CONNECTORS, ELECTRICAL, FILTERED, RECTANGULAR,

NON-REMOVABLE SOLDER BUCKET CONTACTS

BASED ON TYPE D*J

ESCC Detail Specification No. 3405/001

as applicable

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TABLE 1(b) – MAXIMUM RATINGS

No.	Characteristics	Symbol	Maximum Rating		Unit
			Min.	Max.	
1	Rated/Working Voltage	U_R			Vdc
	Low Frequency		-	100	
	Medium, Standard, High Frequency		-	200	
	Non-filtered		-	300	
	Grounded		Not applicable		
2	Rated Current	I_R	-	5	Adc
3	Capacitor ac Rated Current	I_{Rac}	-	250	mArms
4	Operating Temperature Range	T_{op}	-55	+125	°C
5	Storage Temperature Range	T_{stg}	-65	+125	°C
6	Soldering Temperature	T_{sol}	-	+260 (1)	°C

NOTES:
1. Duration 10 seconds minimum and the same contact shall not be resoldered until 3 minutes have elapsed.

location of Figure 1

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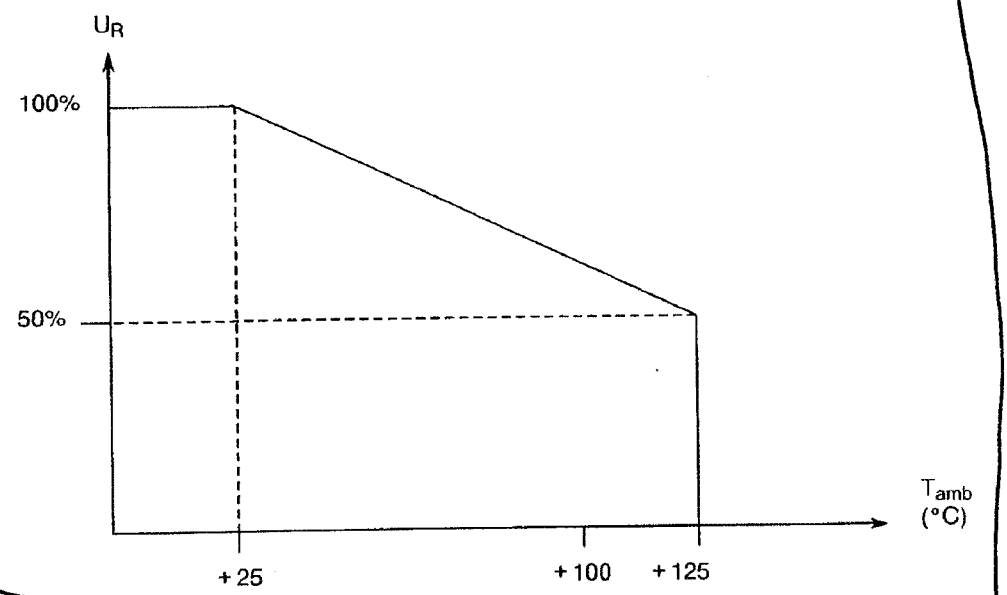
FIGURE 1 – PARAMETER DERATING INFORMATION



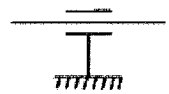
Filtered Contacts Rated Voltage versus Temperature

X

FIGURE 3 – CONTACT FUNCTIONAL DIAGRAMS

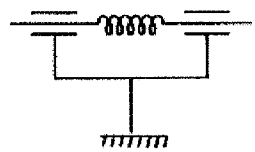
FILTER TYPE L

Equivalent Circuit for Low Frequency Filter Contacts



FILTER TYPES M, S AND H

Equivalent Circuit for Medium, Standard and High Frequency Filter Contacts

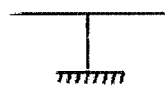


FILTER TYPE NF

Equivalent Circuit for Non-Filtered Contact

FILTER TYPE G

Equivalent Circuit for Grounded Contact



2 APPLICABLE DOCUMENTS

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

(a) ESCC Generic Specification No. 3405, Connectors, Electrical, Filtered, Circular and Rectangular.
(b) ESCC Detail Specification No. 3401/022, Accessories for Rectangular Connectors 3401/001, 3401/002 and Connector Savers 3401/020.
(c) QQ-B-613, Brass Material.
(d) MIL-G-45204, Gold Plating, Electro-deposited.
(e) MIL-C-14550, Copper Plating, Electro-deposited.
(f) MIL-P-19833, Glass-Fibre-Filled Diallylphthalate Resin.
(g) MIL-C-24308, Rack and Panel Connectors, Miniature.
(h) MIL-M-14, Moulding Plastics and Moulded Plastic Parts, Thermosetting.

