DIODES, VOLTAGE REGULATOR,

BASED ON BZX55 SERIES

ESCC Detail Specification No. 5102/010

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SCC

space components coordination group

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		SCCG Chairman	ESA Director General or his Deputy
Issue 4	August 1984	-	-
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DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This issue supersedes Issue 3 and incorporates all modifications agreed on the basis of Policy DCR's 21022/21025 and the following DCR's:-		
		Para. 2	: MIL-STD-202 added	23177
		Table 1(a)	: Type Variants for lead length added. Note added	22206
		Table 1(b)	: Amended	23177
		Figure 1	: Amended	23177
		Figure 2	: Inches and Lead Variants added	23177/ 22206
		Para. 4.2.3	: X-Ray test deleted	22206/ 22236
		Tables 2(d.c.) (a.c.)	: Format changed	23177
		Table 2(a.c.)	: Sample note added	22206
		Tables 3 and 4	: Format changed	23177
		Table 4	: V_Z limit changed to ±5%	22206
		Table 4	: I_R limits changed	22267
		Table 6	: Format changed	23177
		Appendix A	: New lead material added	22206
		Appendix A	: Qual. and LAT testing changed	24042
		Appendix B	: Amended	24029/ 24028
		Appendices	: Format changed	23187
'A'	10-03-1986	P15. Table 4	: Amended for incorrect implementation of DCR 22267	23242
'B'	July '93	P1. Cover page		None
		P2. DCN		None
		P4. ToC	: Appendix 'A' deleted (T.E.G.)	23493
		P6. Table 1(a)	: Lead Material and/or Finish added	21025
		P7. Table 1(a)	: Lead Material and/or Finish added	21025
		P10. Para. 4.2.2	: PIND deviation amended	21043
		Para. 4.2.3	: Radiographic Inspection deviation amended	21049
		P15. Table 3	: Note 3 deleted	21047
		P18/19. Appendix 'A'	: Appendix deleted	23493
		P20. Appendix 'B'	: Renumbered Appendix 'A' and relocated page 18	23493
		This document has been transferred from hardcopy to electronic format. The content is unchanged but minor differences in presentation exist.		
'C'	July '96	P1. Cover page		None
		P2. DCN		None
		P3. T of C	: Para. 1.7 entry added	21083
		P5. Para. 1.7	: Paragraph added	21083

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1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Diodes, Voltage Regulator, based on the BZX55 Series.

It shall be read in conjunction with ESA/SCC Generic Specification No. 5000, the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS

Variants of the basic diodes specified herein, which are also covered by this specification, are given in Table 1(a).

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the diodes specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The derating information applicable to the diodes specified herein is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the diodes specified herein are shown in Figure 2.

1.6 FUNCTIONAL DIAGRAM

The functional diagram, showing lead identification, of the diodes specified herein, is shown in Figure 3.

1.7 HIGH TEMPERATURE TEST PRECAUTIONS

For tin-lead plated or solder-dipped lead finish, all tests to be performed at a temperature that exceeds +125°C shall be carried out in a 100% inert atmosphere.

2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

(a) ESA/SCC Generic Specification No. 5000 for Discrete Semiconductors.

(b) MIL-STD-750, Test Methods and Procedures for Semiconductor Devices.

(c) MIL-STD-202, Test Methods for Electronic and Electrical Component Parts.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESA/SCC Basic Specification No. 21300 shall apply.

