

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			

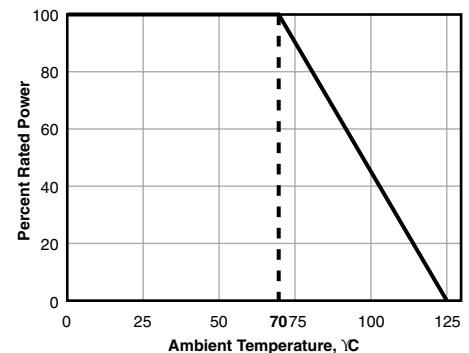
*Use Ohm's Law ($V = \sqrt{P \cdot R}$) to calculate maximum working voltage.

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

CHARACTERISTICS

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

Derating



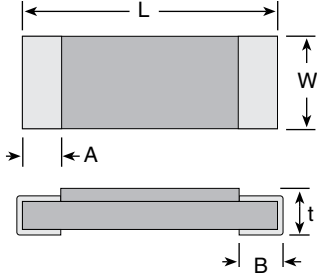
(continued)

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DIMENSIONS

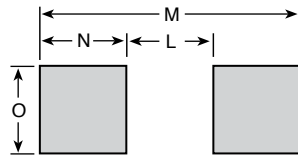
(in./mm)



	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

MMC12J4704ETP

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%	Examples: 4704 = 4,700,000 1214 = 1,210,000	TR = Embossed tape (use on MMC25)	
12 = 0.25	J = 5%	Use E96 values for 1% Use E24 values for 5%		
25 = 1.0	K = 10%			

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