DIODES, VOLTAGE REFERENCE,

BASED ON TYPES 1N4954 THROUGH 1N4995

ESCC Detail Specification No. 5102/013

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ESA/SCC Detail Specification No. 5102/013

space components
coordination group

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DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This issue incorprates all modifications agreed on the basis of Policy DCR No. 21016 for adaptation to new qualification requirements.		
'A'	July '93	P1. Cover page		None
		P2. DCN		None
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		P6. Table 1(a) to P9.	: Lead Material and/or Finish column amended	21025
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		Para. 4.1	: Additional text added	21019
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		P2. DCN	: In header, specification number amended to '5102/013'	23638
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		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
		P5. Para. 1.7	: Text amended	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 Reference, based on Types 1N4954 through 1N4995.

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 listed 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.

TABLE 1(a) - TYPE VARIANTS

Variant (1)	Lead Material and Finish (2)	Based on Type (3)	$V_{(BR)}$ Nom. (V) (4)	$V_{(BR)}$ Min. (V) (5)	$V_{(BR)}$ Max. (V) (6)	I_Z (mA) (7)	$I_{Z(max)}$ (mA) (8)	Z_Z (Ω) (9)	Z_K (Ω) (10)	$\Delta V_{(BR)}$ (V) (11)	V_R (V) (12)	I_R (surge) $T_A = 25°C$ (A) (13)	I_R (μA) (14)	$TCV_{(BR)}$ (%/°C) (15)
01	A3	IN4954	6.8	6.46	7.14	175	700	1.0	1000	0.7	5.2	40	150	0.05
02	A10	IN4954	6.8	6.46	7.14	175	700	1.0	1000	0.7	5.2	40	150	0.05
03	A3	IN4955	7.5	7.13	7.85	175	630	1.5	800	0.7	5.7	32	100	0.06
04	A10	IN4955	7.5	7.13	7.85	175	630	1.5	800	0.7	5.7	32	100	0.06
05	A3	IN4956	8.2	7.79	8.61	150	580	1.5	600	0.7	6.2	24	50	0.06
06	A10	IN4956	8.2	7.79	8.61	150	580	1.5	600	0.7	6.2	24	50	0.06
07	A3	IN4957	9.1	8.65	9.55	150	520	2.0	400	0.7	6.9	22	25	0.06
08	A10	IN4957	9.1	8.65	9.55	150	520	2.0	400	0.7	6.9	22	25	0.06
09	A3	IN4958	10	9.50	10.50	125	475	2.0	125	0.8	7.6	20	25	0.07
10	A10	IN4958	10	9.50	10.50	125	475	2.0	125	0.8	7.6	20	25	0.07
11	A3	IN4959	11	10.45	11.55	125	430	2.5	130	0.8	8.4	19	10	0.07
12	A10	IN4959	11	10.45	11.55	125	430	2.5	130	0.8	8.4	19	10	0.07
13	A3	IN4960	12	11.40	12.60	100	395	2.5	140	0.8	9.1	18	10	0.07
14	A10	IN4960	12	11.40	12.60	100	395	2.5	140	0.8	9.1	18	10	0.07
15	A3	IN4961	13	12.35	13.65	100	365	3.0	145	0.9	9.9	16	10	0.08
16	A10	IN4961	13	12.35	13.65	100	365	3.0	145	0.9	9.9	16	10	0.08
17	A3	IN4962	15	14.25	15.75	75	315	3.5	150	1.0	11.4	12	5.0	0.08
18	A10	IN4962	15	14.25	15.75	75	315	3.5	150	1.0	11.4	12	5.0	0.08
19	A3	IN4963	16	15.20	16.80	75	294	3.5	155	1.1	12.2	10	5.0	0.08
20	A10	IN4963	16	15.20	16.80	75	294	3.5	155	1.1	12.2	10	5.0	0.08
21	A3	IN4964	18	17.10	18.90	65	264	4.0	160	1.2	13.7	9.0	5.0	0.085
22	A10	IN4964	18	17.10	18.90	65	264	4.0	160	1.2	13.7	9.0	5.0	0.085