TABLE 1(a) - TYPE VARIANTS

Variant (See Notes) (1)	Based on Type BZX (2)	V_Z Nom. (V) (3)	V_Z Min. (V) (4)	V_Z Max. (V) (5)	I_Z (mA) (6)	I_{Zmax} (mA) (7)	Z_{Zmax} (Ω) (8)	V_R (V) (9)	I_R (max. μA) (10)	T_{CVZ} (%/°C) (11)		Z_K (max. Ω) (12)	I_{ZK} (mA) (13)	I_R max at Tamb = +150°C (μA) (14)	Lead Material and Finish (15)
										Min.	Max.				
01, 48	55 - C2V4	2.4	2.28	2.56	5.0	115	85	1.0	50	− 0.08	− 0.06	600	1.0	100	C3 or C4
02, 49	55 - C2V7	2.7	2.5	2.9	5.0	135	85	1.0	10	− 0.08	− 0.06	600	1.0	50	C3 or C4
03, 50	55 - C3V0	3.0	2.8	3.2	5.0	125	85	1.0	4.0	− 0.08	− 0.06	600	1.0	40	C3 or C4
04, 51	55 - C3V3	3.3	3.1	3.5	5.0	115	85	1.0	2.0	− 0.08	− 0.05	600	1.0	40	C3 or C4
05, 52	55 - C3V6	3.6	3.4	3.8	5.0	105	85	1.0	2.0	− 0.08	− 0.04	600	1.0	40	C3 or C4
06, 53	55 - C3V9	3.9	3.7	4.1	5.0	95	85	1.0	2.0	− 0.07	− 0.03	600	1.0	40	C3 or C4
07, 54	55 - C4V3	4.3	4.0	4.6	5.0	90	75	1.0	1.0	− 0.04	− 0.01	600	1.0	20	C3 or C4
08, 55	55 - C4V7	4.7	4.4	5.0	5.0	85	60	1.0	0.5	− 0.03	+ 0.01	600	1.0	10	C3 or C4
09, 56	55 - C5V1	5.1	4.8	5.4	5.0	80	35	1.0	0.1	− 0.02	+ 0.05	550	1.0	2.0	C3 or C4
10, 57	55 - C5V6	5.6	5.2	6.0	5.0	70	25	1.0	0.1	− 0.01	+ 0.06	450	1.0	2.0	C3 or C4
11, 58	55 - C6V2	6.2	5.8	6.6	5.0	64	10	2.0	0.1	0	+ 0.07	200	1.0	2.0	C3 or C4
12, 59	55 - C6V8	6.8	6.4	7.2	5.0	58	8.0	3.0	0.1	+ 0.01	+ 0.08	150	1.0	2.0	C3 or C4
13, 60	55 - C7V5	7.5	7.0	7.9	5.0	53	7.0	5.0	0.1	+ 0.01	+ 0.09	50	1.0	2.0	C3 or C4
14, 61	55 - C8V2	8.2	7.7	8.7	5.0	47	7.0	6.2	0.1	+ 0.01	+ 0.09	50	1.0	2.0	C3 or C4
15, 62	55 - C9V1	9.1	8.5	9.6	5.0	43	10	6.8	0.1	+ 0.02	+ 0.10	50	1.0	2.0	C3 or C4
16, 63	55 - C10	10	9.4	10.6	5.0	40	15	7.5	0.1	+ 0.03	+ 0.11	70	1.0	2.0	C3 or C4
17, 64	55 - C11	11	10.4	11.6	5.0	36	20	8.2	0.1	+ 0.03	+ 0.11	70	1.0	2.0	C3 or C4
18, 65	55 - C12	12	11.4	12.7	5.0	32	20	9.1	0.1	+ 0.03	+ 0.11	90	1.0	2.0	C3 or C4
19, 66	55 - C13	13	12.4	14.1	5.0	29	26	10	0.1	+ 0.03	+ 0.11	110	1.0	2.0	C3 or C4
20, 67	55 - C15	15	13.8	15.6	5.0	27	30	11	0.1	+ 0.03	+ 0.11	110	1.0	2.0	C3 or C4
21, 68	55 - C16	16	15.3	17.1	5.0	24	40	12	0.1	+ 0.03	+ 0.11	170	1.0	2.0	C3 or C4
22, 69	55 - C18	18	16.8	19.1	5.0	21	50	13	0.1	+ 0.03	+ 0.11	170	1.0	2.0	C3 or C4
23, 70	55 - C20	20	18.8	21.2	5.0	20	55	15	0.1	+ 0.03	+ 0.11	220	1.0	2.0	C3 or C4

NOTES: See Page 7.

TABLE 1(a) - TYPE VARIANTS (Cont'd)

