

Military Ruggedized - COTS

Modular Up-Screening

I. COMMERCIAL OFF-THE-SHELF

Temex Ceramics, in addition to its product lines equivalent to MIL-PRF-55681 requirements, is proposing Commercial Off-The-Shelf capacitors. The COTS certification package is a modular one in order to propose a cost effective solution to customer-driven program requirements. The COTS are produced on the same manufacturing line than MIL-STD equivalent products, with identical procedures and controls, thus offering high quality and high reliability components.

This ruggedization process adapts commercial technology to the demands of military environments and benefits from both the economies of scale and the advanced technology enjoyed by commercial products.

Using commercial off-the-shelf technology helps to reduce costs and keep abreast of technological innovation. Moreover, it is far more cost-effective to use off-the-shelf products rather than proprietary components.

Applications: Medical, Industrial, Telecommunications, Military and Space.

II. MODULAR UP-SCREENING PACKAGE

Temex Ceramics is offering the following up-screening options on its 0505 and 1111 capacitor case sizes, based on MIL-STD-202 test methods. The different available levels start from commercial standard products (MR0) up to military ruggedized components (MR4).

Ruggedization Process	Sample Size	MIL-STD-202	
Capacitance	100%	Test Method 305A	MR0
Dissipation Factor	100%	Test Method 306	
Insulation Resistance	100%	Test Method 302	
Visual Inspection	100%		
			MR1
Dielectric Withstanding Voltage	100%	Test Method 301	
Burn-In	100%	Test Method 108A (A)	MR2
Humidity (85/85)	13 units (*)	Test Method 103B (A)	
Solderability	5 units (*)	Test Method 208H (B)	
			MR3
Thermal Shock	100%	Test Method 107G (A)	
Destructive Physical Analysis	14 units (*)		MR4
Life Test	25 units (*)	Test Method 108A (F)	

Test Method 305A	Capacitance test, go/no-go check, no measurement data
Test Method 306	Dissipation Factor test, go/no-go check, no measurement data
Test Method 302	Insulation Resistance test, go/no-go check, no measurement data
Test Method 301	Dielectric Withstanding Voltage test, go/no-go check, no measurement data
Test Method 108A (A)	Electrical parameters check, 96 hours in chamber, Electrical parameters check
Test Method 103B (A)	Relative humidity of 85%, temperature of 85°C, 240 hours in chamber
Test Method 108A (F)	Electrical parameters check, 2'000 hours in chamber, Electrical parameters check

(*) Additional sample units required that have passed the 100% testing along with deliverable quantity

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III. CAPACITOR CHARACTERISTICS

Case Sizes	Rated Temperature and Voltage Temperature Limits	Equivalent Part Number	Lead and Termination
0505	-55°C to +125°C P100	CHA	W
0505	-55°C to +125°C NP0	SHA	W
0505	-55°C to +125°C P100	CHA	W
0505	-55°C to +125°C NP0	SHA	W
1111	-55°C to +125°C P100	CHB	W
1111	-55°C to +125°C NP0	SHB	W
1111	-55°C to +125°C P100	CHB	W
1111	-55°C to +125°C NP0	SHB	W
1111 + Microstrip Lead	-55°C to +125°C P100	CHB	1
1111 + Microstrip Lead	-55°C to +125°C NP0	SHB	1
1111 + Axial Ribbon	-55°C to +125°C P100	CHB	2
1111 + Radial Ribbon	-55°C to +125°C P100	CHB	3
1111 + Radial Wire	-55°C to +125°C P100	CHB	6
1111 + Axial Wire	-55°C to +125°C P100	CHB	7

NB: termination W is Solder Coated, Final. Other terminations like C (copper-barrier) or S (nickel-barrier) are available on request. Please consult us.

IV. PART NUMBERING

