

EMI Suppression Capacitor

For High Humidity Resistance Application



MEX-C Series

MERITEK

SCOPE

This specification applied to capacitor for type **MEX-C**

FEATURES

- Metallized polypropylene film , non-inductive wound construction
- Withstanding overvoltage stressing
- Excellent active and passive flame resistant abilities

APPLICATION

- **For High humidity resistance application**
- Widely used in across-the-line, interference suppression circuit, etc.,

OPERATING TEMPERATURE

- -40°C ~ +110°C

CAPACITANCE RANGE

- 0.001μF ~ 2.2μF(2.7~40.0μF pending)

CAPACITANCE TOLERANCE

- ±5% (J) ,±10% (K) , ±20% (M)

RATED VOLTAGE

- 250/275VAC (305VAC RATED PENDING)

DIMENSIONS

MERITEK PART NO.	CAP	Tol.	R.V.	W	H	T	P	Φd
	uF	±%	VAC	±0.5	±0.5	±0.5	±0.5	±.05
MEX684M275VACCG	0.68	20	275	31.5	19.5	11.0	27.5	0.8
MEX105M275VACCG	1.0	20	275	31.5	19.5	11.0	27.5	0.8
MEX155M275VACCG	1.5	20	275	31.5	21.5	12.5	27.5	0.8
MEX225M275VACCG	2.2	20	275	31.5	24.5	15.0	27.5	0.8

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ELECTRICAL CHARACTERISTICS

NO.	TEST ITEMS		PERFORMANCE		IEC-60384-14
1	Withstand voltage	between terminals	Shall be no abnormality		Apply 4.3 times of rated voltage (1200VDC) for 60 sec. charge/discharge current must be 1A max. or 2100vdc for 1sec.
		between terminals & enclosure			2U _R +1500V _{a.c} 2-5 sec. (2000avc min)
2	Insulation resistance	between terminals	≤0.33μF	≥ 15.000MΩ	Apply 100V ±15% d voltage ,1min
		between terminals & enclosure	>0.33μF	≥ 5000MΩ•μF	
3	Capacitance		Within the tolerance specified.		a. Measuring frequency: 1KHZ ±10% b. Measuring voltage: 5VRMS. Max. at 20°C
4	Dissipation Factor	0.001≤C _R ≤0.47	≤0.1% (1KHZ,20°C)		≤0.2% (10KHZ,20°C)
		0.47<C _R ≤1.0	≤0.2% (1KHZ,20°C)		≤0.7% (10KHZ,20°C)
		C _R >1.0	≤0.3% (1KHZ,20°C)		-----

MECHANICAL CHARACTERISTICS

NO.	TEST ITEMS		PERFORMANCE	IEC-60384-14
1	Strength of terminal	Tensile strength of terminal	Shall be no abnormality	Wire diameter 0.5-0.8mm, load 10N. 0.8-1.2mm, load 20N. for 10sec.
		Bending strength of lead terminal		Wire diameter 0.5-0.8mm,load 5N,4x90° 0.8-1.2mm,load 10N, 4x90°
2	Vibration		Shall be no abnormality also no electrical discontinuity.	Amplitude 0.75mm or acceleration 98m/s ² (whichever is the smaller severity), Freq range: 10hz-500hz. There are three directions, 2 hours per each direction, total 6hrs.

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ENDURANCE CHARACTERISTICS

NO.	TEST ITEMS		PERFORMANCE	IEC-60384-14
1	Solderbility		After the immersion lead wire is covered new solder of 90% around lead surface by dipping point.	a. Solder temperature: 235±5℃. b.Dipping time: 3±0.5 sec.
2	Solder heat Resistance	Appearance	Shall be no abnormality	a. Solder temperature: 260±5℃. b.Dipping time: 10±1.0 sec. c.Dipping depth: 2-2.5mm from roots of capacitor.
		Withstand voltage	Shall satisfy No.6-1-1.	
		Rate of variation of capacitance	Within ±3% of the value before test	
3	Solvent Resistance	Appearance	Shall be no visible damage, legible marking	Solvent: Industrial isopropanol Solvent temperature:23±5℃ Condition: scrub Scrub material: absorbent cotton
4	Cold resistance	Rate of variation of capacitance at -40℃	$\Delta C/C \leq \pm 5\%$ of the value before test.	Testing temperature: -40±2℃ for 2+1/-0 hours
5	Dry Heat resistance		$\Delta C/C \leq \pm 5\%$ of the value before test. Insulation resistance:≥50% of the initial value	Temperature: +105℃ for 16hours

