CAPACITORS, LEADLESS SURFACE MOUNTED, TANTALUM, SOLID ELECTROLYTE

BASED ON TYPE CTC21

ESCC Detail Specification No. 3012/002

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DCR No.	CHANGE DESCRIPTION
1003	Specification upissued to incorporate editorial change per DCR.

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1 GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Capacitors, Leadless Surface Mounted, Tantalum, Solid Electrolyte, based on Type CTC21. It shall be read in conjunction with ESCC Generic Specification No. 3012, the requirements of which are supplemented herein.

1.2 RANGE OF COMPONENTS AND TYPE VARIANTS

The range of capacitors covered by this specification is given in Table 1(a) and the Type Variants are given in Para. 4.4.2.

1.3 MAXIMUM RATINGS

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

1.4 PARAMETER DERATING INFORMATION

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

1.5 PHYSICAL DIMENSIONS

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

1.6 FUNCTIONAL DIAGRAM

The functional diagram of the capacitors specified herein, is shown in Figure 3.

2 APPLICABLE DOCUMENTS

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

(a) ESCC Generic Specification No. 3012 for Capacitors, Leadless Surface Mounted, Tantalum, Solid Electrolyte, Enclosed Anode Connection.

3 TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. 21300 shall apply. In addition, the following symbols are used:

V_T = Test Voltage.

TABLE 1(a) – RANGE OF COMPONENTS

(1) Rated Voltage (U_R) (V)	(2) Capacitance Value (C) (µF)	(3) Tolerance (± %)	DC Leakage Current (I_L)			Dissipation Factor (DF)			(10) ESR max 500kHz +25ºC (mΩ)	(11) Ripple Current 500kHz +25ºC (max) (1) (A)	(12) Ripple Current 1.0kHz +25ºC (max) (1) (A)	(13) Case Size	(14) Max. Weight (g)
			(4) +25ºC (µA)	(5) +85ºC (µA)	(6) +125ºC (µA)	(7) -55ºC (%)	(8) +25ºC (%)	(9) +85ºC and +125ºC (%)					
6.3	120	10, 20	7.6	76	95	16	8	12	40	3.2	2.5	C	1.8
6.3	150	10, 20	9.4	94	117	20	10	15	35	3.3	2	C	1.8
6.3	270	10, 20	17	170	212	20	10	15	30	4.1	3.4	D	3.3
6.3	330	10, 20	20.8	209	260	24	12	18	25	4.3	3.8	D	3.3
10	82	10, 20	8.2	82	102	16	8	12	45	2.9	1.8	C	1.8
10	100	10, 20	10	100	125	16	8	12	40	3	2.2	C	1.8
10	180	10, 20	18	180	225	16	8	12	35	3.7	3.4	D	3.3
10	220	10, 20	22	220	275	20	10	15	30	3.9	3.4	D	3.3
16	56	10, 20	8.9	89	111	12	6	9	55	2.6	1.8	C	1.8
16	68	10, 20	10.8	108	135	12	6	9	50	2.7	2.2	C	1.8
16	120	10, 20	19.2	192	240	16	8	12	40	3.5	2.8	D	3.3
16	150	10, 20	24	240	300	16	8	12	35	3.6	3.1	D	3.3
20	39	10, 20	7.8	78	97	10	5	7.5	65	2.4	1.7	C	1.8
20	47	10, 20	9.4	94	117	12	6	9	60	2.5	1.8	C	1.8
20	82	10, 20	16.4	164	205	12	6	9	45	3.1	2.5	D	3.3
20	100	10, 20	20	200	250	16	8	12	40	3.3	2.5	D	3.3
25	27	10, 20	6.7	67	83	10	5	7.5	75	2.2	1.2	C	1.8
25	33	10, 20	8.2	82	102	10	5	7.5	70	2.3	1.4	C	1.8
25	56	10, 20	14	140	175	12	6	9	55	2.9	2.2	D	3.3