Variant (See Notes) (1)	Based on Type BZX (2)	V_Z Nom. (V) (3)	V_Z Min. (V) (4)	V_Z Max. (V) (5)	I_Z (mA) (6)	I_{Zmax} (mA) (7)	Z_{Zmax} (Ω) (8)	V_R (V) (9)	I_R (max. µA) (10)	T_{CVZ} (%/°C) (11)		Z_K (max. Ω) (12)	I_{ZK} (mA) (13)	I_R max at Tamb = +150°C (µA) (14)	Lead Material and Finish (15)
										Min.	Max.				
24, 71	55 - C22	22	20.8	23.3	5.0	18	55	16	0.1	+0.03	+0.11	220	1.0	2.0	C3 or C4
25, 72	55 - C24	24	22.8	25.6	5.0	16	80	18	0.1	+0.04	+0.12	220	1.0	2.0	C3 or C4
26, 73	55 - C27	27	25.1	28.9	5.0	14	80	20	0.1	+0.04	+0.12	220	1.0	2.0	C3 or C4
27, 74	55 - C30	30	28	32	5.0	13	80	22	0.1	+0.04	+0.12	220	1.0	2.0	C3 or C4
28, 75	55 - C33	33	31	35	5.0	12	80	24	0.1	+0.04	+0.12	220	1.0	2.0	C3 or C4
29, 76	55 - C36	36	34	38	5.0	11	80	27	0.1	+0.04	+0.12	220	1.0	2.0	C3 or C4
30, 77	55 - C39	39	37	41	2.5	10	90	30	0.1	+0.04	+0.12	500	0.5	5.0	C3 or C4
31, 78	55 - C43	43	40	46	2.5	9.2	90	33	0.1	+0.04	+0.12	600	0.5	5.0	C3 or C4
32, 79	55 - C47	47	44	50	2.5	8.5	110	36	0.1	+0.04	+0.12	700	0.5	5.0	C3 or C4
33, 80	55 - C51	51	48	54	2.5	7.8	125	39	0.1	+0.04	+0.12	700	0.5	10	C3 or C4
34, 81	55 - C56	56	52	60	2.5	7.0	135	43	0.1	+0.04	+0.12	1000	0.5	10	C3 or C4
35, 82	55 - C62	62	58	66	2.5	6.4	150	47	0.1	+0.04	+0.12	1000	0.5	10	C3 or C4
36, 83	55 - C68	68	64	72	2.5	5.9	200	51	0.1	+0.04	+0.12	1000	0.5	10	C3 or C4
37, 84	55 - C75	75	70	80	2.5	5.3	250	56	0.1	+0.04	+0.12	1500	0.5	10	C3 or C4
38, 85	55 - C82	82	77	87	2.5	4.8	300	62	0.1	+0.04	+0.12	2000	0.5	10	C3 or C4
39, 86	55 - C91	91	85	94	1.0	4.4	450	68	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
40, 87	55 - C100	100	96	106	1.0	4.0	450	75	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
41, 88	55 - C110	110	104	116	1.0	3.6	600	82	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
42, 89	55 - C120	120	114	127	1.0	3.3	800	91	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
43, 90	55 - C130	130	124	141	1.0	3.0	1000	100	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
44, 91	55 - C150	150	138	156	1.0	2.6	1200	110	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
45, 92	55 - C160	160	153	171	1.0	2.5	1500	120	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
46, 93	55 - C180	180	168	191	1.0	2.2	1800	130	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4
47, 94	55 - C200	200	188	212	1.0	2.0	2000	150	0.1	+0.04	+0.12	5000	0.1	10	C3 or C4

NOTES

1. Variants 01 to 47 have lead lengths of 1.0inch (25.4mm) min.
2. Variants 48 to 94 have lead lengths of 0.5 inch (12.7m.) min.
3. See Figure 2.

