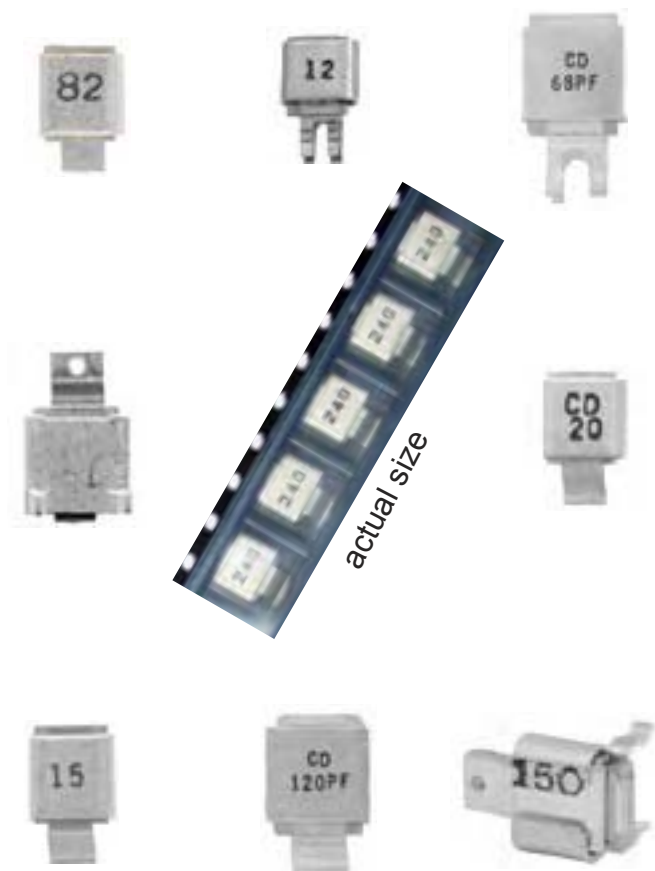


Types MCM and MIN Metal Clad RF Capacitors

Multilayer High Power, High Temperature Mica and Teflon® Capacitors



Types MCM and MIN metal clad Teflon® and mica capacitors are top performers for high power applications requiring low inductance at high frequencies and can operate at temperatures up to 200 °C and voltages to 1000 Vdc. Choosing from 16 different configurations offers easy mounting with options for surface mount as well as through-hole and mechanical assembly. To assure high current capability in the smallest capacitors, low-capacitance ratings use Teflon® that has ultra-low dielectric absorption - better than polypropylene, polystyrene and NPO ceramic.

Highlights

- 200 °C rated with no voltage derating
- Wave solderable
- No cracking or delaminating
- CTE $\approx$ 18 ppm/°C compatible with FR4 PCBs
- Highly thermal conductive package
- Gull-wing terminal minimizes stress
- Typical 100 pF ESR, <11 m Ω @ 100 MHz
- Nonmagnetic for minimal RF loss
- Very low ESL for excellent by-pass action
- Ultra stable: no change with (t), (V) and (f)
- Exact capacitance with tolerances from ± 0.25 pF
- RoHS Compliant

Specifications

	MCM	MIN
Capacitance Range:	1 to 1500 pF	1 to 350 pF
Voltage Ratings:	300 to 1000 Vdc	300 Vdc
Temperature Range:	-55 °C to +200 °C with no voltage derating	
Capacitance Tolerance:	± 0.25 pF, ± 0.5 pF, ± 0.1 pF, $\pm 0.5\%$, $\pm 1\%$, $\pm 2\%$, $\pm 5\%$, $\pm 10\%$	
Dielectric Strength:	200% of rated voltage for 5 seconds	
Insulation Resistance:	1000 M Ω • μ F Need not exceed 100,000 M Ω at 25 °C	
Aging Rate:	None	
Marking:	MIN - Capacitance in pF and ID letters CD MCM - Capacitance, ID letters CD and voltage if other than 500 when space permits RoHS Compliant - marked in green ink	

