 2.1 Operating Temperature Range (°C) : -55 to +125	SPRFT
1510 Chip Style 195D	ESA/SCC 3011/004	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 1.0 10 40 1.5 10 25 3.3 10 16 Sn/Pb Pad Terminations Size (max mm) : 4.6 x 3.3 x 2.1 Operating Temperature Range (°C) : -55 to +125	SPRFT
2010 Chip Style 195D	ESA/SCC 3011/005	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 1.5 10 40 2.2 10 25 4.7 10 16 Sn/Pb Pad Terminations Size (max mm) : 5.9 x 3.3 x 2.1 Operating Temperature Range (°C) : -55 to +125	SPRFT
2213 Chip Style 195D	ESA/SCC 3011/006	Capacitance Range (µF) Tol. (± %) Rated Volt. (V) 3.3 10 40 4.7 10 25 10.0 10 16 Sn/Pb Pad Termination s Size (max mm) : 6.4 x 4.2 x 2.6 Operating Temperature Range (°C) : -55 to +125	SPRFT

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2815 Chip Style 195D	ESA/SCC 3011/008	Capacitance Range (μF) Tol. (± %) Rated Volt. (V) 10.0 and 6.8 10 40 15.0 10 25 33.0 10 16 Sn/Pb Pad Terminations Size (max mm) : 8.0 x 4.6 x 3.6 Operating Temperature Range (°C) : -55 to +125	SPRFT
CTS21E	ESA/SCC 3002/003	Capacitance range (μF) Tol. (± %) Rated Volt. (V) 22, 27 10 50 33, 39, 47 10 35 150,180 10 16 Size (max mm) : 20.9 x Dia 7.75 Capacitance range (μF) Tol. (± %) Rated Volt. (V) 33, 39, 47, 56, 68 10 50 56, 68, 82, 100, 120 10 35 270, 330 10 16 Size (max mm) : 23.4 x Dia 9.3 Operating temperature range (°C) : -55 to +125	FIRFN

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HT86		Reconstituted mica film, Resin Impregnated, Metal Plates Cap. Range (nF) / Tol. (± %) / Rated Volt. (V) 22 to 1500 / 10 / 2500 6.8 to 470 / 10 / 5000 1.0 to 100 / 10 / 10000 1.5 to 33 / 10 / 15000 Size (max mm) : min 37.0 x 12.0 x 6.0 to max 107.0 x 52.0 x 16.0 Depending on Voltage/Capacitance Value Operating Temperature Range (°C) : -55 to +125	EFDFL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SC9001		MIS Capacitor, Beam Lead Cap. Range (pF) / Tol. (± %) / Rated Volt. (V) / Temp. Coeff. (±10E-6/°C) 0.5 to 4.7 / N/A / 50 / 50 5.6 to 100 / 20 / 50 / 50 Size (max mm) : 0.97 x 0.33 x 0.10 Operating Temperature Range (°C) : -55 to +175	ALPUW

PAGE INTENTIONALLY LEFT BLANK

Section 02 Component Type: CONNECTORS

Sub-Section

02-01	CIRCULAR
02-05	RF COAXIAL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
EGG1B - FGG1B		Push-pull Coupling, Removable Crimp Contacts Range: 2, 3, 4, 5 Contacts Operating Temperature Range (°C): -55 to +250 Number of contacts Rating (A) 2 15 3 12 4 10 5 9	LEMHE

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SBMA	ESA/SCC 3402/011	Blind-mate Slide-on Connectors Frequency Range 0-28 GHz 3402/011 Male contact 3402/012 Female contact Gold-plated nickel underplate or amagnetic Stainless Steel Operating temperature range (°C): -65 to +105 Types covered by similarity: Hermetically Sealed	RADFV

PAGE INTENTIONALLY LEFT BLANK

Section 04 Component Type: DIODES

Sub-Section

04-01	SWITCHING
04-04	VOLTAGE REFERENCE / ZENER
04-05	RF/MICROWAVE SCHOTTKY (Si)
04-08	TRANSIENT SUPPRESSION
04-10	HIGH VOLTAGE RECTIFIER
04-16	RF/MICROWAVE PIN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N3595-1	ESA/SCC 5101/006	DC Forward Voltage (max V): 0.88 @ DC Forward Current (pk A): 0.05 DC Reverse Current (max nA): 1.0 @ DC Reverse Voltage (V): 125 Reverse Recovery Time (max μs) : 3.0 Package: DO-35	MSCUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N827-1	MIL-S-19500/159	Nominal Zener Volt. (V): 6.2 @ Nom. Iz (mA): 7.5 Regulation Voltage (mV): 9 Power (W): 0.5 Zener Impedance (Ohm): 15 Package: DO7	MSCUS
1N829-1	MIL-S-19500/159	Nominal Zener Volt. (V): 6.2 @ Nom. Iz (mA): 7.5 Regulation Voltage (mV): 5 Power (W): 0.5 Zener Impedance (Ohm): 15 Package: DO7	MSCUS
1N4569A-1	MIL-S-19500/452	Nominal Zener Volt. (V): 6.4 @ Nom. Iz (mA): 0.5 Regulation Voltage (mV): 50 Power (W): 0.475 Zener Impedance (Ohm): 200 Package: DO7	MSCUS
1N4574A-1	MIL-S-19500/452	Nominal Zener Volt. (V): 6.4 @ Nom. Iz (mA): 0.5 Regulation Voltage (mV): 50 Power (W): 0.475 Zener Impedance (Ohm): 100 Package: DO7	MSCUS

