DIODES, SILICON, SWITCHING,

BASED ON TYPES 1N5802, 1N5804, 1N5806,

1N5802US, 1N5804US AND 1N5806US

ESCC Detail Specification No. 5101/014

ISSUE 1

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ESA/SCC Detail Specification No. 5101/014

space components
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		SCCG Chairman	ESA Director General or his Deputy
Issue 4	November 1998		

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This Issue supersedes Issue 3 and incorporates all modifications defined in Revision 'A' to Issue 3 and the changes agreed in the following DCRs:-		
		Cover Page	: Title amended to include new part types	221503
		DCN		None
		Para. 1.1	: First sentence amended to include new part types	221503
		Para. 1.7	: Text amended	221503
		Para. 1.8	: New paragraph added	221503
		Para. 2	: Items (c) to (e) deleted	221503
		Para. 3	: Definitions deleted	221503
		Table 1(a)	: Table expanded	221503
			: Variants 07 to 12 added	221503
		Table 1(b)	: No. 1, Unit and Remarks amended	221503
			: No. 2, Completely amended	221503
			: No. 3, Maximum Ratings and Note reference amended	221503
			: No. 6, Characteristics and Remarks amended	221503
			: No. 7 and 8 added	221503
			: Notes 2 to 4 deleted and new Notes 2 to 6 added	221503
		Figure 1	: Title and Graph amended	221503
			: Undertitle added	221503
		Figure 2	: Subtitle added to existing Figure	221503
		Figure 2(b)	: New Figure added	221503
		Figure 2(c)	: New Figure added	221503
		Figure 3	: Note 1 amended	221503
		Para. 4.2.2	: Existing Deviation (c) renumbered as "(g)" and amended	221503
			: New Deviations (c) to (f) added	221503
			: New Deviation (h) added	221503
		Para. 4.2.3	: Existing Deviation (a) deleted	221503
			: New Deviations (a) to (c) added	221503
		Para. 4.2.4	: New Deviations (c) and (d) added	221503
		Para. 4.2.5	: Existing Deration deleted	221503
			: New Deviations (a) and (b) added	221503
		Para. 4.3.2	: Text amended to include weights for new Variants	221503
		Para. 4.3.3	: "For Variants 01 to 09," added to the beginning of the second sentence	221503
		Para. 4.4.2	: Existing text deleted and new text added	221503
		Para. 4.5.1	: Existing text deleted and new text added	221503
		Para. 4.5.2	: Title and text amended to read "Polarity"	221503
		Para. 4.5.5	: Deleted in toto	221503
		Para. 4.6.2	: Existing text extended and new sentence added	221503
		Para. 4.7.2	: Existing paragraph renumbered to "4.7.3" and Title and text amended	221503
			: New paragraph added	221503
		Para. 4.7.3	: Existing paragraph renumbered as "4.7.5" and Title amended	221503
		Para. 4.7.4	: New paragraph added	221503
		Table 2 d.c.	: No. 1, Characteristics, Symbol, Test Conditions and Unit amended	221503

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
			: No. 2 , Renumbered as "3" and Test Conditions amended	221503
			, New No. 2 added	221503
			: No. 4 , New No. 4 added	221503
			: Existing Note 1 renumbered as "2" and amended	221503
			: New Note 1 added	221503
			: New Note 3 added	221503
		Table 2 a.c.	: No. 3, renumbered as "5" and Test Conditions amended	221503
			: No. 4, renumbered as "6" and Test Method and Test Conditions amended	221503
			: New Nos. 7 to 9 added	221503
			: Notes 1 to 3 added	221503
		Table 3	: Title amended	221503
			: New No. 1 added	221503
			: No. 2 renumbered as "3" and amended	221503
			: Existing Notes deleted and new Notes added	221503
		Table 3(b)	: New Table added	221503
		Table 4	: No. 1, "1" added to Characteristics and Symbol	221503
			: No. 2, renumbered as "3" and Upper Limit amended	221503
		Table 5(a)	: New Table added	221503
		Table 5	: Retitled as "5(b)" and Table amended	221503
			: Existing Notes deleted and new Note added	221503
		Figure 5(a)	: New entry added	221503
		Figure 5	: Entry retitled as "5(b)"	221503
		Para. 4.8.3	: In the second sentence, "5" amended to "5(b)"	221503
		Table 6	: No. 1 , "1" added to Characteristics and Symbol	221503
			, Change Limits added and Unit amended	221503
			: No. 2 , renumbered as "3" and Change Limits added	221503
			: No. 3 , deleted in toto	221503
			: New Note 1 added	221503
		Appendix 'A'	: Appendix added	221503