(1) Rated Voltage (U_R) (V)	(2) Capacitance Value (C) (µF)	(3) Tolerance (± %)	DC Leakage Current (I_L)			Dissipation Factor (DF)			(10) ESR max 500kHz +25ºC (mΩ)	(11) Ripple Current 500kHz +25ºC (max) (1) (A)	(12) Ripple Current 1.0kHz +25ºC (max) (1) (A)	(13) Case Size	(14) Max. Weight (g)
			(4) +25ºC (µA)	(5) +85ºC (µA)	(6) +125ºC (µA)	(7) -55ºC (%)	(8) +25ºC (%)	(9) +85ºC and +125ºC (%)					
25	68	10, 20	17	170	212	12	6	9	50	3	2.4	D	3.3
40	22	10, 20	8.8	88	110	8	4	6	85	2.1	1.5	C	1.8
40	33	10, 20	13.2	132	165	10	5	7.5	70	2.5	1.9	D	3.3
40	47	10, 20	18.8	188	235	10	5	7.5	60	2.7	2.2	D	3.3
50	15	10, 20	7.5	75	93	6	3	4.5	100	1.9	1.4	C	1.8
50	18	10, 20	9	90	112	8	4	6	90	2	1.4	C	1.8
50	22	10, 20	11	110	137	8	4	6	85	2.3	1.7	D	3.3
63	5.6	10, 20	3.5	35	44	6	3	4.5	155	1.5	0.6	C	1.8
63	6.8	10, 20	4.2	42	53	6	3	4.5	140	1.6	0.7	C	1.8
63	8.2	10, 20	5.1	51	64	6	3	4.5	130	1.6	0.9	C	1.8
63	10	10, 20	6.3	63	78	6	3	4.5	120	1.7	1.1	C	1.8
63	18	10, 20	11.3	113	141	8	4	6	90	2.1	1.5	D	3.3
63	22	10, 20	13.8	138	173	8	4	6	85	2.3	1.7	D	3.3

NOTES:

1. At $T_{amb} \leq +25ºC$. For derating at $T_{amb} > +25ºC$, see Figure 1(a).

TABLE 1(b) – MAXIMUM RATINGS

No.	Characteristics	Symbol	Maximum Ratings	Units	Remarks
1	Rated Voltage	U_R	See Table 1(a), Column 1	Vdc	Note 1
2	Surge Voltage	U_S	1.3 x U_R	Vdc	≤ 85°C
3	Category Voltage	U_C	0.66 x U_R	Vdc	
4	Operating Temperature Range	T_{op}	-55 to +125	°C	T_{amb}
5	Rated Temperature	T_r	+85	°C	
6	Category Temperature	T_C	+125	°C	
7	Storage Temperature Range	T_{stg}	-55 to +125	°C	
8	Soldering Temperature	T_{sol}	+260	°C	Note 2

NOTES:
1. At T_{amb} ≤ +25°C. For derating at T_{amb} > +25°C, see Figure 1(b).
2. Soldering time 10 seconds maximum for reflow soldering.