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N5711	ESA/SCC 5106/010	DC Reverse Volt. (V): 50 Total Capacitance CT (pF): 2.0 Effective Carrier Life Time (ps): 100 @ If = 5.0 mA Package : DO35	HPAUS
1N5712	ESA/SCC 5106/002	DC Reverse Volt. (V): 16 Total Capacitance CT (pF): 1.2 Effective Carrier Life Time (ps): 100 Package : DO35	HPAUS

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
1N6119,A thru 1N6137,A	MIL-S-19500/516	Nominal Zener Volt. (V): 34.2-190 @ Nom. Iz (mA): 30-5.0 Regulation Voltage (V): - Power (W): 2.0 Package: E (MSCUA Outline) Peak Power (W): 500 for 1 ms	MSCUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
F60A	ESA/SCC 5101/012	DC Forward Voltage (max V): 8 @ DC Forward Current (mA): 50 DC Reverse Current (max μA): 0.25 @ DC Reverse Voltage (V): 6000 Reverse Recovery Time (ns): 300 Package: Axial Leads	SEMUN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
BXY44	ESA/SCC 5104/006	Rev. Volt. (V): -200 Tot. Cap. (pF): 0.24, 0.31 RF Power (W): 0.60 Minor. Carrier Life Time @ If=10mA (ns): 100 Fast Switching Package (max mm): DIA 2.20 x 1.45 Variant 01 DIA 1.45 x 1.35 Variant 02 DIA 1.45 x 2.95 Variant 03 (T1 Package)	SIEGM

PAGE INTENTIONALLY LEFT BLANK

Section 05 Component Type: FILTERS

Sub-Section

05-01 FEEDTHROUGH

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SFC 030		C Filter Capacitance Range (pF) / Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 470 to 22000 / 50 / 10 / 75 470 to 6800 / 100 / 10 / 60 470 to 2700 / 200 / 10 / 75 Operating Temperature Range (°C): -55 to + 125 Size (max mm): DIA 4.10	EFDFL
SFP 60		PI Filter Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 50 / 0.025 / 70 @ 500 MHz 100 / 10 / 75 @ 100 MHz 200 / 10 / 70 350 / 10 / 70 500 / 10 / 70 Operating Temperature Range (°C): -55 to + 125 Size (max mm) : DIA 7.10	EFDFL
SFP 100		PI Filter Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 100MHz 100 / 0.1 / 12 100 / 10 / 70 300 / 10 / 70 Operating Temperature Range (°C): -55 to + 125 Size (max mm) : DIA 9.90 x 18.60	EFDFL

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SFL 100		L Filter Rated Voltage (V) / Rated DC Current (A) / Insertion Loss (dB) @ 1GHz 50 / 10 / 65 50 / 15 / 70 80 / 15 / 70 100 / 15 / 60 200 / 15 / 60 Operating Temperature Range (°C): -55 to + 125 Size (max mm) : DIA 9.90	EFDFL

Section 06 Component Type: FUSES

Sub-Section

06-01	ALL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
FM12	MIL-F-23419/12	Solid State Max Voltage (V): 72 Current Rating (A): 0.125-7.5 Package (max mm): 7.12 x 6.9 x 3.7	MEPUS

PAGE INTENTIONALLY LEFT BLANK

Section 07 Component Type: INDUCTORS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ER1025-94/-20	MIL-C-39010/08	Phenolic Core Inductance Range (μH): 0.10 to 1.0 Tol. (%): 5, 10 Rated DC Current min/max (mA): 1350/385 Q min : 25/40 Min. Self-resonant Frequency (MHz): 680 to 230 Size (max mm): DIA 2.7 x 6.6	DELUA
ER1025-21/-54	MIL-C-39010/09	Iron Core Inductance Range (μH): 1.1 to 27.0 Tol. (%): 5, 10 Rated DC Current min/max (mA): 590/135 Q min : 25/50 Min. Self-resonant Frequency (MHz): 150 to 20 Size (max mm): DIA 2.7 x 6.6	DELUA
ER1025-55/-92	MIL-C-39010/10	Ferrite Core Inductance Range (μH): 30 to 1000 Tol. (%): 5, 10 Rated DC Current min/max (mA): 130/28 Q min : 45/30 Min. Self-resonant Frequency (MHz): 24 to 3.4 Size (max mm): DIA 2.7 x 6.6	DELUA
ER1840-00/-16	MIL-C-39010/04	Phenolic Core Inductance Range (μH): 0.15 to 2.7 Tol. (%): 5, 10 Rated DC Current min/max (mA): 2900/460 Q min : 55/30 Min. Self-resonant Frequency (MHz): 510 to 120 Size (max mm): DIA 5.0 x 11.4	DELUA
ER1840-17/-38	MIL-C-39010/05	Iron Core Inductance Range (μH): 3.0 to 27.0 Tol. (%): 5, 10 Rated DC Current min/max (mA): 945/205 Q min : 30/65 Min. Self-resonant Frequency (MHz): 70 to 22 Size (max mm): DIA 5.0 x 11.4	DELUA