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TABLES

FIGURES

APPENDICES (Applicable to specific Manufacturers only)

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Diodes, Silicon, Switching, based on Types 1N5802, 1N5804, 1N5806, 1N5802US, 1N5804US and 1N5806US. 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 type 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 as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The parameter 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.

1.8 HANDLING PRECAUTIONS

These devices are susceptible to damage by electrostatic discharge. Therefore, suitable precautions shall be employed for protection during all phases of manufacture, testing, packaging, shipment and any handling.

The components are categorised as Class 3 with a Minimum Critical Path Failure Voltage of >15 000V.

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.

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

(1) VARIANT	(2) BASED ON TYPE	(3) CASE	(4) FIGURE	(5) BREAKDOWN VOLTAGE $V_{(BR)}$(V)	(6) WORKING PEAK REVERSE VOLTAGE V_{RWM}(V)	(7) LEAD/END-CAP MATERIAL AND FINISH
01	1N5806	UU	2(a)	160	150	O1
02	1N5806	UU	2(a)	160	150	A3 or A4
03	1N5804	UU	2(a)	110	100	O1
04	1N5804	UU	2(a)	110	100	A3 or A4
05	1N5802	UU	2(a)	60	50	O1
06	1N5802	UU	2(a)	60	50	A3 or A4
07	1N5806	A	2(b)	160	150	A3 or A4
08	1N5804	A	2(b)	110	100	A3 or A4
09	1N5802	A	2(b)	60	50	A3 or A4
10	1N5806US	MELF	2(c)	160	150	O4
11	1N5804US	MELF	2(c)	110	100	O4
12	1N5802US	MELF	2(c)	60	50	O4