FIGURE 1 – PARAMETER DERATING INFORMATION

FIGURE 1(a) - RIPPLE CURRENT VERSUS TEMPERATURE

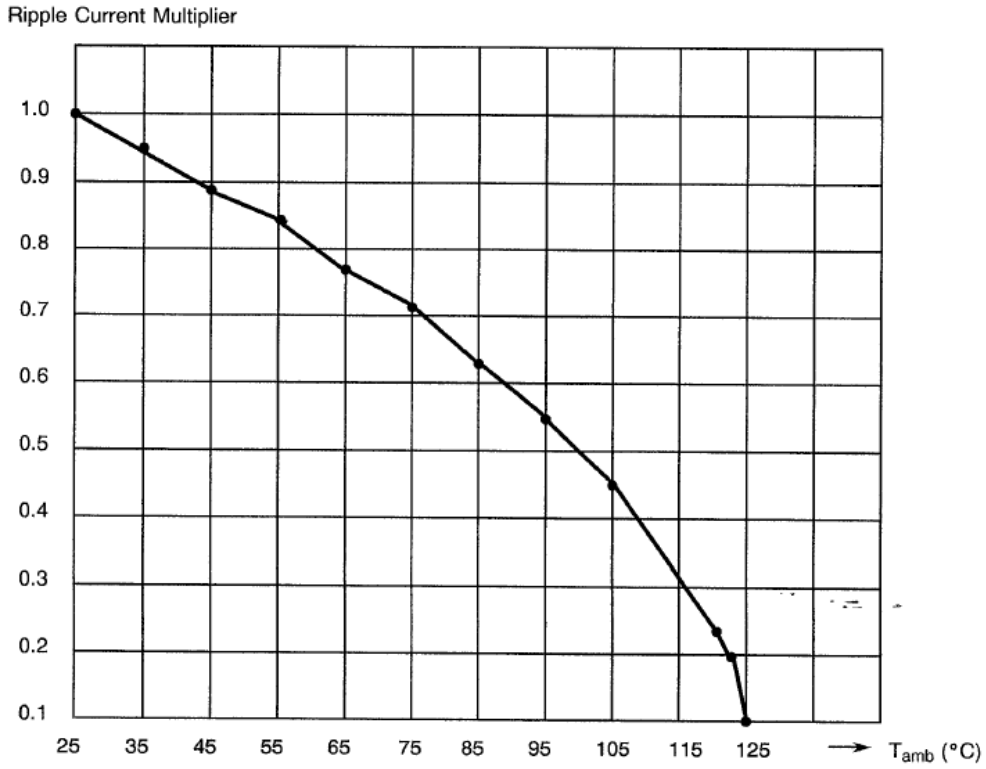


FIGURE 1(b) - RATED VOLTAGE VERSUS TEMPERATURE

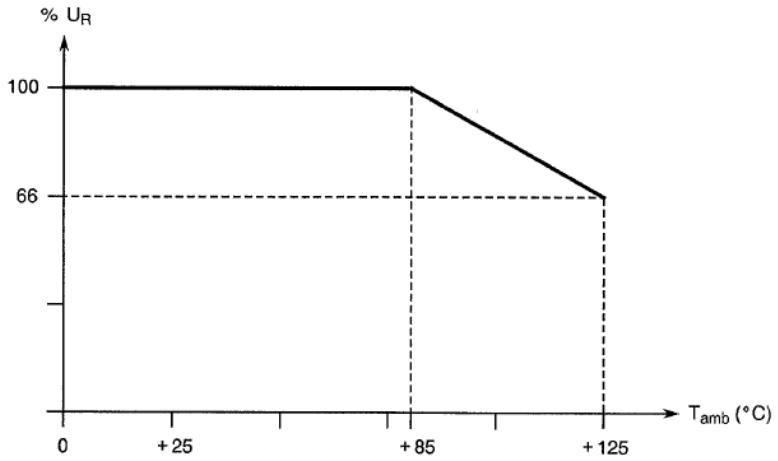
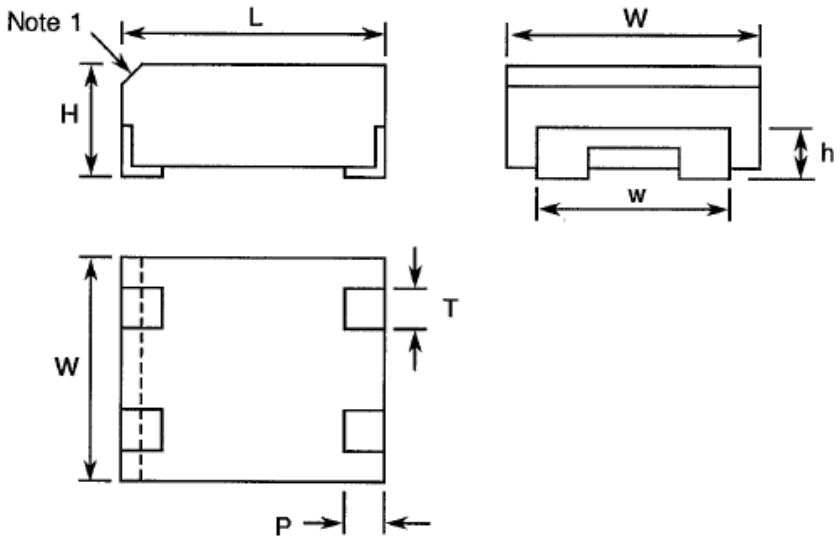