TABLE 1(a) - TYPE VARIANTS (CONTINUED)

Variant (1)	Lead Material and Finish (2)	Based on Type (3)	$V_{(BR)}$ Nom. (V) (4)	$V_{(BR)}$ Min. (V) (5)	$V_{(BR)}$ Max. (V) (6)	I_Z (mA) (7)	$I_{Z(max)}$ (mA) (8)	Z_Z (Ω) (9)	Z_K (Ω) (10)	$\Delta V_{(BR)}$ (V) (11)	V_R (V) (12)	I_R (surge) $T_A = 25°C$ (A) (13)	I_R (μA) (14)	$TCV_{(BR)}$ (%/°C) (15)
23	A3	IN4965	20	19.0	21.0	65	237	4.5	165	1.5	15.2	8.0	2.0	0.085
24	A10	IN4965	20	19.0	21.0	65	237	4.5	165	1.5	15.2	8.0	2.0	0.085
25	A3	IN4966	22	20.9	23.1	50	216	5.0	170	1.8	16.7	7.0	2.0	0.085
26	A10	IN4966	22	20.9	23.1	50	216	5.0	170	1.8	16.7	7.0	2.0	0.085
27	A3	IN4967	24	22.8	25.8	50	198	5.0	175	2.0	18.2	6.5	2.0	0.09
28	A10	IN4967	24	22.8	25.8	50	198	5.0	175	2.0	18.2	6.5	2.0	0.09
29	A3	IN4968	27	25.7	28.3	50	176	6.0	180	2.0	20.6	6.0	2.0	0.09
30	A10	IN4968	27	25.7	28.3	50	176	6.0	180	2.0	20.6	6.0	2.0	0.09
31	A3	IN4969	30	28.5	31.5	40	158	8.0	190	2.5	22.8	5.5	2.0	0.09
32	A10	IN4969	30	28.5	31.5	40	158	8.0	190	2.5	22.8	5.5	2.0	0.09
33	A3	IN4970	33	31.4	34.6	40	144	10	200	2.8	25.1	5.0	2.0	0.095
34	A10	IN4970	33	31.4	34.6	40	144	10	200	2.8	25.1	5.0	2.0	0.095
35	A3	IN4971	36	34.2	37.8	30	132	11	220	3.0	27.4	4.5	2.0	0.095
36	A10	IN4971	36	34.2	37.8	30	132	11	220	3.0	27.4	4.5	2.0	0.095
37	A3	IN4972	39	37.1	40.9	30	122	14	230	3.0	29.7	4.0	2.0	0.095
38	A10	IN4972	39	37.1	40.9	30	122	14	230	3.0	29.7	4.0	2.0	0.095
39	A3	IN4973	43	40.9	45.1	30	110	20	240	3.3	32.7	3.5	2.0	0.095
40	A10	IN4973	43	40.9	45.1	30	110	20	240	3.3	32.7	3.5	2.0	0.095
41	A3	IN4974	47	44.7	49.3	25	100	25	250	3.5	35.8	3.2	2.0	0.095
42	A10	IN4974	47	44.7	49.3	25	100	25	250	3.5	35.8	3.2	2.0	0.095
43	A3	IN4975	51	48.5	53.5	25	92	27	270	4.0	38.8	3.0	2.0	0.095
44	A10	IN4975	51	48.5	53.5	25	92	27	270	4.0	38.8	3.0	2.0	0.095

TABLE 1(a) - TYPE VARIANTS (CONTINUED)