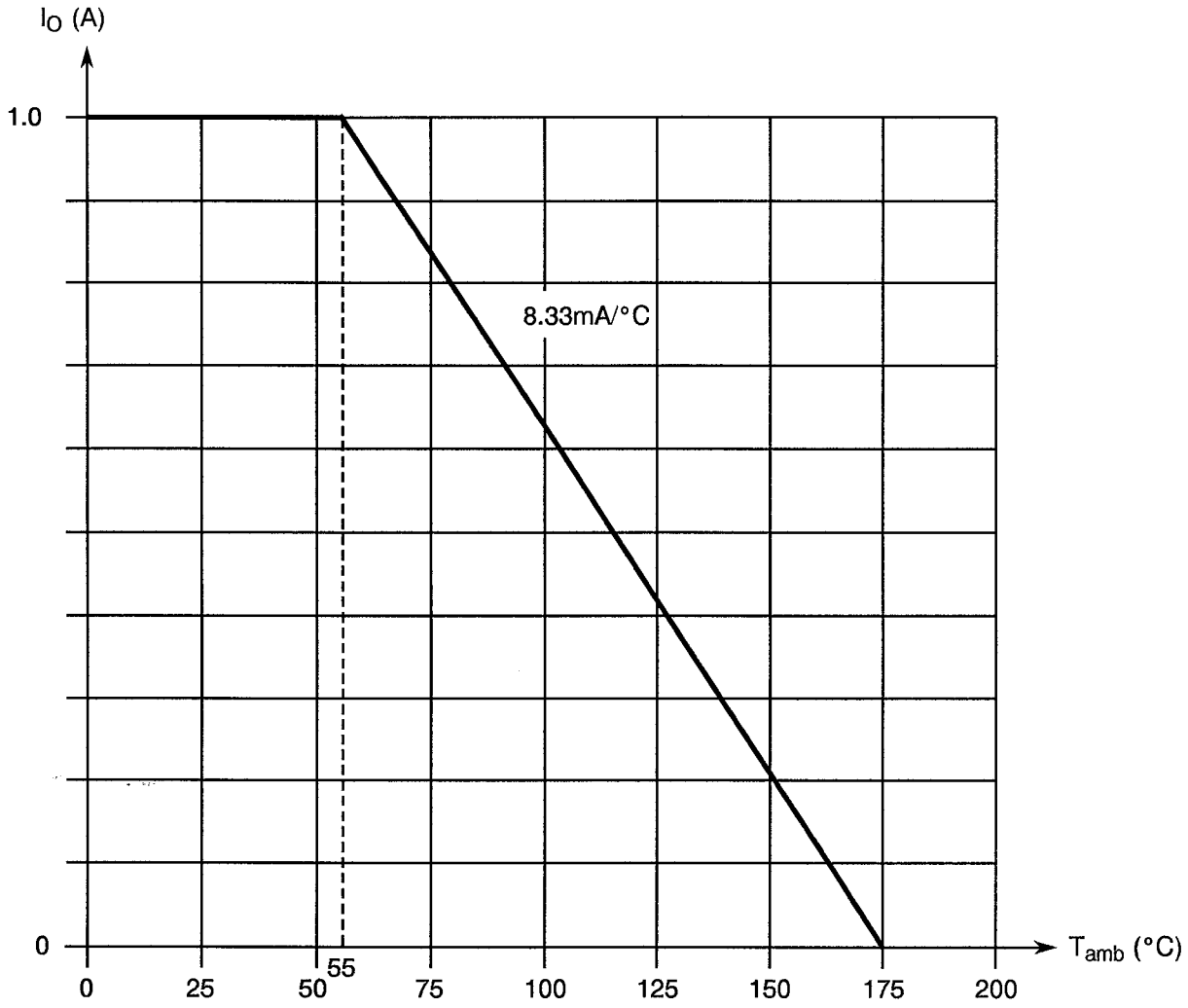
TABLE 1(b) - MAXIMUM RATINGS

NO.	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNIT	REMARKS
1	Forward Surge Current	I_{FSM}	35	A(pk)	At $T_{amb} \leq +25°C$ (Note 1)
2	Working Peak Reverse Voltage	V_{RWM}	Note 2	V(pk)	At $T_{amb} \leq +25°C$
3	Average Output Rectified Current	I_O	1.0	A	Note 3
4	Operating Temperature Range	T_{op}	−65 to +175	°C	T_{amb}
5	Storage Temperature Range	T_{stg}	−65 to +175	°C	
6	Soldering Temperature Variants 01 to 09 Variants 10 to 12	T_{sol}	+245	°C	 Note 4 Note 5
7	Thermal Resistance (Junction to Lead)	$R_{TH(J-L)}$	36	°C/W	Note 6
8	Thermal Resistance (Junction to End-Cap)	$R_{TH(J-EC)}$	20	°C/W	

NOTES

1. Sinusoidal, with period = 8.3ms maximum.
2. See Column 6 of Table 1(a).
3. This rating is independant of mounting or heat-sinking. At $T_{amb} \leq +55°C$. For derating at $T_{amb} > +55°C$, see Figure 1.
4. Duration 10 seconds maximum at a distance of not less than 1.5mm from the device body and the same lead shall not be resoldered until 3 minutes have elapsed.
5. Duration 10 seconds maximum and the same termination shall not be resoldered until 3 minutes have elapsed.
6. Leads shall be maintained at ambient temperature 9.53mm from the body.