FIGURE 2 – PHYSICAL DIMENSIONS

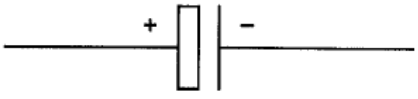


CASE SIZE	DIMENSIONS (mm)												
	L		W		H		w		P		T		h
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
C	10.9	11.9	8.9	9.5	4.4	5.4	6.7	7.3	1.2	1.8	1.7	2.3	2
D	10.9	11.9	12.4	13	5.4	6.4	10.2	10.8	1.2	1.8	2.7	3.3	2

NOTES:

1. Chamfer is 0.8mm at 45° and indicates the positive end.

FIGURE 3 – FUNCTIONAL DIAGRAM



4 REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the capacitors specified herein shall be as stated in this specification and ESCC Generic Specification No. 3012 for Capacitors, Leadless Surface Mounted, Tantalum, Solid Electrolyte, Enclosed Anode Connection. 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 ESCC 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. 9.4.4, Electrical Measurements at Room Temperature:
- Capacitance and Dissipation factor shall be measured at 1kHz ±50Hz.
- ESR shall be measured as specified in Table 2.

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

(a) Para. 9.4.4, Electrical Measurements at Room Temperature:
- Capacitance and Dissipation factor shall be measured at 1kHz ±50Hz.
- ESR shall be measured as specified in Table 2.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) An additional subgroup of 12 components shall be added to Chart IV (total 104 components).
This subgroup shall be submitted to a ripple current test as follows:
- The capacitors shall be mounted and placed in a still air enclosure at room temperature. A sinusoidal AC voltage (100kHz ±2kHz) shall be superimposed on 50% of rated DC voltage so that the peak voltages do not exceed the value of the rated DC voltage of the capacitor. Rated ripple current (see Column 11 of Table 1(a)) shall be applied continuously, except for measurement periods, for a duration of 240 hours.
- The DC voltage shall be supplied by a regulated power supply, free from surges, having a low internal resistance, and shall be applied to each capacitor through a separate resistor. DC power supply regulation shall remain within ±2% or less. AC power supply shall be within ±5% of current with less than 10% distortion.
- After testing, the capacitors shall be examined for evidence of mechanical damage and shall be measured in accordance with Table 2 of this specification.
- 1 failure is allowed for this subgroup.

(b) Para. 9.19, Solderability: The solderable area is the termination 'pad' and up to 1/3 the height of the tab.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) An additional subgroup of 12 components shall be added to Level 1 (total of 34 components).
This subgroup shall be submitted to a ripple current test as specified in Para. 4.2.4.

(b) Para. 9.19, Solderability: The solderable area is the termination 'pad' and up to 1/3 the height of the tab.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check
The dimensions of the components specified herein shall be verified in accordance with the requirements set out in Para. 9.6 of ESCC Generic Specification No. 3012. They shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight
The maximum weight of the capacitors specified herein shall be as follows:

Case Size 'C': 1.8 grammes.

Case Size 'D': 3.3 grammes.

4.3.3 Adhesion
The requirements for adhesion are specified in Para. 9.10 of ESCC Generic Specification No. 3012.

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 components 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 epoxy moulding.

4.4.2 Termination Material and Finish
The terminations shall be brass.

The termination finishes shall be Type '9' (Variant 01), Type ‘10’ (Variant 03) and Type 18 (Variant 04) in accordance with the requirements of ESCC 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 ESCC Basic Specification No. 21700 and the following paragraphs. When the component is too small to accommodate all the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany each component in its primary package.

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

(a) Polarity.
(b) The ESCC Component Number.
(c) Electrical Characteristics and Ratings.
(d) Traceability Information.