Applications

RF Power Amplifiers
Lasers
Mobile Radio
Plasma generators
MRI Coils
RF Medical Equipment
Automotive

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Ratings Available

Capacitance (pF)	Voltage Ratings (Vdc)			Dielectric
	300	500	*1000	
MIN02				
1 - 9	X			Teflon®
10 - 60	X			Mica
61 - 120	X			Mica
121 - 180	X			Mica
181 - 240	X			Mica
241 - 300	X			Mica
301 - 350	X			Mica
MCM01				
1 - 7		X	X	Teflon®
8 - 32		X	X	Teflon® or Mica
33 - 250		X	X	Mica
251 - 500		X	X	Mica
501 - 750		X	X	Mica
751 - 1000		X		Mica
1001 - 1280		X		Mica
1281 - 1500	X			Mica

*1000 V available in MCM01-001 and -009 style

Part Numbering System

MCM01 or MIN02 Type	—	001	C	D	101	J	—	T	F
	"dash"	Terminal Configuration	Temperature Coefficient * (mica only)	Rated Voltages (Vdc)	Capacitance (pF)	Capacitance Tolerance* (pF or %)		Packaging	RoHS Compliant
			C	C = 300 Vdc	090 = 9	A = ±1 pF 2 - 200 pF		-T = Tape	Blank = Not specified
			D	D = 500 Vdc	9R2 = 9.2	B = ±0.25 pF 1 - 50 pF		Blank = Bulk	F = Compliant
			E	F = 1000 Vdc	100 = 10	D = ±0.5 pF 1 - 200 pF			
					101 = 100	E = ±0.5 % > 100 pF			
					(751) = 751	F = ±1 % > 33 pF			
					102 = 1000	G = ±2% > 11 pF			
						J = ±5% > 11 pF			
						K = ±10% > 11 pF			

MCM01	MIN02
▲001 ²	▲002 ¹
▲009 ^{1,2}	
▲010	

Style	Capacitance Range	Temperature Characteristic
C	1 pF to 20 pF	±200 ppm/°C
D	21 pF to 56 pF	±100 ppm/°C
E	57 pF to 1500 pF	-20 to +100 ppm/°C

*TC code letter is left blank for Teflon® items

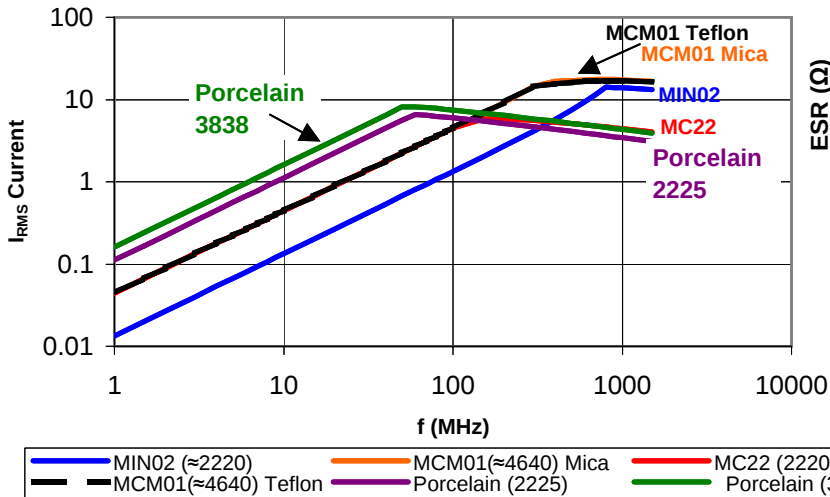
Measured at 1 MHz for ≤1000 pF and 1 kHz for >1000 pF

▲ Most Popular Series, other's available, consult factory
¹ Surface mount and T&R
² 1kV