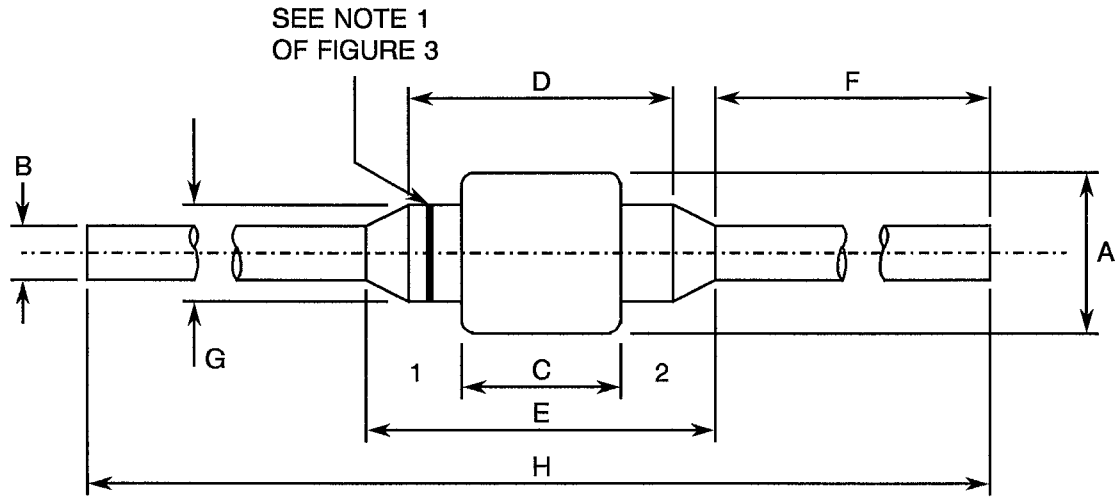
FIGURE 1 - PARAMETER DERATING INFORMATION