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
10 000 series		Inductance Range (μH): 0.10 to 10 Rated DC Current min/max (mA): 470/87 Q min : 47/52 Min. Self-resonant Frequency (MHz): 700 to 33 Size (max mm): 2.66 x 2.80 x 2.54	MICFI
12 000 series		Inductance Range (μH): 12 to 100 Rated DC Current min/max (mA): 120/46 Q min : 42/56 Min. Self-resonant Frequency (MHz): 26 to 7 Size (max mm): 2.66 x 2.80 x 2.54	MICFI

PAGE INTENTIONALLY LEFT BLANK

Section 08 Component Type: MICROCIRCUITS

Sub-Section	
08-15	MICROPROCESSOR/MICROCONTROLLER/PERIPHERAL
08-22	MEMORY PROM
08-25	MEMORY SRAM
08-40	ASIC TECHNOLOGIES DIGITAL
08-50	LINEAR OPERATIONAL AMPLIFIER
08-51	LINEAR SAMPLE AND HOLD AMPLIFIER
08-52	LINEAR VOLTAGE REGULATOR/REFERENCE
08-53	LINEAR VOLTAGE COMPARATOR
08-54	LINEAR SWITCHING REGULATOR
08-55	LINEAR LINE DRIVER
08-56	LINEAR LINE RECEIVER
08-58	LINEAR MULTIPLIER
08-59	LINEAR SWITCHES
08-60	LINEAR MULTIPLEXERS/DEMULTIPLEXER
08-61	LINEAR ANALOG TO DIGITAL CONVERTER

Section 08 Component Type: MICROCIRCUITS

Sub-Section

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
80C31	ESA/SCC 9521/001	Microcontroller, 8-Bit, CMOS Package: DIL	MHSFN
80C86	SMD 84052	Microprocessor, 16-Bit Package: DIL	HARUP
82C37A	SMD 5962-90543	DMA Controller, Programmable Package: DIL	HARUP
82C52	SMD 85015	Controller Interface, Serial, 16 MHz (UART) Package: DIL	HARUP
82C54	SMD 84065	Interval Timer Programmable, Package: DIL	HARUP
82C55A	SMD 84066	Peripheral Interface Programmable, 5 MHz Package: DIL	HARUP
82C59A-5	SMD 5962-85016	Programmable Interruption Controller, Package: DIL	HARUP
82C82	SMD 84067	Bus Driver, Octal latch Package: DIL	HARUP
82C84A	SMD 84068	Clock Generator Driver, 25 MHz Package: DIL	HARUP
MA1916E		REED SOLOMON Convolution Encoder and Tester Package: DIL	GPSBL
MAS28151	ESA/SCC 9544/003	Programmable Communication Interface, CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
NMA31750		High Performance MIL-STD-1750 Microprocessor, Radiation Hardened CMOS/SOS Package: Quad Leaded Flat Pack	GPSBL
CMA31751		Memory Managment Unit, Bloc Protection Unit, Radiation Hardened CMOS/SOS Package: Quad Leaded Flat Pack	GPSBL

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HS-6617RH		PROM, Radiation Hardened CMOS, 2048 x 8 with 3-State Outputs, 120ns Access Time Package: DIL, Flat Pack	HARUP
R29791		PROM, Bipolar, 8192 x 8 with 3-State Outputs, 75 ns Access Time Package: DIL	RAYUM
R29793		PROM, Bipolar, 8192 x 8 with 3-State Outputs, Power Switched 75 ns Access Time Package: DIL	RAYUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HC6856	SMD 5962-92153	SRAM 32768 x 8, Radiation Hardened CMOS, Asynchronous, with 3-State Output 40 ns Access Time Package: DIL, Flat-Pack	HONUP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
MC Gate Array, Capability Approval		The MATRA MHS MC series is a high performance Gate Array family, using lum drawn features and manufactured in a radiation tolerant CMOS process. The sub-micron channel lengths allow operating speeds of up to 150MHz with extremely low power dissipation. The family consists of a total of 10 matrices as listed below.	MHSFN

Type	Total Gates	Usable Gates	Max. I/O	Total Pads
MCT08K	836	760	40	44
MCT2K	2040	1800	64	68
MCT5K	5040	4500	86	90
MCT8K	7992	7200	124	128
MCT10K	10000	9000	122	126
MCT12K	11780	10500	156	160
MCT22K	21952	15200	144	148
MCT29K	29000	20000	196	200
MCT35K	35040	24000	182	186
MCT50K	50512	35000	216	220

Key Parameters:

* Maximum Utilisation - 90% up to 12000 gates
  - 70% above 12000 gates
* High Speed Performance - 0.4 ns typical gate delay
  - 150 MHz typical toggle frequency
* Low Supply Current - 1μA/gate/MHz (operating)
  - 0.4μA/gate (stand-by)
* Excellent ESD and Latch-up Immunity

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD847		Operational Amplifier, High Speed, Low Power Package: DIL	ANDUC
AD9617		Operational Amplifier, High Precision, Low Distorsion, Wide Bandwidth Package: DIL	ANDUC
HA-2520	MIL-M-38510/122	Operational Amplifier, High Speed, Externally Compensated, High Slew Rate, Package: Metal Can, DIL	HARUP
HA-2620	MIL-M-38510/122	Operational Amplifier, High Speed, Uncompensated, Very Wide Band, Package: Metal Can, DIL	HARUP
OP16A		Operational Amplifier, Precision J-FET Input, Package: Metal Can, DIL	ANDUC
OP200		Operational Amplifier, Dual, Low Offset, Low Power Package: DIL	ANDUC
OP37A		Operational Amplifier, High Speed, Low Noise, Precision, Package: Metal Can, DIL	ANDUC
OP400		Operational Amplifier, Quad, Low Offset, Low Power Package: DIL	ANDUC
OP470		Operational Amplifier, Quad, Very Low Noise, Package: DIL	ANDUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SMP11A		Sample and Hold Amplifier Package: DIL	ANDUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD584S	MIL-M-38510/128	Voltage Reference, Precision Pin Programmable, Package: Metal Can	ANDUC
LM105	ESA/SCC 9102/002	Voltage Regulator, Adjustable, Positive Package: Metal Can, DIL, Flat Pack	NSCUC
UC1834		Linear Regulator, High Efficiency Package: DIL	UICUM
REF10		Voltage Reference, Precision, Linear Positive, 10 Volts, Adjustable Package: Metal Can	ANDUC
RH137		3 Terminal Adjustable Negative Regulator, Radiation Hardened Package: TO39	LTCUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RH119		Dual, High Speed Voltage Comparator, Radiation Hardened Package: DIL	LTCUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SG1524	MIL-M-38510/126	Regulating Pulse Width Modulator Package: DIL	LINUG
SG1526	MIL-M-38510/126	Regulating Pulse Width Modulator Package: DIL	LINUG
1825		Regulating Pulse Width Modulator, High Speed Package: LINUG: DIL, Flat Pack UICUM: DIL	LINUG UICUM
UC1846	MIL-M-38510/702	Current Mode, Pulse Width Modulator Controller Package: DIL	UICUM

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HS-26C31RH		Quad EIA RS422, Radiation Hardened CMOS, Differential Driver, with 3-State Output Package: DIL, Flat-Pack	HARUP
HS-26CT31RH		Quad EIA RS422, Radiation Hardened CMOS, Differential Driver, TTL Compatible Package: DIL, Flat-Pack	HARUP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HS-26C32RH		Quad EIA RS422, Radiation Hardened CMOS, Differential Receiver, with 3-State Output Package: DIL, Flat-Pack	HARUP
HS-26CT32RH		Quad EIA RS422, Radiation Hardened CMOS, Differential Receiver, TTL Compatible Package: DIL, Flat-Pack	HARUP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD534T	MIL-M-38510/139	Multiplier, 4-Quadrant, Internally Trimmed, Precision Package: Metal Can	ANDUC
AD834S		Multiplier, 4-Quadrant, 500 MHz Package: DIL	ANDUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HS-302RH		Dual, DPST, Radiation Hardened CMOS Package: DIL, Flat Pack	HARUP
HS-303RH		Dual, SPDT, Radiation Hardened CMOS Package: DIL, Flat Pack	HARUP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
HI-546		Multiplexer, 16-Channel, with Active Overvoltage Protection, Package: DIL	HARUP
HI-548		Multiplexer, 8-Channel, with Active Overvoltage Protection, Package: DIL	HARUP
HS-508ARH		Multiplexer, 8-Channel, Radiation Hardened CMOS, with Overvoltage Protection, Package: DIL, Flat Pack	HARUP
HS-1840RH		Multiplexer, 16-Channel, Radiation Hardened CMOS Package: DIL, Flat Pack	HARUP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD574AT	MIL-M-38510/140	A/D Converter, 12-Bit, High Speed, with Microprocessor Interface Package: DIL	ANDUC
AD674B	SMD 5962-91690	A/D Converter, 12-Bit, High Speed, with Microprocessor Interface Package: DIL	ANDUC
AD1671S	SMD 5962-93126	A/D Converter, 12-Bit, 1.25 MSPS Package: DIL	ANDUC
TS83048		A/D Converter, 8-Bit, Flash Package: DIL	TCSFE