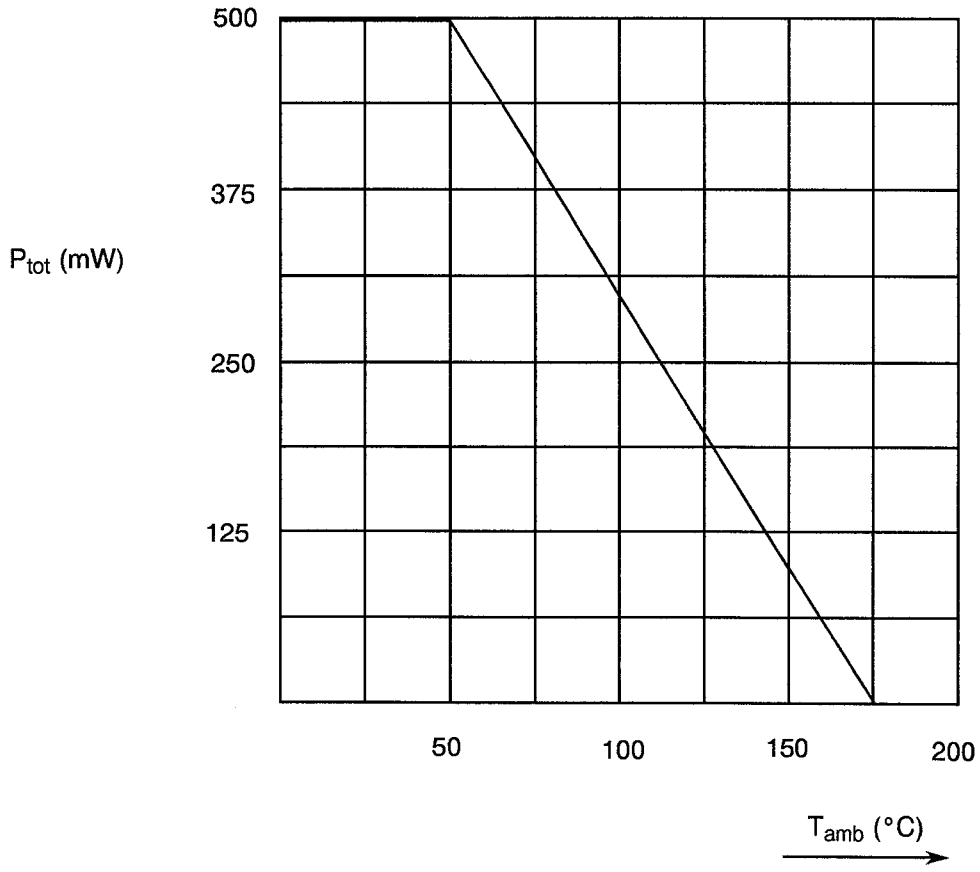
TABLE 1(b) - MAXIMUM RATINGS

No.	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNIT	REMARKS
1	Power Dissipation	P_{tot}	500	mW	$T_{amb} \leq +25°C$ See Notes 1, 2
2	Operating Temperature Range	T_{op}	−55 to +150	°C	T_{amb}
3	Storage Temperature Range	T_{stg}	−65 to +150	°C	
4	Soldering Temperature	T_{sol}	+260	°C	Time: ≤10 seconds; Distance from case: ≥ 1.5mm

NOTES

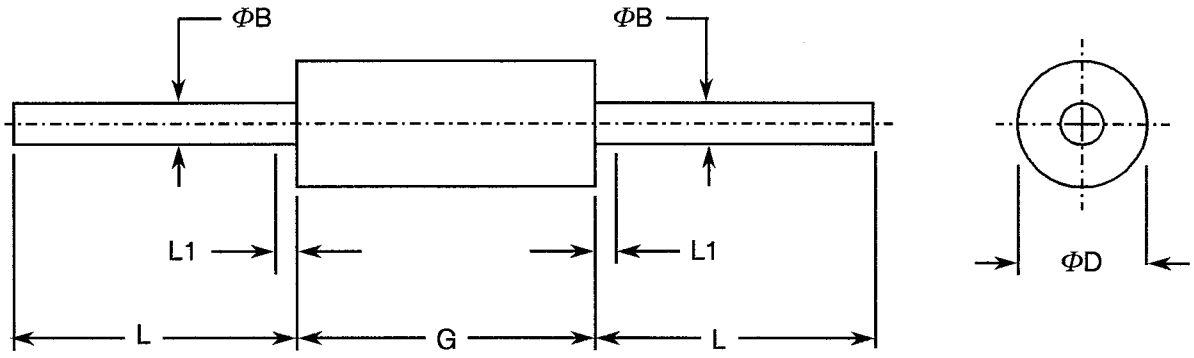
1. Leads shall be maintained at ambient temperature 4 mm from the body.
2. For derating at $T_{amb} > +25°C$ see Figure 1.

FIGURE 1 - PARAMETER DERATING INFORMATION



Power Dissipation Versus Temperature

FIGURE 2 - PHYSICAL DIMENSIONS

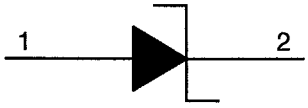


SYMBOL	MILLIMETRES		INCHES		NOTES
	MIN. (3)	MAX.	MIN.	MAX.	
ΦB	0.458	0.558	0.018	0.022	-
ΦD	1.42	1.91	0.056	0.075	1
G	3.56	4.57	0.140	0.180	1
L	Note 4	-	Note 4	-	-
L1	-	2.5	-	0.098	2

NOTES

1. Package contour optional within cylinder of diameter ΦD and length G. Slugs, if any, shall be included within this cylinder but shall not be subject to the minimum limit of ΦD.
2. Lead diameter not controlled in this zone to allow for flash, lead finish build-up, and minor irregularities other than slugs.
3. The millimetre dimensions are derived from the original inch dimensions.
4. Variants 01 to 47 have leads with L of 1 inch (25.4 mm) min and variants 48 to 94 have leads with L of 0.5 inch (12.7 mm) min.