Average Output Rectified Current versus Temperature

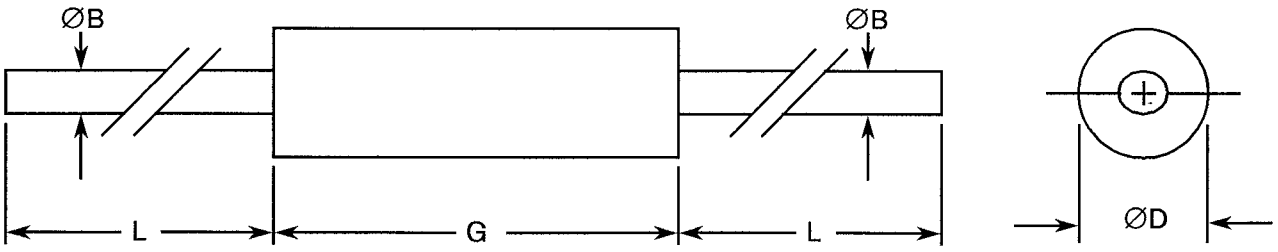
FIGURE 2 - PHYSICAL DIMENSIONS

FIGURE 2(a) - VARIANTS 01 TO 06



SYMBOL	MILLIMETRES	
	MIN.	MAX.
A	-	2.2
B	0.68	0.74
C	-	2.3
D	-	4.0
E	-	6.35
F	17.8	-
G	-	1.5
H	41.3	-

FIGURE 2(b) - VARIANTS 07 TO 09



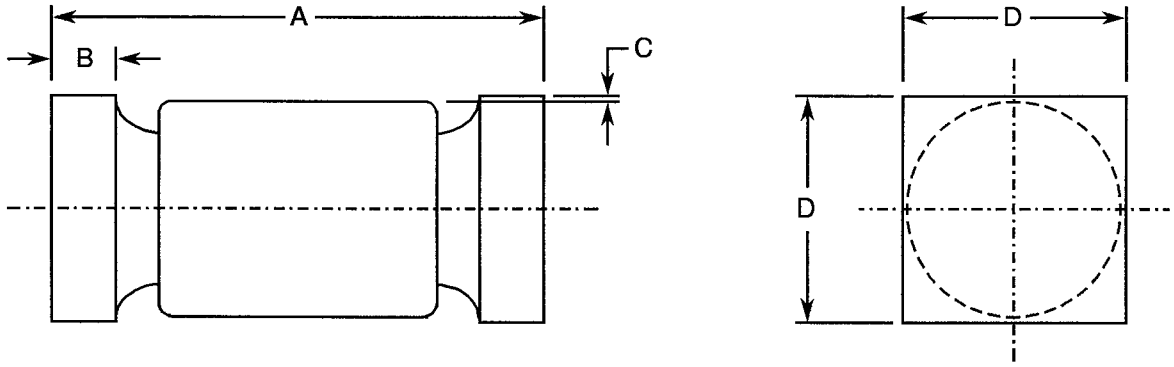
NOTES

1. Dimension ØD shall be measured at the largest diameter.
2. Dimension G shall include the sections of the lead over which the diameter is uncontrolled. This uncontrolled area is defined as the zone between the edge of the diode body and extending 1.27mm onto the leads.

SYMBOL	MILLIMETRES		NOTES
	MIN.	MAX	
ØB	0.66	0.84	-
ØD	1.65	2.79	1
G	3.18	6.35	2
L	17.78	33.02	-

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

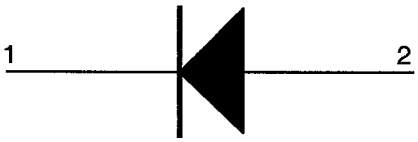
FIGURE 2(c) - VARIANTS 10 TO 12



SYMBOL	MILLIMETRES	
	MIN.	MAX
A	4.27	5.08
B	0.48	0.71
C	0.08	-
D	2.31	2.62

FIGURE 3 - FUNCTIONAL DIAGRAM

1 Cathode
2 Anode



NOTES

1. For Variants 01 to 09, the cathode end shall be marked with a contrasting coloured band.

   For Variants 10 to 12, the cathode end shall be marked with a minimum of 3 contrasting coloured dots or a black band.

4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the diodes specified herein shall be as stated in this specification and ESA/SCC Generic Specification No. 5000 for Discrete Semiconductors. Deviations from the Generic Specification, applicable to this Detail 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 Special In-process Controls

None.

4.2.2 Deviations from Final Production Tests (Chart II)

(a) Para. 9.2.1, Bond Strength Test: Not applicable.

(b) Para. 9.2.2, Die Shear Test: Not applicable.

(c) At any time following Para. 9.5.1, Thermal Shock Test, Thermal Impedance measurements shall be performed in accordance with MIL-STD-750, Test Method 3101 as specified in Table 2, Item 9.

(d) Para. 9.6, Constant Acceleration: Not applicable.

(e) Para. 9.7, Particle Impact Noise Detection (PIND) test: Not applicable.

(f) Para. 9.8.1, Seal Test Fine Leak: Not applicable.

(g) Immediately following Para. 9.9.3, Electrical Measurements at Room Temperature, a Surge Current test shall be performed on a sample basis, LTPD = 7 or lower, in accordance with MIL-STD-750, Test Method 4066 using the following conditions:

- I_{FSM} = 35A(pk).
- I_O = 1.0A.
- V_{RWM} = See column 6 of Table 1(a).

10 surges at a rate of 1 per minute maximum and of duration 1/100 or 1/120 seconds.

Before and after Surge Current application, the sample devices shall be electronically tested in accordance with Table 6 of this specification.

(h) Immediately following the Surge Current test specified in (g) above, a "Scope-display Evaluation" shall be made of the reverse breakdown characteristics as follows:

- Display calibration: 50 to 100μA and 20 to 50V per division.
- Reverse current over the knee: 500μA minimum.

Any discontinuity or dynamic instability of the trace shall be cause for rejection.

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

(a) Para. 9.9.5, Safe Operating Area: Not applicable.

(b) Para. 9.8.1, Seal Test Fine Leak: Not applicable.