4.5.2 Polarity
Polarity shall be defined by a chamfer on the positive end of the body of the capacitor.

4.5.3 The ESCC Component Number

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

Example: 301200201B

- Detail Specification Number: 3012002
- Type Variant (see Note): 01
- Testing Level (B or C, as applicable): B

NOTE:
For Type Variants, see Para. 4.4.2.

4.5.4 Electrical Characteristics and Ratings

The electrical characteristics and ratings to be marked, in the following order of precedence, are:
(a) Capacitance value.
(b) Tolerance.
(c) Rated voltage

The information shall be constituted and marked as follows:

Example: 127KB

- Capacitance Value (120000000pF): 127
- Tolerance (±10%): K
- Rated Voltage (6.3V): B

4.5.4.1 Capacitance Values

The capacitance values shall be expressed by means of the following codes. The unit quantity for marking shall be picofarads (pF).

Capacitance Value (pF)	Code
$XX10^5$	XX5
$XX10^6$	XX6
$XX10^7$	XX7

4.5.4.2 Tolerance

The tolerance on capacitance shall be indicated by the code letters specified hereafter:

Tolerance (± %)	Code Letter
10	K
20	M

4.5.4.3 Rated Voltage

The rated voltage shall be indicated by the code letters specified hereafter:

Rated Voltage (V)	Code Letter
6.3	B
10	D
16	E
20	F
25	G
40	K
50	L
63	N

4.5.5 Traceability Information
Each component shall be marked in respect of traceability information in accordance with the requirements of ESCC 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 specified, the measurements shall be performed at T_{amb} = +22 ±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 1)
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, measurements shall be performed at T_{amb} = +22 ±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 Burn-in
The requirements for burn-in are specified in Section 7 of ESCC Generic Specification No. 3012. The conditions for burn-in shall be as specified in Table 5(a) of this specification.

4.7.3 Electrical Circuit for Burn-in (Figure 5)
Not applicable.

TABLE 1 – ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	Characteristics	Symbol	ESCC 3012 Test Method	Test Conditions	Limits		Unit
					Min.	Max.	
1	Capacitance	C	Para. 9.4.1.1	f = 1000 ±50Hz $V_p \leq 2.2V$ $V_m \leq 1Vrms$	Note 1		µF
2	DC Leakage Current	I_L	Para. 9.4.1.2	$V_m = U_R$ ±2% R_S = 1.0kΩ	-	Note 2	µA
3	Dissipation Factor	DF	Para. 9.4.1.3	f = 1000 ±50Hz	-	Note 3	%
4	Equivalent Series Resistance	ESR	-	f = 500 ±5kHz $V_p \leq 2.2V$ Vac_{max} : 0.5Vrms	-	Note 4	mΩ

NOTES:
1. See Columns 2 and 3 of Table 1(a).
2. See Column 4 of Table 1(a).
3. See Column 8 of Table 1(a).
4. See Column 10 of Table 1(a).

TABLE 2 – ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURE

No.	Characteristics	Symbol	ESCC 3012 Test Method	Test Conditions (Note 1)	Limits		Unit
					Min.	Max.	
1	Capacitance Change	ΔC/C	Para. 9.4.1.1	f = 1000 ±50Hz V_p ≤ 2.2V V_m ≤ 1Vrms T_{amb} = -55°C T_{amb} = +85°C T_{amb} = +125°C	 -10 -8 -12	 +10 +8 +12	% (2)
2	DC Leakage Current	I_L	Para. 9.4.1.2	R_S = 1.0kΩ T_{amb} = +85 °C V_m = U_R ±2% T_{amb} = +125°C V_m = 0.67U_R	 - -	 Note 3 Note 4	µA
3	Dissipation Factor	DF	Para. 9.4.1.3	f = 1000 ±50Hz T_{amb} = -55°C T_{amb} = +85°C T_{amb} = +125°C	 - - -	 Note 5 Note 6 Note 6	%

NOTES:
1. Inspection level II, single sampling, AQL 0.65% of IEC Publication No. 410 for each capacitance value. Each capacitance value shall be considered as constituting a complete lot.
2. With respect to the values measured in Table 2.
3. See Column 5 of Table 1(a).
4. See Column 6 of Table 1(a).
5. See Column 7 of Table 1(a).
6. See Column 9 of Table 1(a).