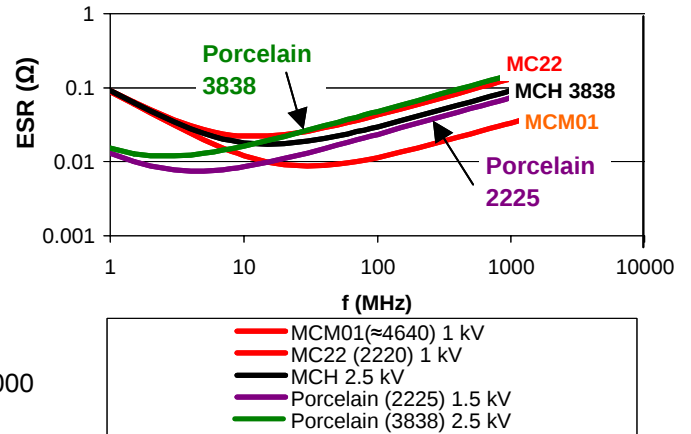
Types MCM and MIN Metal Clad RF Capacitors

Typical Performance Data

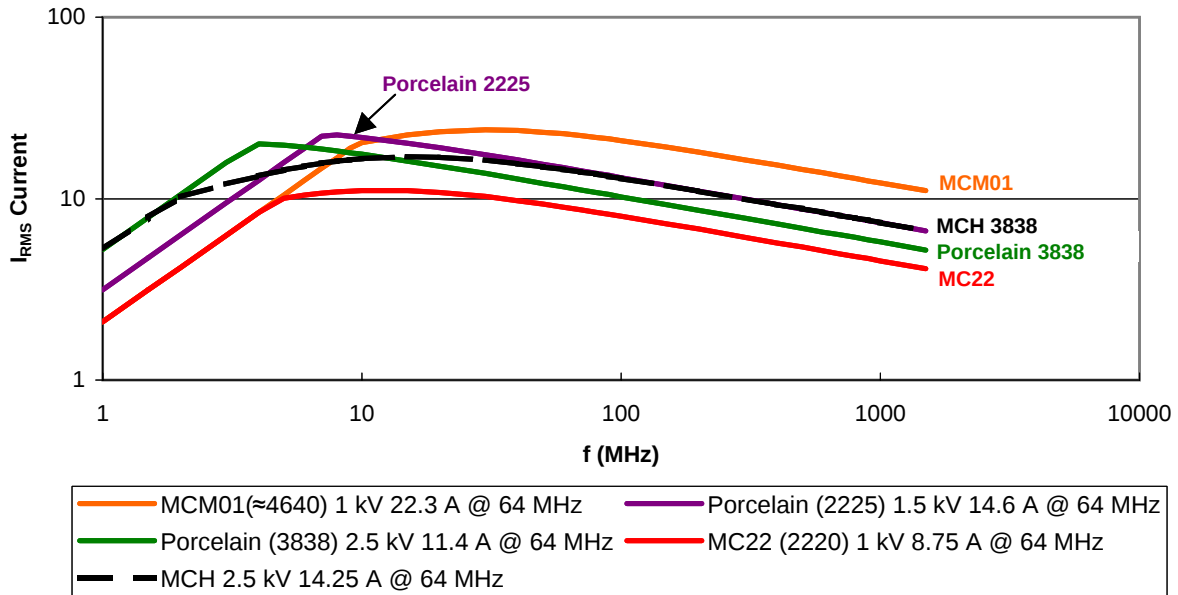
Current Rating (I_{RMS}) for 10 pF at 60 °C Rise