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NO.	TEST ITEMS	PERFORMANCE	IEC-60384-14	
6	Humidity resistance	Appearance	Shall be no abnormality	a. Temperature: $85\pm 2^{\circ}\text{C}$ b. Humidity: $85\pm 2\% \text{RH}$ c. Testing time: $+24$ 1000 Hrs. d. Apply voltage: 240vac After testing, leave it for about 16 Hrs. at standard condition
		Withstand voltage	Shall be no abnormality	
		Insulation resistance	$\leq 0.33\mu\text{F}, \text{IR} \geq 7500\text{M}\Omega$ $> 0.33\mu\text{F} \geq 2500\text{M}\Omega \cdot \mu\text{F}$	
		Dissipation factor change	$\Delta \tan \delta \leq 0.005 \text{ Max.}$	
		Rate of variation capacitance	Within $\pm 10\%$ of the value before test.	
7	Rapid Temperature change	Shall be no visible damage, legible marking $\Delta C/C \leq \pm 5\%$ (relative to the initial value) $\text{tg}\delta \leq 0.0008 (1\text{KHZ})$ $\text{IR} > 15000\text{M}\Omega$	1. $\theta_A = 40^{\circ}\text{C}$,5 cycles , duration : 30 min 2. $\theta_B = 100^{\circ}\text{C}$,5 cycles, duration : 30 min	
8	Impulse voltage	There are three or more waveforms which indicate that no self-healing breakdown have occurred when it is monitored by the monitor	Each individual capacitor shall be subjected to 24 impulses of are shown by the monitor to have a wave form Indicating that no self-healing breakdown have taken place the impulses shall not be less than 10s, and the 2.5KV (suitable for $C_R \leq 1\text{Mf}$; when $C_R > 1\mu\text{f}$, the capacitor can endure pulse voltage value is $2.5/\sqrt{C_R} \text{ kV}$)	
9	High temperature loading	Appearance	Shall be no abnormality	a. Temperature: $105\pm 2^{\circ}\text{C}$ b. Testing time: $1000+48 \text{ Hrs.}$ 0 c. Apply voltage: 1.25 time rated voltage AC, once very hour the voltage shall be increased to 1000Vrms for 0.1 second.
		Insulation resistance	$\leq 0.33\text{Mf}$ $\text{IR} \geq 7500\text{M}\Omega$ $> 0.33\mu\text{F} \geq 2500\text{M}\Omega \cdot \text{F}$	
		Dissipation factor	$0.0008 (0.08\%) \text{ Max.}$	
		Rate of variation capacitance	Within $\pm 10\%$ of the value before test.	

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NO.	TEST ITEMS	PERFORMANCE	IEC-60384-14
10	Charging and discharging	$\Delta C/C \leq 10\%$ (relative to the initial value) Increase of DF: $C_R \leq 1\mu f: 0.008(10\text{kHz})$ $C_R > 1\mu f: 0.005(1\text{kHz})$ IR: $\geq 50\%$ OF the rated value	TIMES: 1000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging Voltage : $2U_r$ V.d.c. Charging resistance: $220/C_R(\Omega)$ or the current $\leq 1.0A$ (Whichever is the minor) Discharging resistance: $R = \frac{550}{C_R \times dU/dt} = \frac{5.50}{C_R} (\Omega)$ Dv/dt(v/us): 100v/us

MEASURING & TESTING EQUIPMENTS

- Capacitance and Dissipation Factor ($\tan \delta$)
 - a. Hewlett Packard 4284A Precision LCR Meter.
 - b. NF 2322 LCR Meter.
 - c. Chen Hwa 104 LCR Meter.
- Insulation Resistance:
 - a. Hewlett Packard 4329A High Resistance Meter.
 - b. TOA SM-8205 Super Megohm Meter.
- Environmental Test Chamber:
 - a. King Son THS-A4L.
 - b. C Sun HCC-2.
 - c. Tabai PR-1.
- Dielectric Strength Test:

Good will GPT-515AD Puncture tester

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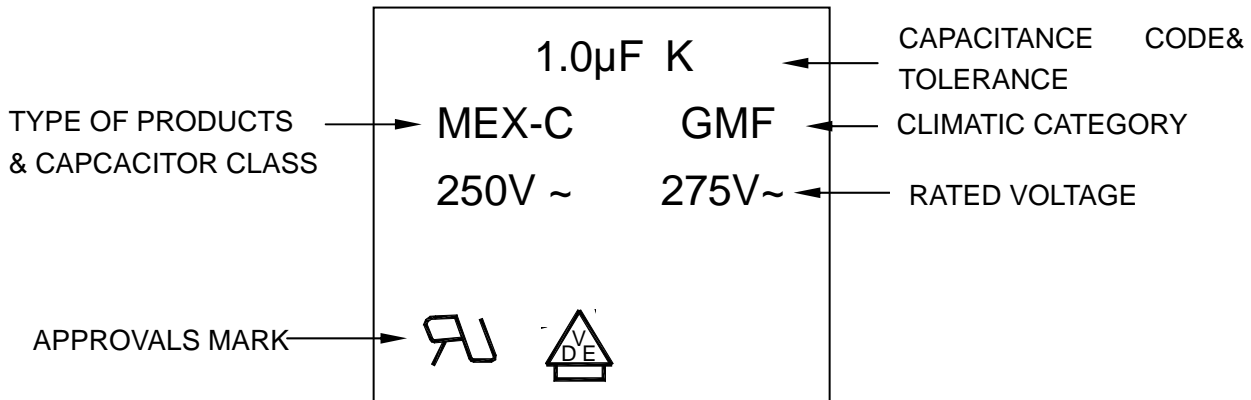
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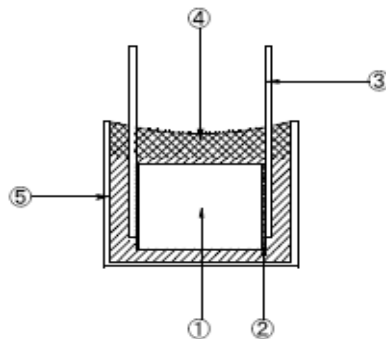
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MARKING