FIGURE 4 – CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable

TABLE 3 – PARAMETER DRIFT VALUES

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits (Δ)	Unit
1	Capacitance Change	ΔC/C	As per Table 2	As per Table 2	±5	%
2	DC Leakage Current Change	$\Delta I_L/I_L$	As per Table 2	As per Table 2	Notes 1 and 2	µA

NOTES:
1. Leakage currents < 0.1µA are considered as a 0.1µA value.
2. 2x initial value measured or (0.25x Table 2 Item 2) +0.05µA, whichever is smaller.

TABLE 4 – CONDITIONS FOR BURN-IN AND OPERATING LIFE TESTS

TABLE 5(a) - CONDITIONS FOR BURN-IN

No.	Characteristics	Symbol	Conditions	Unit
1	Ambient Temperature	T_{amb}	+85 (+0 -3)	°C
2	Test Voltage	V_T	U_R	V

TABLE 5(b) - CONDITIONS FOR OPERATING LIFE TESTS

No.	Characteristics	Symbol	Conditions	Unit
1	Ambient Temperature 1	T_{amb1}	+85 (+0 -3)	°C
2	Test Voltage 1	V_{T1}	U_R	V
3	Ambient Temperature 2	T_{amb2}	+125 (+0 -3)	°C
4	Test Voltage 2	V_{T2}	U_C	V

FIGURE 5 – ELECTRICAL CIRCUIT FOR BURN-IN AND OPERATING LIFE TESTS

Not applicable.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESCC GENERIC SPECIFICATION No. 3012)

4.8.1 Measurements and Inspections on Completion of Environmental Tests
The parameters to be measured and inspections to be performed on completion of environmental tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3°C.

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests
The parameters to be measured and inspections to be performed at intermediate points during endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3°C.

4.8.3 Measurements and Inspections on Completion of Endurance Tests
The parameters to be measured and inspections to be performed on completion of endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3°C.

4.8.4 Conditions for Operating Life Tests (Part of Endurance Testing)
The requirements for operating life testing are specified in Section 9 of ESCC Generic Specification No. 3012. The conditions for operating life testing shall be as specified in Table 5(b) of this specification.

4.8.5 Electrical Circuit for Operating Life Tests (Figure 5)
Not applicable.

TABLE 5 - MEASUREMENTS AND INSPECTION ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AN ON COMPLETION OF ENDURANCE TESTING

No.	ESCC Generic Spec. No. 3012		Measurements and Inspections		Symbols	Limits		Units
	Environmental and Endurance Tests (Note 1)	Test Methods and Conditions	Identification	Conditions		Min	Max	
01	Mounting	Para. 9.9	**Final Examination**					
			Terminals	Good tinning	-	-	-	-
			Final Measurements					
			Capacitance	Table 2 Item 1	C	Record Values		
			DC Leakage Current	Table 2 Item 2	I_L	-	Table 2	
			Dissipation Factor	Table 2 Item 3	DF	-	Table 2	
02	Rapid Change of Temperature	Para. 9.3.2	**Initial Measurements**					
			Capacitance	Value recorded in 01	C	Table 2 Item 1		
			Final Measurements	Recovery period of 4 hours min.				
			Visual Examination	-	-	-	-	-
			Capacitance Change	Table 2 Item 1	ΔC/C	-5	+5	%
			DC Leakage Current	Table 2 Item 2	I_L	-	Table 2	
			Dissipation Factor	Table 2 Item 3	DF	-	Table 2	
03	External Visual Inspection	Para. 9.5	**Final Inspection**					
			Visual Inspection	ESCC No. 20500	-	-	-	-
04	Adhesion	Para. 9.10	**Initial Measurements**					
			Capacitance	Value recorded in 01	C	Table 2 Item 1		
			Final Measurements					
			Visual Examination	No damage or loosening from the substrate	-	-	-	-
			Capacitance Change	Table 2 Item 1	ΔC/C	-5	+5	%
05	Vibration	Para. 9.11	**Measurements during test**	During Last Cycle				
				No Intermittent Contact > 0.5ms, arcing or open or shorts	-	-	-	-
			Final Examination					
			Visual Examination	No damage	-	-	-	-
06	Shock or Bump	Para. 9.12	**Final Examination**					
			Visual Examination	No damage	-	-	-	-

