

Cylindrical Surface Mount Metal Glaze™ Compliant Terminal Resistors



SMC Series

- Lead free, RoHS compliant
- Uses standard IRC 2512, 3610 solder pads
- Ideal for automotive and other harsh thermal applications
- Uncompromising Metal Glaze™ performance gives excellent surge performance
- Capped terminals provide mechanical compliance-relief from board vs. component TCE mismatch

Electrical Data

IRC Type	Industry Standard Footprint	Power Rating @ 70°C (Watts)	Resistance Range (Ohms)	Tolerance (±%) ¹	TCR (±ppm/°C)	Operating Voltage (V)	Maximum Voltage (V)
SMC-1	2512	1.0	0.5 to 1M	1, 2, 5	100	350	650
SMC-2	3610	2.0	0.5 to 2M	1, 2, 5	100	500	1000

Notes:

¹ For tolerances below ±1%, please contact factory.

Environmental Data

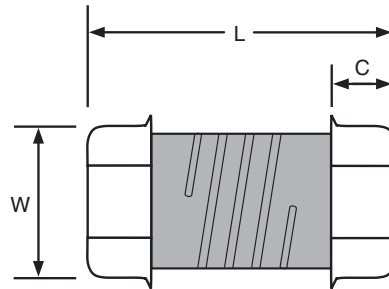
Characteristics	Maximum Change	Test Method
Temperature Coefficient (ppm/°C)	As specified	MIL-PRF-55342E Par 4.7.9 (-55°C to +125°C)
Thermal Shock	±0.5% +0.01Ω	MIL-PRF-55342E Par 4.7.3 (-65°C to +150°C)
Low Temperature Operation	±0.25% +0.01Ω	MIL-PRF-55342E Par 4.7.4 (-65°C @ working voltage)
Short Time Overload	±0.5% +0.01Ω ±1% for (R>100KΩ)	MIL-PRF-55342E Par 4.7.5 (2.5 x √PxR for 5 seconds)
High Temperature Exposure	±0.5% +0.01Ω	MIL-PRF-55342E Par 4.7.6 (+150°C for 100 hours)
Resistance to Bonding	±0.25% +0.01Ω	MIL-PRF-55342E Par 4.7.7 (Reflow soldered to board @ 260°C for 10 seconds)
Solderability	95% minimum coverage	MIL-STD-202, Method 208 (245°C for 5 seconds)
Moisture Resistance	±0.5% +0.01Ω	MIL-PRF-55342E Par 4.7.8 (10 cycles, total 240 hours)
Life Test	±0.5% +0.01Ω	MIL-PRF-55342E Par 4.7.10 (2000 hours @ 70°C intermittent)
Terminal Adhesion Strength	±1% +0.01 no mechanical damage	1200 gram push from underside of mounted chip for 60 seconds
Resistance to Board Bending	±1% +0.01 no mechanical damage	Chip mounted in center of 90mm long board, deflected 5mm so as to exert pull on chip contacts for 10 seconds
Operating Temperature	-55°C to +150°C	

General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

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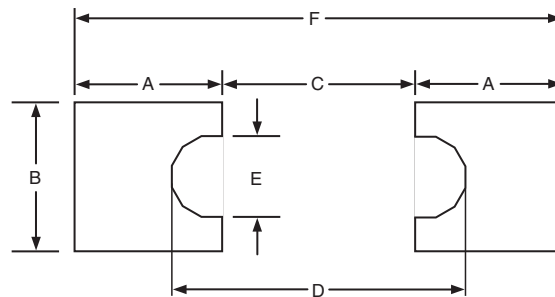
Physical Data



Dimensions (Inches and (mm))

Industry Footprint	IRC Type	L (Length)	W (Width/Diameter)	C (Termination Width)
2512	SMC-1	0.250 ±0.010 (6.35 ±0.25)	0.122 ±0.003 (3.10 ±0.08)	0.060 ±0.010 (1.50 ±0.25)
3610	SMC-2	0.367 ±0.010 (9.32 ±0.25)	0.122 ±0.003 (3.10 ±0.08)	0.060 ±0.010 (1.50 ±0.25)

Recommended Solder Pad Dimensions (Reflow):



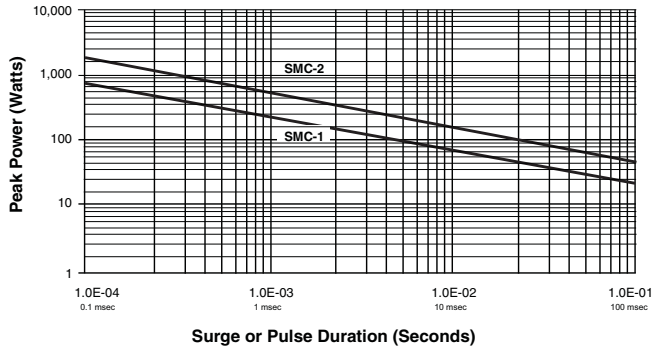
Industry Footprint	Dimensions (Inches and mm)					
	A	B	C	D	E	F
2512	0.121 (3.07)	0.126 (3.20)	0.127 (3.23)	0.183 (4.65)	0.040 (1.02)	0.369 (9.37)
3610	0.170 (4.32)	0.160 (4.06)	0.213 (5.41)	0.273 (6.93)	0.044 (1.12)	0.553 (14.05)

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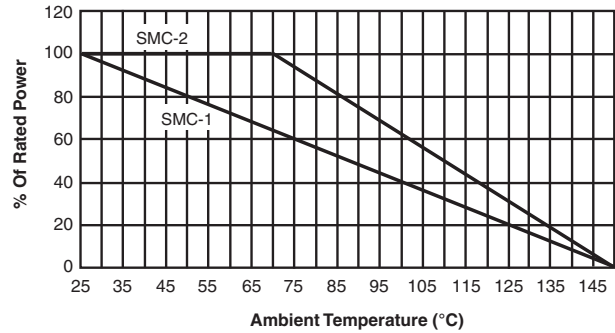


Surge Capabilities

SMC Series Surge Capability for
Non-repetitive or Low-Repetition Rate Surges



Power Derating Curve



Standard Reel Packaging per EIA-481:

Industry Footprint	Reel Diameter*	Quantity Per Reel	Carrier Tape Width	Component Pitch
2512	13"	5,000 max.	12mm	4mm
3610	7"	1,500 max.	24mm	4mm

*The 13" reel is considered standard and will be supplied unless otherwise specified.

Ordering Data

Sample Part No. SMC1 100 2003 F LF 13

IRC Type
(SMC1 or SMC2)

Temperature Coefficient.....
(50 or 100 ppm)

Resistance Value.....
(First three significant figures plus fourth digit multiplier)
Example: 2203 = 220KΩ
51R0 = 51Ω
R200 = 0.2Ω

Tolerance.....
C = ±0.25%, D = ±0.5%, F = ±1.0%, G = ±2.0%, J = ±5.0%

LF.....
Provides clear "Lead Free" Designation

Packaging Code.....
(7 = 7" Reel, 13 = 13" Reel)

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