CONSTRUCTION DRAWING



All components to be meet RoHS requirement

items	Parts	Material	Flame resistance
	Capacitor element	Metallized polypropylene film	
	Soldering weld (Metalicon)	Sn-Zn alloy wire (Pb free correspondence)	
	Lead wires	Tinned steel copper wire (Pb free correspondence)	
	Filler	Epoxy resin	UL-94V0 approved
	Box	PBT plastic	UL-94V0 approved

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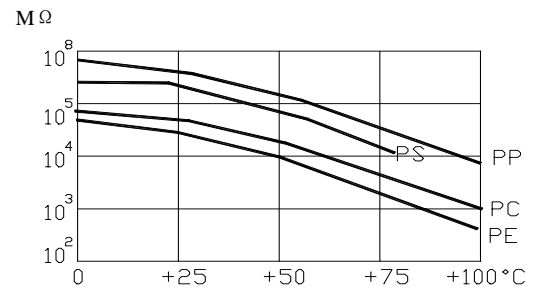
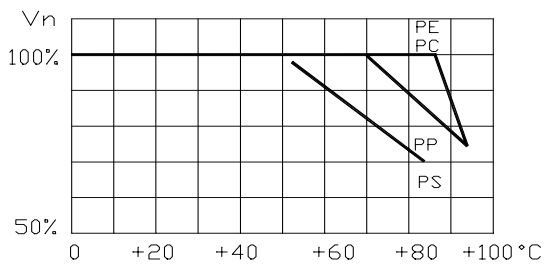
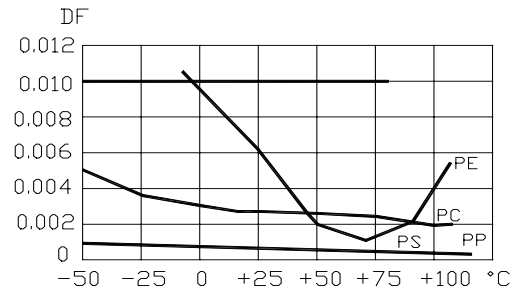
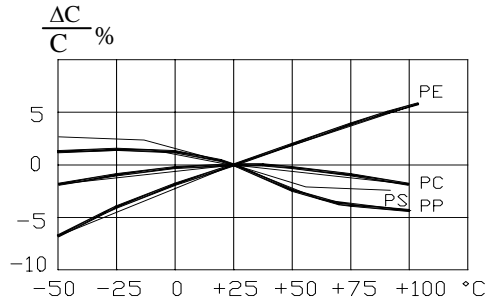


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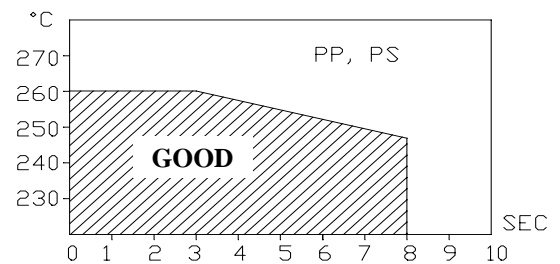
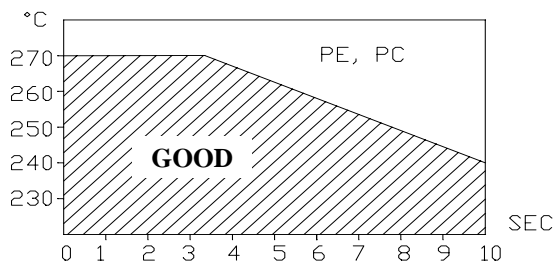
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CHARACTERISTICS

• TEMPERATURE CHARACTERISTICS



• SOLDERING TEMPERATURE VS TIME



• FREQUENCY CHARACTERISTICS