Variant (1)	Lead Material and Finish (2)	Based on Type (3)	$V_{(BR)}$ Nom. (V) (4)	$V_{(BR)}$ Min. (V) (5)	$V_{(BR)}$ Max. (V) (6)	I_Z (mA) (7)	$I_{Z(max)}$ (mA) (8)	Z_Z (Ω) (9)	Z_K (Ω) (10)	$\Delta V_{(BR)}$ (V) (11)	V_R (V) (12)	I_R (surge) $T_A = 25°C$ (A) (13)	I_R (μA) (14)	$TCV_{(BR)}$ (%/°C) (15)
45	A3	IN4976	56	53.2	58.8	20	84	35	320	4.4	42.6	2.8	2.0	0.095
46	A10	IN4976	56	53.2	58.8	20	84	35	320	4.4	42.6	2.8	2.0	0.095
47	A3	IN4977	62	58.9	65.1	20	76	42	400	5.0	47.1	2.5	2.0	0.100
48	A10	IN4977	62	58.9	65.1	20	76	42	400	5.0	47.1	2.5	2.0	0.100
49	A3	IN4978	68	64.6	71.4	20	70	50	500	5.5	51.7	2.2	2.0	0.100
50	A10	IN4978	68	64.6	71.4	20	70	50	500	5.5	51.7	2.2	2.0	0.100
51	A3	IN4979	75	71.3	78.7	20	63	55	620	6.0	56.0	2.0	2.0	0.100
52	A10	IN4979	75	71.3	78.7	20	63	55	620	6.0	56.0	2.0	2.0	0.100
53	A3	IN4980	82	77.9	86.1	15	58	80	720	6.6	62.2	1.8	2.0	0.100
54	A10	IN4980	82	77.9	86.1	15	58	80	720	6.6	62.2	1.8	2.0	0.100
55	A3	IN4981	91	86.5	95.5	15	52.5	90	760	7.5	69.2	1.6	2.0	0.100
56	A10	IN4981	91	86.5	95.5	15	52.5	90	760	7.5	69.2	1.6	2.0	0.100
57	A3	IN4982	100	95.0	105	12	47.5	110	800	8.0	76.0	1.4	2.0	0.100
58	A10	IN4982	100	95.0	105	12	47.5	110	800	8.0	76.0	1.4	2.0	0.100
59	A3	IN4983	110	104.5	115.5	12	43.0	125	1000	9.0	83.6	1.2	2.0	0.100
60	A10	IN4983	110	104.5	115.5	12	43.0	125	1000	9.0	83.6	1.2	2.0	0.100
61	A3	IN4984	120	114.0	126.0	10	39.5	170	1150	10.0	91.2	1.0	2.0	0.100
62	A10	IN4984	120	114.0	126.0	10	39.5	170	1150	10.0	91.2	1.0	2.0	0.100
63	A3	IN4985	130	123.5	136.5	10	36.6	190	1250	11	98.8	0.8	2.0	0.105
64	A10	IN4985	130	123.5	136.5	10	36.6	190	1250	11	98.8	0.8	2.0	0.105
65	A3	IN4986	150	142.5	157.5	8.0	31.6	330	1500	13	114.0	0.75	2.0	0.105
66	A10	IN4986	150	142.5	157.5	8.0	31.6	330	1500	13	114.0	0.75	2.0	0.105

TABLE 1(a) - TYPE VARIANTS (CONTINUED)