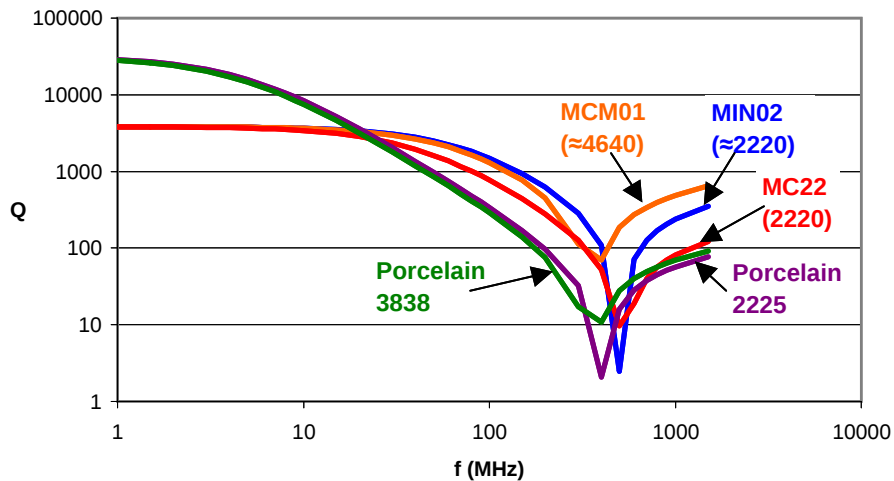
ESR vs Frequency for 470 pF



Current Rating (I_{RMS}) for 470 pF at 60 °C Rise



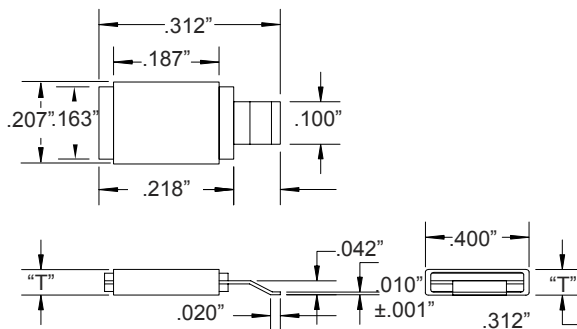
Q vs Frequency for 100 pF @ 25 °C



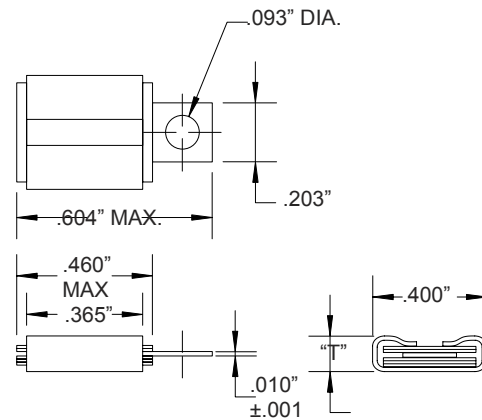
Types MCM and MIN Metal Clad RF Capacitors