(c) Para. 9.12, Radiographic Inspection: Not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.2.3, Bond Strength Test: Not applicable.

(b) Para. 9.2.4, Die Shear Test: Not applicable.

(c) Para. 9.8.1, Seal Test Fine Leak: Not applicable.

(d) Para. 9.15, Constant Acceleration: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.8.1, Seal Test Fine Leak: Not applicable.

(b) Para. 9.15, Constant Acceleration: Not applicable.

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 0.25 grammes for Variants 01 to 06, 0.4 grammes for Variants 07 to 09 and 0.3 grammes for Variants 10 to 12.

4.3.3 Terminal Strength

The requirements for terminal strength testing are specified in Section 9 of ESA/SCC Generic Specification No. 5000. For Variants 01 to 09, the test conditions shall be as follows:-

Test Condition : 'A'.

Applied Force : 17.8 Newtons.

Duration : 15 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

The case shall be hermetically sealed and have a glass body.

4.4.2 Lead Material and Finish

For Variants 01 to 06, the lead material shall be either Type 'A' or Type 'O' with either Type '1' or Type '3 or 4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500. (See Table 1(a) for Type Variants).

For Variants 07 to 09, the lead material shall be Type 'A' with Type '3 or 4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500. (See Table 1(a) for Type Variants).

For Variants 10 to 12, the termination material shall be Type 'O' with Type '4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500. (See Table 1(a) for Type Variants).

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 and the following paragraphs. When the component is too small to accomodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany the component in it's primary package.

The information to be marked and the order of precedence, shall be as follows:-

(a) Polarity.

(b) The SCC Component Number.

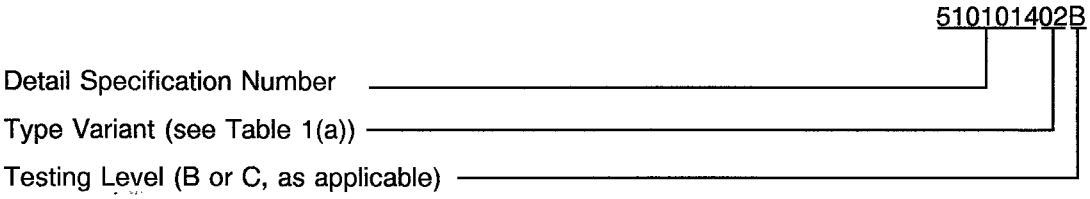
(c) Traceability Information.

4.5.2 Polarity

Polarity shall be as shown in Figures 2 and 3.

4.5.3 The SCC Component Number

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



4.5.4 Traceability Information

Each component shall be marked in respect of traceability information as defined in ESA/SCC Basic Specification No. 21700.

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. Unless otherwise stated, 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 Tables 3(a) and 3(b). Unless otherwise stated, the measurements shall be performed at $T_{amb} = +100(+0-5)$ and $T_{amb} = -65(+5-0)$ °C respectively.

4.6.3 Circuits for Electrical Measurements

Circuits for use in performing electrical measurements listed in Tables 2 and 3 are shown, where applicable, in MIL-STD-750 and 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, measurements shall be performed at $T_{amb} = +22 \pm 3$ °C. The parameter drift values (Δ) applicable to the scheduled parameters shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit value specified in Table 2 shall not be exceeded.

4.7.2 Conditions for High Temperature Reverse Bias Burn-in

The requirements for high temperature reverse bias burn-in are specified in Section 7 of ESA/SCC Generic Specification No. 5000. The conditions for high temperature reverse bias burn-in shall be as specified in Table 5(a) of this specification.

4.7.3 Conditions for Power Burn-in

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

4.7.4 Electrical Circuits for High Temperature Reverse Bias Burn-in (Figure 5(a))

Not applicable.