No.	ESCC Generic Spec. No. 3012		Measurements and Inspections		Symbols	Limits		Units
	Environmental and Endurance Tests (Note 1)	Test Methods and Conditions	Identification	Conditions		Min	Max	
07	Climatic Sequence	Para. 9.13	**Initial Measurements**					
			Capacitance	Value recorded in 01	C	Table 2 Item 1		
				After Dry Heat (2)				
			DC Leakage Current	Table 3 Item 2	I_L	-	Table 3	
			Final Measurements	After recovery of 1 to 24 hours				
			Visual Inspection	ESCC No. 20500	-	-	-	-
			Capacitance Change	Table 2 Item 1	ΔC/C	-10	+10	%
			DC Leakage Current	Table 2 Item 2	I_L	-	Table 2	
			Dissipation Factor	Table 2 Item 3	DF	-	(3)	
08	High and Low Temperature Stability	Para. 9.14	**Measurements during test**					
			Electrical Measurements	Tables 2 & 3	-	Tables 2 & 3		
09	Surge Voltage	Para. 9.15	**Final Measurements**					
			Capacitance	Table 2 Item 1	C	-10	+10	% (4)
			DC Leakage Current	Table 2 Item 2	I_L	-	Table 2	
			Dissipation Factor	Table 2 Item 3	DF	-	Table 2	
10	Damp Heat Steady State	Para. 9.16	**Initial Measurements**					
			Capacitance	Table 2 Item 1	C	Table 2		
			Final Measurements	After recovery of 1 to 2 hours				
			Visual Examination	-	-	-	-	-
			Capacitance Change	Table 2 Item 1	ΔC/C	-10	+10	%
			DC Leakage Current	Table 2 Item 2	I_L	-	Table 2	
			Dissipation Factor	Table 2 Item 3	DF	-	(3)	

No.	ESCC Generic Spec. No. 3012		Measurements and Inspections		Symbols	Limits		Units
	Environmental and Endurance Tests (Note 1)	Test Methods and Conditions	Identification	Conditions		Min	Max	
11	Operating Life	Para. 9.17	**Initial Measurements**					
			Capacitance	Value recorded in 01	C	Table 2 Item 1		
			Intermediate Measurements at 250 and 1000 hrs					
			DC Leakage Current (2)	Table 3 Item 2	I_L	-	(5)	
			Final Measurements at 1000 and 2000 hrs	After recovery or 1 to 2 hours				
			Capacitance Change	Table 2 Item 1	ΔC/C	-10	+10	%
			DC Leakage Current	Table 2 Item 2	I_L	-	(6)	
			Dissipation Factor	Table 2 Item 3	DF	-	(7)	%
			Visual Examination	No damage	-	-	-	-
12	Permanence of Marking	Para. 9.18	**Final Examination**					
			Visual Examination	No corrosion or obliteration of marking	-	-	-	-
13	Solderability	Para. 9.19 and Para. 4.2.4 of this spec	**Final Examination**					
			Visual Examination	No damage	-	-	-	-

NOTES:

1. The tests in this Table refer to either Chart IV or V and shall be used as applicable.
2. While still at the high temperature.
3. 1.2x the value specified in Table 2 of this specification.
4. Compared to the values measured in Table 2 of this specification.
5. 1.25x the value specified in Table 3 of this specification.
6. 2x the value specified in Table 2 of this specification.
7. 1.5x the value specified in Table 2 of this specification.