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD565A		D/A Converter, 12-Bit, High Speed, with Internal Reference Package: DIL	ANDUC
AD767S	SMD 5962-89617	D/A Converter, 12-Bit, with Microprocessor Interface, Internal Reference and Output Amplifier Package: DIL	ANDUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
AD590M	SMD 5962-87571	Temperature Transducer, Two Terminals Package: Metal Can, Flat Pack	ANDUC
AMP-01A		Instrumentation Amplifier, Precision, Low Noise Package: DIL	ANDUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54AC05	Gate	SMD 5962-90590	Hex Inverter with Open Drain Output Package: DIL, Flat Pack	NSCUC
54AC139	Decoder/Demux	MIL-M-38510/758	Dual 2 To 4 Line Decoder/Demultiplexer, with Inverted Outputs Package: DIL, Flat Pack	NSCUC
54AC161	Counter	MIL-M-38510/763	Synchronous 4-Bit Binary Counter Package: DIL, Flat Pack	NSCUC
54AC163	Counter	MIL-M-38510/763	Synchronous 4-Bit Binary Counter Package: DIL, Flat Pack	NSCUC
54AC174	Flip-Flop	MIL-M-38510/753	Hex D-Type Edge-triggered Flip-Flop with Clear Package: DIL, Flat Pack	NSCUC
54AC191	Counter	MIL-M-38510/763	Synchronous 4-Bit Up/Down Binary Counter Package: DIL, Flat Pack	NSCUC
54AC377	Flip-Flop	MIL-M-38510/756	Octal D-Type Flip-Flop with Clock Enable Package: DIL, Flat Pack	NSCUC
54AC521	Comparator	SMD 5962-90985	8-Bit Identify Comparator with Enable Package: DIL, Flat Pack	NSCUC
54AC541	Buffer	MIL-M-38510/757	Octal Bus Buffer with 3-State Outputs Package: DIL, Flat Pack	NSCUC
54AC574	Flip-Flop	MIL-M-38510/756	Octal D-Type Flip-Flop with 3-State Outputs Package: DIL, Flat Pack	NSCUC
54ACT00	Gate	SMD 5962-87699	Quad 2-Input NAND Gate, with TTL Compatible Inputs Package: DIL, Flat Pack	NSCUC

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54ACT240 Buffer	SMD 5962-87759	Octal Bus Buffer with Inverted 3-State Outputs, TTL Compatible Inputs Package: DIL, Flat Pack	NSCUC
54ACT244 Buffer	SMD 5962-87760	Octal Buffer/Line Driver with 3-State Outputs, TTL Compatible Inputs Package: DIL, Flat Pack	NSCUC
54ACT245 Transceiver	SMD 5962-87653	Octal Bidirectional Transceiver with 3-State Outputs, TTL Compatible Inputs Package: DIL, Flat Pack	NSCUC
54ACT574 Flip-Flop	SMD 5962-89601	Octal D-Type Flip-Flop with 3-State Outputs, TTL Compatible Inputs Package: DIL, Flat Pack	NSCUC
54HSC00 Gate		Quadruple 2-Input Positive NAND Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC02 Gate		Quadruple 2-Input Positive NOR Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC04 Gate		Hex Inverters Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC08 Gate		Quadruple 2-Input Positive AND Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC32 Gate		Quadruple 2-Input Positive OR Radiation Hardened CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HSC86	Gate		Quadruple 2-Input EXCLUSIVE-OR Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC125	Buffer		Quadruple Bus Buffer with 3-State Outputs (Active Low Enable) Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC126	Buffer		Quadruple Bus Buffer with 3-State Outputs (Active High Enable) Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC241	Line Driver		Octal 3-State Driver Complementary Enable Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC244	Line Driver		Octal Bus Buffer with 3-State Outputs Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC540	Line Driver		Octal 3-State Driver/Buffer Inverting Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC541	Line Driver		Octal 3-State Driver/Buffer Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC245	Transceiver		Octal Bus Transceiver with 3-State Outputs Radiation Hardened CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HSC161	Counter		4-Bit Synchronous Binary Counter Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC163	Counter		Synchronous 4-Bit Counter Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC74	Flip-Flop		Dual D-Type Flip-Flops with Preset and Clear Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC109	Flip-Flop		Dual J-K Flip-Flop with Preset and Clear Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC273	Flip-Flop		Octal D Flip-Flop with Master Reset Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC374	Flip-Flop		Octal D-Type Edge-triggered Flip-Flop with 3-State Outputs Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC574	Flip-Flop		Octal D-Type Edge Triggered Flip-Flop Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC373	Latch		Octal D-Type Transparent Latch with 3-State Outputs Radiation Hardened CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HSC573	Latch		Octal Transparent Latch with 3-State Outputs Package: DIL	GPSBL
54HSC164	Shift Register		8-Bit Parallel Output Serial Shift Register Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC165	Shift Register		Parallel Load 8-Bit Shift Register Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC166	Shift Register		8-Bit Shift Register Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC283	Adder		4-Bit Binary Full Adders with Fast Carry Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC521	Comparator		8-Bit Magnitude Comparator Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC157	Selector/Mux		Quad 2-Line to 1-Line Data Selectors/Multiplexers Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC253	Selector/Mux		Dual 4-to-1 Data Selectors/Multiplexers Radiation Hardened CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE		SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
54HSC148	Encoder		8-Line to 3-Line Octal Priority Encoders Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC138	Decoder/Demux		1-of-8 Decoder/Demultiplexer Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC139	Decoder/Demux		Dual 2-to-4 Decoders/Multiplexers Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC154	Decoder/Demux		4-to-16 Line Decoders/Demultiplexers Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC238	Decoder/Demux		3-to-8 Decoder/Multiplexer Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC151	Selector/Demux		1-of-8 Data Selectors/Multiplexers Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HSC670	Miscellaneous		4 x 4 Register Files with 3-State Outputs Radiation Hardened CMOS/SOS Package: DIL	GPSBL
54HST630	EDAC		EDAC, 16-BIT Parallel Radiation Hardened CMOS/SOS Package: DIL	GPSBL