4.7.5 Electrical Circuits for Power Burn-in (Figure 5(b))

Not applicable.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - D.C. PARAMETERS

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
1	D.C. Forward Voltage 1	V_{F1}	4011	I_F = 1.0A(pk) (Note 1)	-	0.875	V(pk)
2	D.C. Forward Voltage 2	V_{F2}	4011	I_F = 2.5A(pk) (Note 1)	-	0.975	V(pk)
3	D.C. Reverse Current	I_R	4016	D.C. Method $V_R = V_{RWM}$ = Note 2	-	1.0	µA
4	Breakdown Voltage	$V_{(BR)}$	4021	I_R = -100µA	Note 3	-	V

NOTES
1. Pulsed measurement: tp = 8.3ms maximum.
2. See Column 6 of Table 1(a).
3. See Column 5 of Table 1(a).

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - A.C. PARAMETERS

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
5	Junction Capacitance	C_J	4001	V_R = 10V f = 1.0MHz V_{sig} = 50mV(p-p) max (Note 1)	-	25	pF
6	Reverse Recovery Time	t_{rr}	4031 Condition 'A'	$I_F = I_R$ = 500mA I_{rr} = 50mA(pk) di/dt = 65A/µs (min) (Note 1)	-	25	ns
7	Forward Recovery Time	t_{fr}	4026	I_F = 250mA(pk) t_r = 8.0ns (Notes 1 and 2)	-	15	ns
8	Forward Recovery Voltage	V_{fr}	4026	I_F = 250mA(pk) t_r = 8.0ns (Notes 1 and 2)	-	2.2	V(pk)
9	Thermal Impedance	$Z_{TH(J-C)}$	3101	I_H = 5.0A t_H = 10ms I_M = 1.0mA to 10mA t_{md} = 100µs maximum (Note 3)	-	4.5	°C/W

NOTES
1. Measurements shall be performed on a sample basis, LTPD = 7 or lower.
2. Forward Recovery Time (t_{fr}) shall be measured as the interval between zero time and the point where the pulse has decreased to 110% of the steady state value of V_F when I_F = 250mA. The maximum rise time of the response detector shall be 1.0ns. The Maximum Forward Recovery Voltage (V_{fr}) shall be measured during the forward recovery interval.
3. During Chart II only.

TABLE 3(a) - ELECTRICAL MEASUREMENTS AT HIGH TEMPERATURE

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
1	D.C. Forward Voltage 1	V_{F1}	4011	I_F = 1.0A (pk) (Note 1)	-	0.8	V(pk)
3	D.C. Reverse Current	I_R	4016	D.C. Method $V_R = V_{RWM}$ = Note 2	-	50	µA

NOTES

1. Pulsed measurement : t_p = 8.3ms maximum.
2. See Column 6 of Table 1(a).

TABLE 3(b) - ELECTRICAL MEASUREMENTS AT LOW TEMPERATURE

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
1	D.C. Forward Voltage 1	V_{F1}	4011	I_F = 1.0A (pk) (Note 1)	-	1.075	V(pk)
4	Breakdown Voltage	$V_{(BR)}$	4021	I_R = -100µA	Note 2	-	V