FIGURE 3 - FUNCTIONAL DIAGRAM



1. Anode
2. Cathode

NOTES

1. The cathode end shall be marked with a coloured ring.

4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the diodes specified herein are stated in this specification and ESA/SCC Generic Specification No. 5000 for Discrete Semiconductors. Deviations from the Generic Specification applicable to this specification only, are listed in Para. 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESA/SCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

4.2 DEVIATIONS FROM GENERIC SPECIFICATION

4.2.1 Deviations from Special In-process Controls

None.

4.2.2 Deviations from Final Production Tests (Chart II)

(a) Bond Strength Test: Shall not be performed.

(b) Die Shear Test: Shall not be performed.

(c) Particle Impact Noise Detection (PIND) Test: Not applicable.

(d) Thermal Shock Test: Shall be performed in accordance with Test Method 107, Condition 'B', of MIL-STD-202.

4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)

(a) H.T.R.B. Test: Shall not be performed.

(b) Radiographic Inspection: Not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Bond Strength Test: Shall not be performed.

(b) Die Shear Test: Shall not be performed.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

None.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the diodes specified herein shall be checked. They shall conform to those shown in Figure 2.

4.3.2 Weight

The maximum weight of the diodes specified herein shall be 0.2 grammes.

4.3.4 Terminal Strength

The requirements for terminal strength testing are specified in Section 9 of ESA/SCC Generic Specification No. 5000. The test conditions shall be as follows:-

Test Condition : 'A'.
Applied Force : 5.0 Newtons.
Duration : 10 seconds

4.4 MATERIALS AND FINISHES

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the diodes specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

4.4.1 Case

Glass, hermetically sealed.

4.4.2 Lead Material and Finish

The requirements of the lead material shall be Type 'C' with either Type '3 or 4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500.

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESA/SCC Basic Specification No. 21700. Each component shall be marked in respect of:-

(a) Lead Identification.

(b) The SCC Component Number.

(c) Traceability Information.

4.5.2 Lead Identification

Lead identification shall be as shown in Figures 2 and 3 of this specification.

4.5.3 The SCC Component Number

Each component shall bear the SCC Component Number which shall be constituted and marked as follows:

510201002B

Detail Specification Number
Type Variant (see Table 1(a))
Testing Level (B or C, as applicable)

4.5.4 Traceability Information

Each component shall be marked in respect of traceability information in accordance with the requirements of ESA/SCC Basic Specification No. 21700.

4.5.5 Marking of Small Components

When it is considered that the component is too small to accommodate the marking as specified above, as much as space permits shall be marked. The order of precedence shall be as follows:-

(a) Lead Identification.

(b) The SCC Component Number.

(c) Traceability Information.

The marking information in full shall accompany each component in its primary package.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured at room temperature are scheduled in Table 2. The measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.6.2 Electrical Measurements at High and Low Temperatures

The parameters to be measured at high and low temperatures are scheduled in Table 3.

4.6.3 Circuits for Electrical Measurements

Circuits for use in performing the electrical measurements listed in Tables 2 and 3 of this specification are shown in Figure 4.

4.7 BURN-IN TESTS

4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C. The parameter drift value (Δ) applicable to the parameters scheduled, shall not be exceeded. In addition to these drift value requirements, the appropriate limit value specified in Table 2 for a given parameter shall not be exceeded.

4.7.2 Conditions for Burn-in

The requirements for burn-in are specified in Section 7 of ESA/SCC Generic Specification No. 5000. The conditions for burn-in shall be as specified in Table 5.

4.7.3 Electrical Circuits for Burn-in

Circuits for use in performing the burn-in tests are shown in Figure 5 of this specification.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - d.c. PARAMETERS

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITION	LIMITS		UNIT
					MIN.	MAX.	
1	Zener Voltage	V_Z	4022	I_Z = (1) mA	(2)	(3)	V
2	Reverse Current	I_R	4016	V_R = (4) V	-	(5)	µA

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - a.c. PARAMETERS

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITION (Note 10)	LIMITS		UNIT
					MIN.	MAX.	
3	Small Signal Breakdown Impedance	Z_Z	4051	I_Z = (1) mA	-	(6)	Ω
4	Small Signal Breakdown Impedance	Z_K	4051	I_{ZK} = (8) mA	-	(7)	Ω

NOTES

1. See Table 1(a), Column 6.
2. See Table 1(a), Column 4.
3. See Table 1(a), Column 5.
4. See Table 1(a), Column 9.
5. See Table 1(a), Column 10.
6. See Table 1(a), Column 8.
7. See Table 1(a), Column 12.
8. See Table 1(a), Column 13.
9. See Table 1(a), Column 14.
10. Tests to be performed on a sample basis, LTPD 7 or less.