Variant (1)	Lead Material and Finish (2)	Based on Type (3)	$V_{(BR)}$ Nom. (V) (4)	$V_{(BR)}$ Min. (V) (5)	$V_{(BR)}$ Max. (V) (6)	I_Z (mA) (7)	$I_{Z(max)}$ (mA) (8)	Z_Z (Ω) (09)	Z_K (Ω) (10)	$\Delta V_{(BR)}$ (V) (11)	V_R (V) (12)	I_R (surge) $T_A = 25°C$ (A) (13)	I_R (μA) (14)	$TCV_{(BR)}$ (%/°C) (15)
67	A3	IN4987	160	152.0	168.0	8.0	29.4	350	1650	14	121.6	0.70	2.0	0.105
68	A10	IN4987	160	152.0	168.0	8.0	29.4	350	1650	14	121.6	0.70	2.0	0.105
69	A3	IN4988	180	171.0	189.0	5.0	26.4	450	1750	16	136.8	0.60	2.0	0.110
70	A10	IN4988	180	171.0	189.0	5.0	26.4	450	1750	16	136.8	0.60	2.0	0.110
71	A3	IN4989	200	190.0	210.0	5.0	23.6	500	1850	18	152.0	0.50	2.0	0.110
72	A10	IN4989	200	190.0	210.0	5.0	23.6	500	1850	18	152.0	0.50	2.0	0.110
73	A3	IN4990	220	209.0	231.0	5.0	21.6	550	2000	19	167.0	0.50	2.0	0.115
74	A10	IN4990	220	209.0	231.0	5.0	21.6	550	2000	19	167.0	0.50	2.0	0.115
75	A3	IN4991	240	228.0	252.0	5.0	19.8	650	2050	22	182.0	0.40	2.0	0.115
76	A10	IN4991	240	228.0	252.0	5.0	19.8	650	2050	22	182.0	0.40	2.0	0.115
77	A3	IN4992	270	257.0	283.0	5.0	17.5	800	2100	25	206.0	0.35	2.0	0.120
78	A10	IN4992	270	257.0	283.0	5.0	17.5	800	2100	25	206.0	0.35	2.0	0.120
79	A3	IN4993	300	285.0	315.0	4.0	15.6	950	2150	28	228.0	0.30	2.0	0.120
80	A10	IN4993	300	285.0	315.0	4.0	15.6	950	2150	28	228.0	0.30	2.0	0.120
81	A3	IN4994	330	314.0	346.0	4.0	14.4	1175	2200	32	251.0	0.25	2.0	0.120
82	A10	IN4994	330	314.0	346.0	4.0	14.4	1175	2200	32	251.0	0.25	2.0	0.120
83	A3	IN4995	360	342.0	378.0	3.0	13.0	1400	2300	35	274.0	0.22	2.0	0.120
84	A10	IN4995	360	342.0	378.0	3.0	13.0	1400	2300	35	274.0	0.22	2.0	0.120