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

FIGURE 4(a) - REVERSE RECOVERY TIME

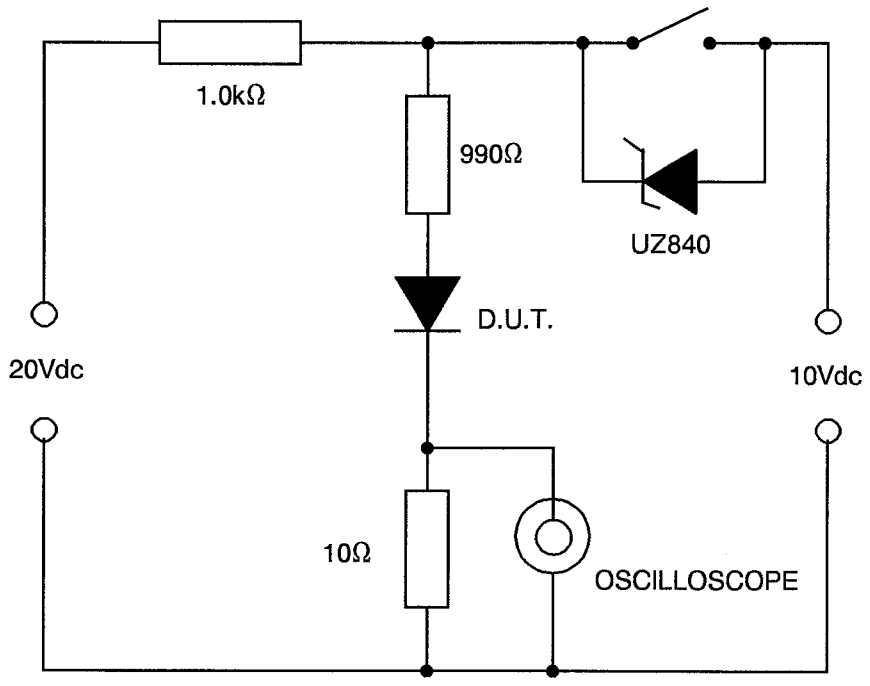


TABLE 4 - PARAMETER DRIFT VALUES

No.	CHARACTERISTICS	SYMBOL	SPEC. AND/OR TEST METHOD	TEST CONDITIONS	CHANGE LIMITS	UNIT
1	D.C. Forward Voltage 1	V_{F1}	As per Table 2	As per Table 2	50	mV
3	D.C. Reverse Current	I_R	As per Table 2	As per Table 2	±150 or (1) ±100	nA %

NOTES

1. Whichever is greater, referred to the initial value.

TABLE 5(a) - CONDITIONS FOR HIGH TEMPERATURE REVERSE BIAS BURN-IN

No.	CHARACTERISTICS	SYMBOL	CONDITION	UNIT
1	Ambient Temperature	T_{amb}	+150(+0-5)	°C
2	Reverse Voltage	V_R	Variants 01, 02, 07, 10 : 120 Variants 03, 04, 08, 11 : 80 Variants 05, 06, 09, 12 : 40	V
3	Duration	t	72	Hours

TABLE 5(b) - CONDITIONS FOR POWER BURN-IN AND OPERATING LIFE TESTS

No.	CHARACTERISTICS	SYMBOL	CONDITION	UNIT
1	Ambient Temperature	T_{amb}	MIL-STD-750	°C
2	Working Peak Reverse Voltage	V_{RWM}	Note 1	V
3	Average Output Rectified Current	I_O	1.0 f = 50 to 60 Hz	A

NOTES

1. See Column 6 of Table 1(a).

FIGURE 5(a) - ELECTRICAL CIRCUIT FOR HIGH TEMPERATURE REVERSE BIAS BURN-IN

Not applicable.

FIGURE 5(b) - ELECTRICAL CIRCUIT FOR POWER BURN-IN AND OPERATING LIFE TESTS

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. Unless otherwise stated, 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 tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

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(b) for the power burn-in test.

4.8.4 Electrical Circuits for Operating Life Tests (Figure 5(b))

Not applicable.

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/OR TEST METHOD	TEST CONDITIONS	CHANGE LIMITS (Δ)	LIMITS		UNIT
						MIN.	MAX.	
1	D.C. Forward Voltage 1	V_{F1}	As per Table 2	As per Table 2	±50mV	-	0.875	V(pk)
3	D.C. Reverse Current	I_R	As per Table 2	As per Table 2	±150nA or (1) ±100%	-	1.0	µA

NOTES

1. Whichever is greater, referred to the initial value.

APPENDIX 'A'

AGREED DEVIATIONS FOR MICROSEMI (IRL)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para. 4.2.2	Para. 9.5.1, Thermal Shock may be performed in accordance with MIL-STD-750, Test Method 1051, Test Condition 'C'. The maximum load temperature shall be +175°C. Para. 9.8.2, Seal Test Gross Leak may be performed using Test Condition 'E'.