

# Mini Macro Chip Series

High Voltage Thick Film SMD Chip



## FEATURES

- High Voltage Ratings
- Smaller Package Sizes
- Low Cost
- Wraparound Terminals

## SERIES SPECIFICATIONS

Series (Size in./met.)	Resistance Range	TCR ppm/°C	Power Rating (W) @70°C	Voltage Rating*	Isolation Voltage
MMC06 (0603/1608)	470Ω~10MΩ	±100	0.1	200	100
	47Ω~464Ω	±200			
MMC08 (0805/2012)	100Ω~10MΩ	±1% & ±2%	0.125	300	500
	100Ω~51MΩ	±5% & ±10%			
	47Ω~97.6Ω	±200			
MMC12 (1206/3216)	100Ω~10MΩ	±1% & ±2%	0.25	400	500
	100Ω~51MΩ	±5% & ±10%			
	47Ω~97.6Ω	±200			
MMC25 (2512/6332)	560Ω~20MΩ	±1% & ±2%	1.0	800	500
	560Ω~51MΩ	±5% & ±10%			
	100Ω~549Ω	±200			
	47Ω~97.6Ω	±500~-200			

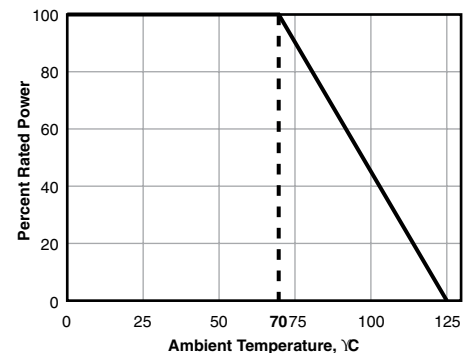
\*Use Ohm's Law ( $V = \sqrt{P \cdot R}$ ) to calculate maximum working voltage.

Note: Limiting Element Voltage can only be applied to resistors when the resistance is equal to or higher than the critical resistance value.

## CHARACTERISTICS

<b>Preferred Number Series for Resistors</b>	±1%, 2%: E96, E24 ±5%, 10%: E24
<b>Substrate</b>	Alumina
<b>Resistor</b>	Thick Film
<b>Coating</b>	glass overcoat
<b>Terminal</b>	100% nickel barrier inner layer with 100% matte tin outer layer
<b>Tolerance</b>	1-10%
<b>Derating</b>	Linearly from 100% at 70°C to 0% at 125°C
<b>Isolation Voltage</b>	500V (ex. MMC06: 100V)
<b>Operating Temp. Range</b>	-55°~+125°

### Derating



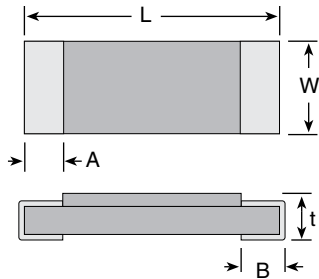
(continued)

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### DIMENSIONS

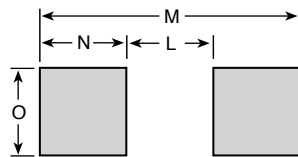
(in./mm)



	L	W	t	A	B	Qty./Reel
MMC06	0.063 ±0.004 1.6 ±0.1	0.031 ±0.006 0.8 ±0.15	0.018 ±0.004 0.45 ±0.1	0.012 ±0.004 0.3 ±0.1	0.012 ±0.004 0.3 ±0.1	5000
MMC08	0.079 ±0.004 2.0 ±0.1	0.049 ±0.004 1.25 ±0.10	0.022 ±0.004 0.55 ±0.1	0.016 ±0.008 0.4 ±0.2	0.016 ±0.008 0.4 ±0.2	5000
MMC12	0.126 ±0.004 3.2 ±0.1	0.063 ±0.006 1.6 ±0.15	0.022 ±0.004 0.55 ±0.1	0.020 ±0.01 0.5 ±0.25	0.020 ±0.01 0.5 ±0.25	5000
MMC25	0.248 ±0.004 6.3 ±0.1	0.126 ±0.006 3.2 ±0.15	0.022 ±0.004 0.55 ±0.1	0.024 ±0.008 0.6 ±0.2	0.024 ±0.008 0.6 ±0.2	4000

### Land Pattern

(in.) Dimensions are for reference only



Size	M	N	O	L
MMC06	0.075	0.024	0.041	0.027
MMC08	0.095	0.032	0.069	0.031
MMC12	0.146	0.040	0.080	0.066
MMC25	0.272	0.048	0.150	0.176

### ORDERING INFORMATION

RoHS Compliant

**M M C 1 2 J 4 7 0 4 E T P**

Type	Wattage	Tolerance	Resistance	Packaging
	06 = 0.1	F = 1%	First 3 digits are significant; 4th digit is multiplier (# of zeroes to follow).	TP = Paper tape (use on MMC06, MMC08, MMC12)
	08 = 0.125	G = 2%		TR = Embossed tape (use on MMC25)
	12 = 0.25	J = 5%	Examples: 4704 = 4,700,000 1214 = 1,210,000	
	25 = 1.0	K = 10%	Use E96 values for 1% Use E24 values for 5%	

Note: Units are marked with 3-digit (E24 Series) or 4-digit (E96 Series). 4-digit marking not available on MMC06 sizes.

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