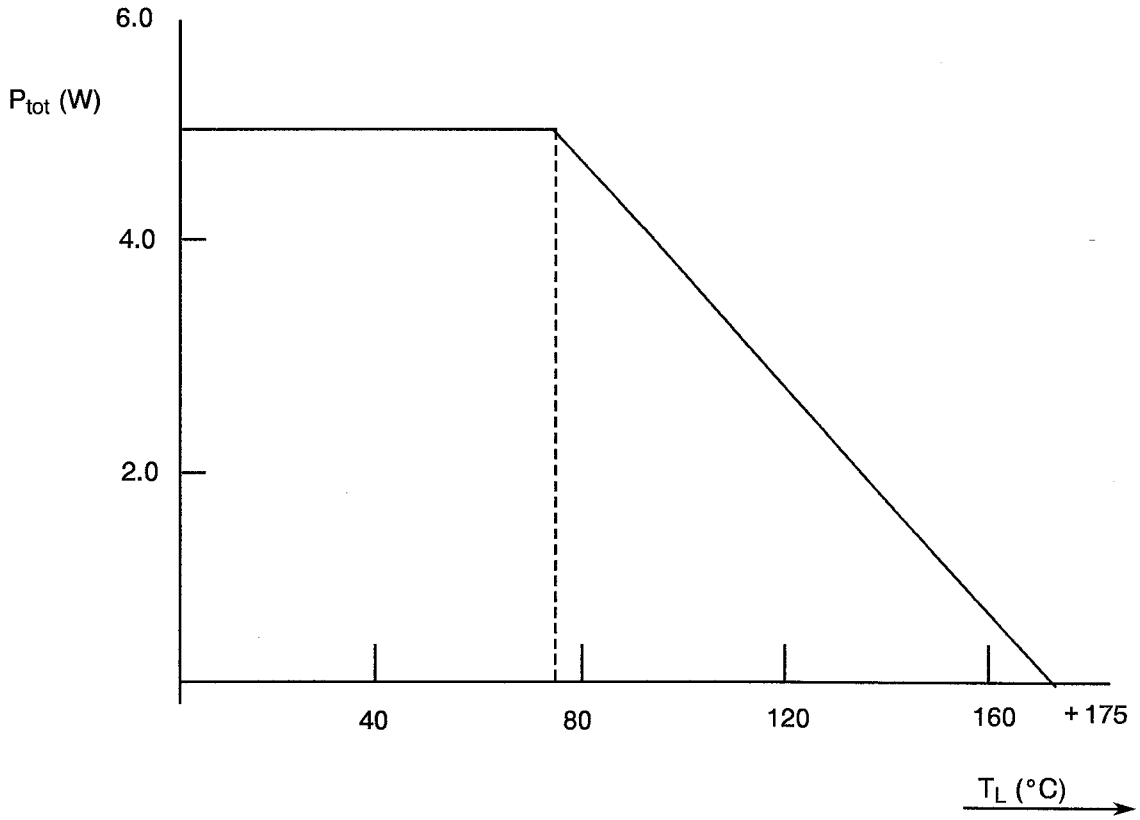
TABLE 1(b) - MAXIMUM RATINGS

No.	CHARACTERISTIC	SYMBOL	MAXIMUM RATING	UNIT	REMARKS
1	Power Dissipation	P_{tot}	5.0	W	See Note 1
2	Operating Temperature Range	T_{op}	−65 to +175	°C	T_{amb}
3	Storage Temperature Range	T_{stg}	−65 to +200	°C	
4	Soldering	T_{sol}	+260	°C	See Note 2

NOTES

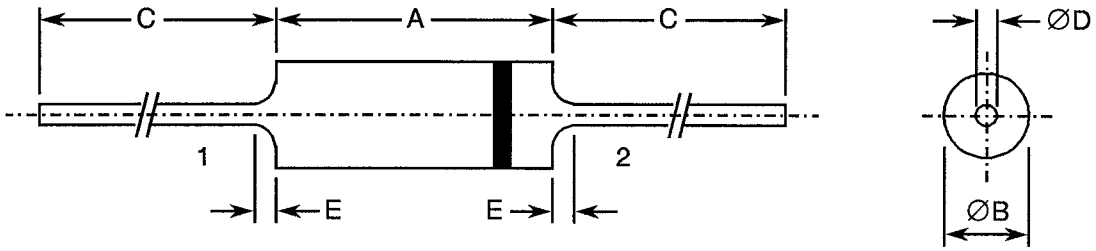
1. For derating characteristics above lead temperature of +75°C see Figure 1.
2. Duration 10 seconds maximum at a distance of not less than 1.5mm from the body, the same lead shall not be resoldered until three minutes have elapsed.

FIGURE 1 - PARAMETER DERATING INFORMATION



Power Dissipation Versus Lead Temperature

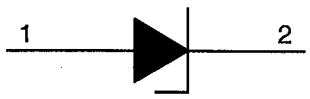
FIGURE 2 - PHYSICAL DIMENSIONS



SYMBOL	INCHES		MILLIMETRES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	0.140	0.300	3.56	8.89	
B	0.090	0.145	2.28	3.68	
C	1.000	1.500	25.40	38.10	1
D	0.033	0.042	0.97	1.07	
E	-	0.050	-	1.27	

NOTES
1. The lead diameter is not controlled between the diode body and 0.050 in. (1.27mm) from the diode body.

FIGURE 3 - FUNCTIONAL DIAGRAM



1. Anode
2. Cathode

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

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-105, Sampling Procedures and Tables for Inspection by Attributes.

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.

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

(b) Para. 9.7, Particle Impact Noise Detection (PIND) Test: Not applicable.

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

(a) Para 7.1.1(a), H.T.R.B. Test: Shall not be performed.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) The Bond Strength Test (Subgroup III) 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 : 22.2 Newtons (5 Pounds).
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

Glass, hermetically sealed.

4.4.2 Lead Material and Finish

The lead material shall be Type 'A' with either Type '3' or Type '10' 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. Each component shall be marked in respect of:-

(a) Lead Identification.