Outline Drawings for Popular Items

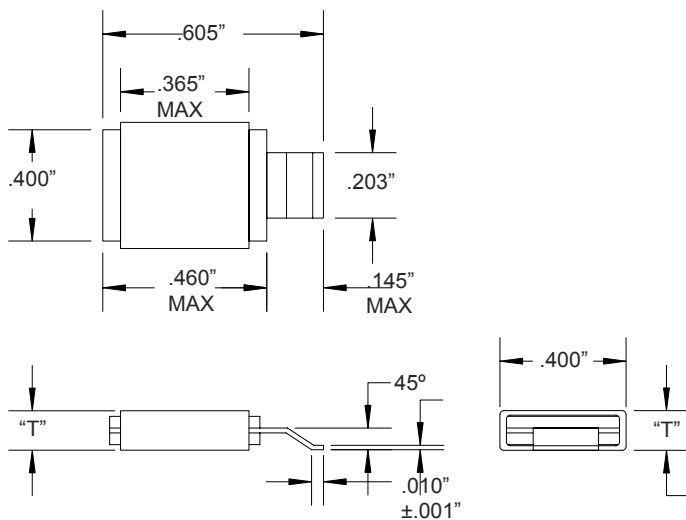
MIN02-002



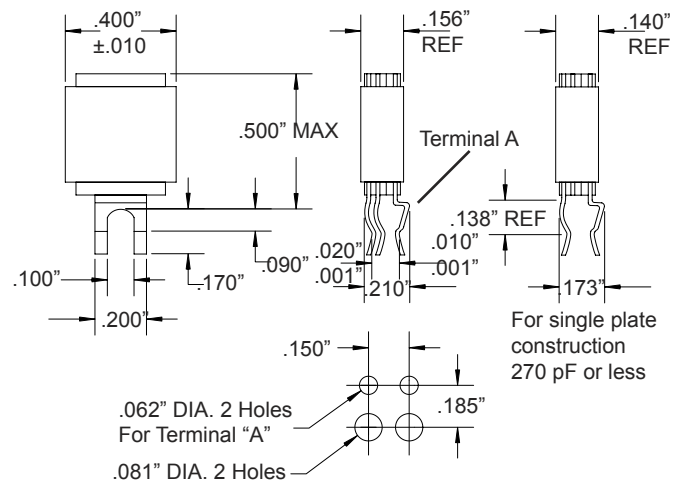
MCM01-001



MCM01-009



MCM01-010



"T" varies with capacitance

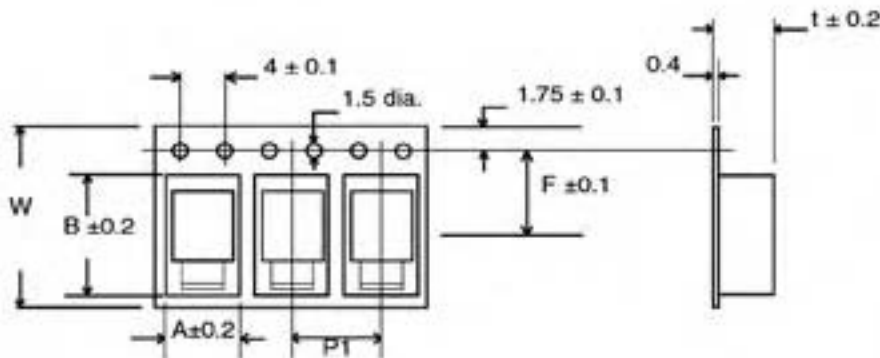
Types MCM and MIN Metal Clad RF Capacitors

Standard Minimum Quantities

Bulk Pack: 100 pieces per bag

Reel Pack: 500 pieces per reel

Tape Specifications



Tape Dimensions (mm)						
Case	W	A	B	P1	F	t
MIN02-002 < 150 pF	16	5.56	8.18	8	7.5	2.16
MIN02-002 ≥ 150 pF	16	5.66	8.10	8	7.5	3.20

Note: 24 mm tape for MCM01-009 and 32 mm tape for MCM01-004 are available upon request.

Solder Profile

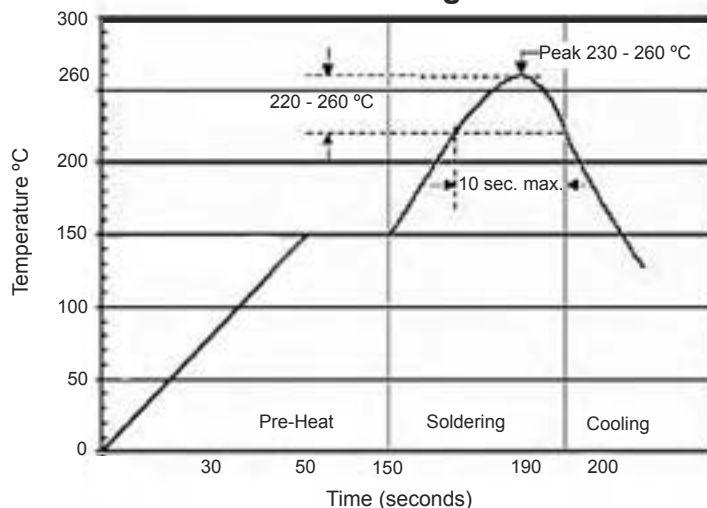
Specifications:

Lead free finish

Case and Terminal Material:

Silver plated, copper flashed, brass

Reflow Soldering Method



Wave Soldering Method