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4.3.3 Contact Capability

For the purpose of this test, the pick-up and drop weights shall be as follows:

	Pick-Up Weight	Drop Weight
Weight (g)	28.35	226.8
Pin diameter (mm)	0.99 - 0.993	1.039 - 1.04
Insertion depth (mm)	4	4

4.3.4 Contact Retention (In Insert)

The contact retention force within the insert shall be 40N.

4.3.5 Mating and Unmating Forces

The forces applied for mating and unmating of the connectors shall conform to the values specified in Table 1(a).

4.3.6 Insert Retention (In Shell)

Connector inserts shall withstand a pressure of 42.8N/cm^2 without being dislodged from the shell.

4.3.7 Engagement and Separation Forces

The engagement and separation forces of the female contacts shall be tested with the applicable test pin and shall not exceed the values of the table hereunder.

	Diameter (mm)		Engagement Max (N)	Separation (N)	
	Min	Max		Min	Max
Max Ø Test Pin	1.039	1.04	3.33	-	2.22
Min Ø Test Pin	0.99	0.993	-	0.28	-

4.3.8 Oversize Pin Exclusion

The diameter of the test pin shall be 1.166mm min. and 1.17mm max., and the force applied to it shall be 3.33N.

4.3.9 Probe Damage

The probe diameter shall be 1.007mm min. and 1.033mm max., and the moment at the end of the probe shall be 5.65N. cm.

4.3.10 Solderability

Size A soldering iron shall be used.

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 Shells

Shells shall be made of brass in accordance with QQ-B-613, Composition II. They shall be plated as specified in MIL-G-45204, Type II, Grade 'C' Class 1, gold over copper in accordance with MIL-C-14550.

4.4.2 Inserts

Inserts shall be made of glass-fibre filled diallylphthalate resin in accordance with MIL-P-19833, Type GDI-30 or GDI-30-F or in accordance with MIL-M-14, Type SGDF.

4.4.3 Contacts

4.4.3.1 Body

The contact body shall be made of copper alloy. The contacts shall be gold-plated as specified in MIL-G-45204, Type II, Grade C, Class 1, thickness 1.27µm minimum over 2µm minimum of nickel.

The minimum plating thickness in the solder bucket shall be 0.2µm gold over 0.8µm nickel.

4.4.3.2 Filter

- Capacitor: Ceramic dielectric.
- Ferrite: Sintered iron oxide.

4.4.4 Ground Plane

The ground plane shall be made of copper alloy, gold plated. Gold plating thickness shall be 2.5µm minimum over 1µm minimum of copper.

4.4.5 Guiding and Locking Devices

As specified in ESCC Detail Specification No. 3401/022.

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. Each component shall be marked in respect of:

(a) Contact Identification.
(b) The ESCC Component Number.
(c) Characteristics.
(d) Traceability information.

4.5.2 Contact Identification

Contact identification shall be marked in accordance with Figure 2.

4.5.3 The ESCC Component Number

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

Example: 340500101B

- Detail Specification Number: 3405001
- Type Variant (see Table 1(a)): 01
- Testing Level: B

4.5.4 Characteristics

The characteristics to be marked shall consist of the applicable filter arrangement subvariant number as specified in Table 1(a).

Example: 100

TABLE 3 – ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES (1)

No.	Characteristic	Symbol	Spec. and/or Test Method	Test Conditions	Filter	Limits		Unit
						Min.	Max.	
1	Insulation Resistance	R_i	ESCC No. 3405 Para. 9.3.1.1	T_{amb} = +125(+0 -5)°C V = 100Vdc	Low Freq.	50	-	MΩ
					Med. Freq.	50	-	
					Std. Freq.	1000	-	
					High Freq.	1000	-	
				T_{amb} = -55(+5 -0)°C V = 100Vdc	Low Freq.	5000	-	
					Med. Freq.	5000	-	
					Std. Freq.	10000	-	
					High Freq.	10000	-	

NOTES:
1. Not applicable to non-filtered and grounded contacts.

TABLE 4 – PARAMETER DRIFT VALUES (1)

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits	Unit
1	Insulation Resistance Drift	$\frac{\Delta Ri}{Ri}$	As per Table 2	As per Table 2	-50	%
7	Capacitance Drift	$\frac{\Delta C}{C}$	As per Table 2	As per Table 2	±20	%

NOTES:
1. Not applicable to non-filtered and grounded contacts.

TABLE 5 – CONDITIONS FOR BURN-IN AND OPERATING LIFE TEST (1)

No.	Characteristics	Symbol	Condition	Unit
1	Ambient Temperature	T_{amb}	+125(+0 -3)	°C
2	Voltage (2)	V_T	See Table 1(b)	Vdc

NOTES:
1. Not applicable to non-filtered and grounded contacts.
2. Applied between contact and ground.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS

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 testing shall be those specified in Table 6. Unless otherwise specified, the measurements shall be performed at T_{amb} = +22±3 °C.