(b) The SCC Component Number.

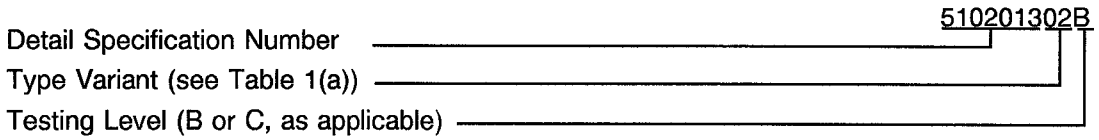
(c) Traceability Information.

4.5.2 Lead Identification

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

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 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 (Figure 4)

Not applicable.

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 values (Δ) applicable to the parameters scheduled, shall not be exceeded. In addition to these drift value requirements, the appropriate limit value specified for a given parameter in Table 2 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 of this specification.

4.7.3 Electrical Circuits for Burn-in (Figure 5)

Not applicable.

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	Breakdown Voltage (Pulsed)	$V_{(BR)}$	4022	I_Z = (1) mA	(2)	(3)	V
2	Reverse Current	I_R	4016	V_R = (4) V	-	(5)	µA
3	Forward Voltage	V_F	4011	I_F = 1.0A	-	1.5	V

NOTES
1. See Column 7)
2. See Column 5)
3. See Column 6) of Table 1(a)
4. See Column 12)
5. See Column 14)

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

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITION	LIMITS		UNIT
					MIN.	MAX.	
1	Small Signal Breakdown Impedance	Z_Z	4051	I_Z = (1) I_{sig} = 10% I_Z	-	(2)	Ω
2	Small Signal Breakdown Impedance	Z_K	4051	I_Z = 1.0mA I_{sig} = 0.1mA	-	(3)	Ω

NOTES
1. See Table 1(a), Column 7.
2. See Table 1(a), Column 9.
3. See Table 1(a), Column 10.

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITION	LIMITS		UNIT
					MIN.	MAX.	
1	Temperature Coeff. of Breakdown Voltage	$TCV_{(BR)}$	4071	T_{amb} = -55/ + 25/ + 100 °C I_Z = (2)	-	(3)	%/°C

NOTES
1. Temperature shall be measured at a distance of 0.375in., (9.5 mm) from the point where the lead exits from the diode body.
2. See Table 1(a), Column 7.
3. See Table 1(a), Column 15.

TABLE 4 - PARAMETER DRIFT VALUES

No.	CHARACTERISTICS	SYMBOL	MIL-STD-750 TEST METHOD	TEST CONDITION	CHANGE LIMITS (Δ)	UNIT
1	Breakdown Voltage	$V_{(BR)}$	4022	I_Z = (1) mA	±3.5	%
2	Reverse Current	I_R	4016	V_R = (2)	±250 or (3) ±100	nA %

NOTES
1. See Table 1(a), Column 7.
2. See Table 1(a), Column 12.
3. Whichever is greater referred to the initial value.

TABLE 5 - CONDITIONS FOR BURN-IN

No.	CHARACTERISTICS	SYMBOL	CONDITION	UNIT
1	Lead Temperature	T_L	+ 95	°C
2	Zener Current	I_Z	40% $I_{Z(MAX)}$ (1)	mA
3	Duration	-	168	Hours
4	Test Method of MIL-STD-750 Method 1038	-	A	-

NOTES
1. See Table 1(a), Column 8.

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	MIL-STD-750 TEST METHOD	TEST CONDITIONS	LIMITS		UNIT
					MIN.	MAX.	
1	Breakdown Voltage	$V_{(BR)}$	4022	I_Z = (1)	(3)	(2)	V
2	Reverse Current	I_R	4016	V_R = (4)	(5)	-	µA

NOTES
1. See Table 1(a), Column 7.
2. See Table 1(a), Column 5.
3. See Table 1(a), Column 6.
4. See Table 1(a), Column 12.
5. See Table 1(a), Column 14.