FIGURE 4 - TEST CIRCUITS

Not applicable.

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITIONS See Note 10	LIMITS		UNIT
					MIN.	MAX.	
2	Reverse Current	I_R	4016	T_{amb} = +150°C V_R = (4)	-	(9)	µA

NOTES

1. See Page 14, Notes (1) to (9) only.

TABLE 4 - PARAMETER DRIFT VALUES

No.	CHARACTERISTICS	SYMBOL	SPEC. AND TEST METHOD	TEST CONDITIONS	CHANGE LIMITS (Δ)	UNIT
1	Zener Voltage	V_Z	As per Table 2	As per Table 2	±5.0	%
2	Reverse Current for VZ>3V	I_R	As per Table 2	As per Table 2	±100 or 50 see Note	% (3) nA
2	Reverse Current for VZ≤3V	I_R	As per Table 2	As per Table 2	+50 -100	% %

NOTES

1. Whichever is greater.

TABLE 5 - CONDITIONS FOR BURN-IN

No.	CHARACTERISTIC	SYMBOL	CONDITION	UNIT
1	Ambient Temperature	T_{amb}	+25 Distance from case: 4mm	°C
2	Working Current Current	I_{Zmax}	See Table 1(a), Column 7	mA

FIGURE 5 - ELECTRICAL CIRCUIT FOR BURN-IN

Not applicable.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION NO. 5000)

4.8.1 Electrical Measurements on Completion of Environmental Tests

The parameters to be measured on completion of environmental tests are scheduled in Table 2. The measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.2 Electrical Measurements at Intermediate Points and on Completion of Endurance Tests

The parameters to be measured at intermediate points and on completion of endurance testing are scheduled in Table 6.

4.8.3 Conditions for Operating Life Tests (Part of Endurance Testing)

The requirements for operating life testing are specified in Section 9 of ESA/SCC Generic Specification No. 5000. The conditions for operating life testing shall be the same as specified in Table 5 for the burn-in test.

4.8.4 Electrical Circuits for Operating Life Tests

The circuit to be used for performance of the operating life test shall be the same as shown in Figure 5 for burn-in.

4.8.5 Conditions for High Temperature Storage Test (Part of Endurance Testing)

The requirements for the high temperature storage test are specified in ESA/SCC Generic Specification No. 5000. The temperature to be applied shall be the maximum storage temperature specified in Table 1(b) of this specification.

TABLE 6 - ELECTRICAL MEASUREMENTS AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

No.	CHARACTERISTICS	SYMBOL	SPEC. AND TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
1	Zener Voltage	V_Z	As per Table 2	As per Table 2	(1)	(2)	V
2	Reverse Current	I_R	As per Table 2	As per Table 2	-	(3)	µA

NOTES

1. See Table 1(a), Column 4.
2. See Table 1(a), Column 5.
3. See Table 1(a), Column 10.

APPENDIX 'A'

AGREED DEVIATIONS FOR THOMSON-CSF

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para's 4.2.4 and 4.2.5	Deviations from Environmental and Endurance Tests (Chart IV) and from Lot Acceptance Tests (Chart V) 1. "Moisture Resistance", Para 9.16, according to MIL-STD-750, Method 1021, shall be replaced by "Climatic Sequence" according to IEC 68-1 with the following conditions: - Phase 'D': Option 2, 5 cycles. - Phase 'F' (Low Air Pressure): Not applicable. 2. "Seal Test", Para's 9.8.1 and 9.8.2 according to MIL-STD-750, method 1071, Conditions 'C' and 'H', shall be replaced by "Seal Test" according to IEC 68-2-17, Test Ql (Bomb Pressure Test) with the following conditions: - The pressure within the vessel shall be 210N/cm^2. - The duration of conditioning shall be 4 hours. - Final measurements: I_R with the limits as specified in Table 2 of this Detail Specification.