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
SP8690A		Divider, two Modulus ÷10/11, Low Power ECL, 200 MHz Package: DIL	GPSBS
SP8803		Divider, Fixed Modulus, ÷32, Low Power ECL, 3.3 GHz Package: DIL	GPSBS

PAGE INTENTIONALLY LEFT BLANK

Section 09 Component Type: RELAYS

Sub-Section

09-01	NON LATCHING
09-02	LATCHING

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
E	ESA/SCC 3601/012	Contact Rating: 1A at 28 Vdc Contact Configuration: 2PDT Package Type: 1/6 Crystal Can Coil Voltage: 26.5 and 12 Vdc Operating Temperature Range (°C): -65 to +125 Variants 02, 06, 11 of 3601/012	GEPFN

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
D	ESA/SCC 3602/019	Contact Rating: 1A at 28 Vdc Contact Configuration: 2PDT Package Type: 1/6 Crystal Can Coil Voltage: 26.5 and 12 Vdc Operating Temperature Range (°C): -65 to +125 Variants 02, 06, 11 of 3602/019	GEPFN
PHL50	ESA/SCC 3602/014	Contact Rating: 50A at 50 Vdc Contact Configuration: 1PDT Package (max mm): 47.8 x 34.6 x 26.2 Coil Voltage: 48, 28, 12 Vdc Auxiliary Contact Rating: 2A at 28 Vdc Operating Temperature Range (°C): -65 to +125 Variants 01, 04 of 3602/014	REDFS

PAGE INTENTIONALLY LEFT BLANK

Section 10 Component Type: RESISTORS

Sub-Section
10-09 CHIP

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RR0805		Range (Ω): 10 - 1.0M Power Rating (mW): 200 Temp. Coeff. (±10E-6/°C) : 100 Operating Temperature Range (°C) : -55 to +70 (+155 at 0 watt) Tol. (± %): 1, 2 Voltage Rating (V): 75 Terminations : Tinned Size (max mm) : 2.23 x 1.42 x 0.65	GEKFA
RR1010		Range (Ω): 10 - 1.0M Power Rating (mW): 500 Temp. Coeff. (±10E-6/°C) : 100 Operating Temperature Range (°C) : -55 to +70 (+155 at 0 watt) Tol. (± %): 1, 2 Voltage Rating (V): 100 Terminations : Tinned Size (max mm) : 2.74 x 2.74 x 0.65	GEKFA
RR1206		Range (Ω): 10 - 1.0M Power Rating (mW): 250 Temp. Coeff. (±10E-6/°C) : 100 Operating Temperature Range (°C) : -55 to +70 (+155 at 0 watt) Tol. (± %): 1, 2 Voltage Rating (V): 150 Terminations : Tinned Size (max mm) : 3.45 x 1.75 x 0.65	GEKFA
SMC3HR		Range (Ω): 10 - 511K Power Rating (mW): 250 Temp. Coeff. (±10E-6/°C) : 25 Operating Temperature Range (°C) : -55 to +70 (+155 at 0 watt) Tol. (± %): 0.5, 1 Voltage Rating (V): 250 Terminations : Electrolytic SnPb Size (max mm) : 3.30 x 1.75 x 1.75	SFRFN

PAGE INTENTIONALLY LEFT BLANK

Section 11 Component Type: THERMISTORS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
196- Series		Chip, Negative Temperature Coefficient Pd (mW): 1 Tolerance (± %): 10 Operating Temperature Range (°C): -40 to +125 Range (Ω @ 25°C): 10 - 200k Size (max mm): 1.71 x 1.71 x 1.02 Terminations: Au, Ag	FENUM
526- Series		Leaded, Disc Mounted, Negative Temperature Coefficient Pd (mW): 2 Tolerance (± %): 1 to 10 Operating Temperature Range (°C): -60 to +200 Range (Ω @ 25°C): 1k - 100k Package (max mm): 6.70 x 9.50 x 2.40 Various Wires Definitions (Type & AWG)	FENUM
NV06		Leaded, Non Insulated Disk, Negative Temperature Coefficient Pd (mW @ 25°C): 65 Tolerance (± %): 5, 10 Operating Temperature Range (°C): -40 to +125 Range (Ω @ 25°C): 15 - 12k Size (mm max): DIA 6.00 x 3.50	LCCFA
44900 Series	GSFC S-311-P-18	Leaded, Epoxy Encapsulated, Negative Temperature Coefficient Pd (mW): 1 Tolerance (± %): 0.4 to 10 Operating Temperature Range (°C): -55 to +90 Range (Ω @ 25°C): 2.2k, 3k, 5k, 10k, 30k Package (max mm): S Variant DIA 2.40, T Variant DIA 2.80 Various Wires Definitions (Type & AWG)	YSIUS

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
118MF		Platinum, Radial Leads Pd (mW): 100 @ +25°C Operating Temperature Range (°C): -260 to +400 Range (Ω @ 0°C): 100 - 2000 Package (max mm): Variant 1 3.94 x 3.94 x 1.40 Variant 2 3.94 x 11.43 x 1.40	ROSUB

PAGE INTENTIONALLY LEFT BLANK

Section 12 Component Type: TRANSISTORS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N2880	ESA/SCC 5203/025	hFE min/max: 40/120 @ IC = 1A PD (W): 30 BV CBO (V): 150 BV CEO (V): 100 IC (A): 5 Package: TO-257 Variants 09, 10	SEMBL

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS			MCODE
2N7224	MIL-S-19500/592	VDS (V): 100 RDS (Ohm): 0.070 Package: TO-254AA	IDS (A): 21	PD (W): 150 @ TC=25Deg	INRUE
2N7225	MIL-S-19500/592	VDS (V): 200 RDS (Ohm): 0.100 Package: TO-254AA	IDS (A): 17	PD (W): 150 @ TC=25Deg	INRUE
2N7227	MIL-S-19500/592	VDS (V): 400 RDS (Ohm): 0.315 Package: TO-254AA	IDS (A): 9	PD (W): 150 @ TC=25Deg	INRUE
2N7261	MIL-S-19500/601	VDS (V): 100 RDS (Ohm): 0.18 Package: TO-205AF	IDS (A): 8 Radiation Hardened	PD (W): 25 @ TC=25Deg	INRUE
2N7262	MIL-S-19500/601	VDS (V): 200 RDS (Ohm): 0.40 Package: TO-205AF	IDS (A): 5.5 Radiation Hardened	PD (W): 25 @ TC=25Deg	INRUE
2N7268	MIL-S-19500/603	VDS (V): 100 RDS (Ohm): 0.065 Package: TO-254AA	IDS (A): 34 Radiation Hardened	PD (W): 150 @ TC=25Deg	INRUE
2N7269	MIL-S-19500/603	VDS (V): 200 RDS (Ohm): 0.100 Package: TO-254AA	IDS (A): 26 Radiation Hardened	PD (W): 150 @ TC=25Deg	INRUE
IRFY140		VDS (V): 100 RDS (Ohm): 0.092 Package: TO-257AB	IDS (A): 18	PD (W): 60 @ TC=25Deg	INRUE

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
IRFY240		VDS (V): 200 IDS (A): 12 PD (W): 60 @ TC=25Deg RDS (Ohm): 0.19 Package: TO-257AB	INRUE
IRFY340		VDS (V): 400 IDS (A): 6.9 PD (W): 60 @ TC=25Deg RDS (Ohm): 0.55 Package: TO-257AB	INRUE

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
2N6849	MIL-S-19500/564	VDS (V): -100 IDS (A): -4.1 PD (W): 25 @ TC=25Deg RDS (Ohm): 0.030 Package: TO-205AF	INRUE
2N6851	ESA/SCC 5206/003	VDS (V): -200 IDS (A): -2.4 PD (W): 25 @ TC=25Deg RDS (Ohm): 0.080 Package: TO-205AF	INRUE
2N7236	MIL-S-19500/595	VDS (V): -100 IDS (A): -18 PD (W): 125 @ TC=25Deg RDS (Ohm): 0.20 Package: TO-254AA	INRUE
2N7237	MIL-S-19500/595	VDS (V): -200 IDS (A): -11 PD (W): 125 @ TC=25Deg RDS (Ohm): 0.51 Package: TO-254AA	INRUE
IRFY9130		VDS (V): -100 IDS (A): -9.3 PD (W): 45 @ TC=25Deg RDS (Ohm): 0.31 Package: TO-257AB	INRUE
IRFY9240		VDS (V): -200 IDS (A): -7.7 PD (W): 60 @ TC=25Deg RDS (Ohm): 0.50 Package: TO-257AB	INRUE

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
NE734		NF ≤ 3.5 dB Case -08, 4.0 dB Case -12 @ 0.5 GHz BV CBO (V): 30 BV CEO (V): 14 IC (A): 0.150 hFE min/max: 50/250 PD (W): 0.25 Package: -08, -12 (NEC Outline)	NECJK

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
NE333		NPN Medium Power BV CBO (V): 28 BV CEO (V): 14 IC (A): 0.200 hFE min/max: 40/200 Pout (dBm): 25 PD (W): 2 Package: -03, -53E (NEC Outline)	NECJK
NE416		NPN Medium Power BV CBO (V): 35 BV CEO (V): 18 IC (A): 0.100 hFE min/max: 45/200 Pout (dBm): - PD (W): 1.5 Package: -03, -12, -15 (NEC Outline)	NECJK

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS			MCODE
CLY29		VDS (V max): 14 Pin (dBm): - Package: MWP25	IDS (A): 0.6 Pout (dBm min): 29 Frequency range (GHz):	PD (W): 3.75 @ TC=25Deg PAE (%): 50 1 to 5	SIEGM
CLY32		VDS (V max): 14 Pin (dBm): 24 Package: MWP25	IDS (A): 1.2 Pout (dBm min): 32 Frequency range (GHz):	PD (W): 7.5 @ TC=25Deg PAE (%): 50 1 to 5	SIEGM
FLK012		VDS (V): 15 Pin (dBm): - Package: WF	IDS (A): 0.90 Pout (dBm): 19	PD (W): 1.15 @ TC=25Deg nadd (%): 23	FUJJK
CLY35		VDS (V max): 14 Pin (dBm): - Package: MWP35	IDS (A): 2.4 Pout (dBm min): 35 Frequency range (GHz):	PD (W): 15 @ TC=25Deg PAE (%): 50 1 to 5	SIEGM
FLK022		VDS (V): 15 Pin (dBm): - Package: WG	IDS (A): 0.150 Pout (dBm): 23	PD (W): 2.5 @ TC=25Deg nadd (%): 34	FUJJK
FLM2223L-20F		VDS (V): 15 Pin (dBm): - Package: IH	IDS (A): 12 Pout (dBm): 41.3	PD (W): 83.3 @ TC=25Deg nadd (%): 50	FUJJK
FLM3135-8F		VDS (V): 15 Pin (dBm): - Package: IF	IDS (A): 5.400 Pout (dBm): 39	PD (W): 42.8 @ TC=25Deg nadd (%): 38	FUJJK

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
NE673		MESFET NF ≤ 1.6 dB Ga ≥ 8.5 dB @ 12 GHz Vds = 5.0 V Vdg = -6 V Id = 120 mA Package : 83 (NEC Outline)	NECJK

PAGE INTENTIONALLY LEFT BLANK

Section 16 Component Type: SWITCHES

Sub-Section

16-03	RF-SWITCH
16-05	REED SWITCH

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
R565 443 6**		RF Input/Output: SMA Connectors Frequency Range (GHz): 1 to 18 Command and RF Contact Monitoring: Solder Terminals or DEM Connector Contact Configuration: 1PDT Coil Voltage: 28 and 12 Vdc Operating Temperature Range (°C): -40 to +85	RADFI
R566 443 6**		RF Input/Output: SMA Connectors Frequency Range (GHz): 1 to 18 Command and RF Contact Monitoring: Solder Terminals or DEM Connector Contact Configuration: 2PDT Coil Voltage: 28 and 12 Vdc Operating Temperature Range (°C): -40 to +85	RADFI

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
ILS100		Contact Rating: 0.4A at 100 Vdc Contact Configuration: 1PST Package Type: Glass capsule DIA 2.3 x 15 mm max Operate Ampere Turns: 34 - 47 with Coil 10 000 Turns AWG 42.5 Wire Release Ampere Turns: 12 - 26 Length 19 mm, Internal Dia 4.2 mm Operating Temperature Range (°C): -65 to +125	CELFS

PAGE INTENTIONALLY LEFT BLANK

Section 18 Component Type: OPTO-ELECTRONICS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
OP224	ESA/SCC 5402/005	GaAlAs Diode, Infrared Wavelenght at Peak Emission (nm): 880 V BR (V): 2.0 IF (A): 0.100 PD (mW): 125 Package (mm Max): DIA 1.57 x 3.46	OPTUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
OP604		NPN Collector Dark Current (nA): 25 PD (mW): 50 BV CEO (V): 50 IC (mA): 22 Package (mm Max): DIA 1.57 x 3.00	OPTUC

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
TH7863B		Area Array Image Sensor without Anti Blooming, 2 x 288 x 384 Pixels Radiation Hardened Technology	TCSFE
TH31160		Area Array, 14 x 14 Pixels	TCSFE

PAGE INTENTIONALLY LEFT BLANK

Section 30 Component Type: RF PASSIVE COMPONENTS

Sub-Section

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
19*xxx/29*xxx		Tab Termination Drop-in Frequency Range (GHz):0.1 - 18 RF Power P (W): 1	TRABD
ML2WMS-xxx		Drop-in, Miniature Frequency Range (GHz): 12 - 18 RF Power P (W): 0.71 Operating Temperature Range (Deg): -40 to +80	MACBD

PAGE INTENTIONALLY LEFT BLANK

COMPONENT TYPE	SPECIFICATION	CHARACTERISTICS/REMARKS	MCODE
RF Power Divider	ESA/SCC 3404/001	Frequency Range (GHz): 1.8 - 2.5 Code letter N only Coupling Factor (dB): 3 Insertion Loss (dB): 0.25 VSWR: 1.20 RF Power P(W): 50 Operating Temperature Range (°C): -120 to +125	RADFI
RF Power Divider	ESA/SCC 3404/004	Frequency Range (GHz): 1 - 18 Coupling Factor (dB): 3 RF Power P (W): 1 - 50 Operating Temperature Range (°C): -40 to +85	RADFI

PAGE INTENTIONALLY LEFT BLANK