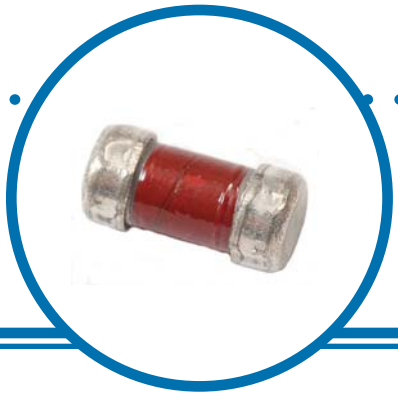
HSC Series

Cylindrical Surface Mount Metal Glaze™ Compliant-Terminal Resistors

- 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 (Watts)	Resistance Range (Ohms)	Tolerance (±%)[1]	TCR (±ppm/°C)	Operating Voltage (V)	Maximum Voltage (V)
HSC-1	2512	1.0	3.9	10	200	350	700
			56, 100, 150		100		
HSC-2	3610	2.0 @ 35°C 1.33 @ 70°C	6.8	10	200	500	1000
			24, 100, 220		100		

Notes:
[1] For tolerances below ±1%, please contact factory.

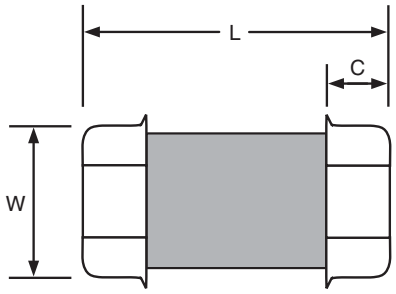
Environmental Data

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	±2.0% +0.01Ω (R ≤ 10Ω) ±1.0% +0.01Ω (R > 10Ω)	MIL-PRF-55342E Par 4.7.3 (-65°C to +150°C)
Low Temperature Operation	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	MIL-PRF-55342E Par 4.7.4 (-65°C @ working voltage)
Short Time Overload	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	MIL-PRF-55342E Par 4.7.5 (2.5 x $\sqrt{PxR}$ for 5 seconds)
High Temperature Exposure	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	MIL-PRF-55342E Par 4.7.6 (+150°C for 100 hours)
Resistance to Bonding	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	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	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	MIL-PRF-55342E Par 4.7.8 (10 cycles, total 240 hours)
Life Test	±1.0% +0.01Ω (R ≤ 10Ω) ±0.5% +0.01Ω (R > 10Ω)	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	

Wire and Film Technologies Division • 4222 South Staples Street • Corpus Christi Texas 78411 USA
Telephone: 361 992 7900 • Facsimile: 361 992 3377 • Website: www.irctt.com

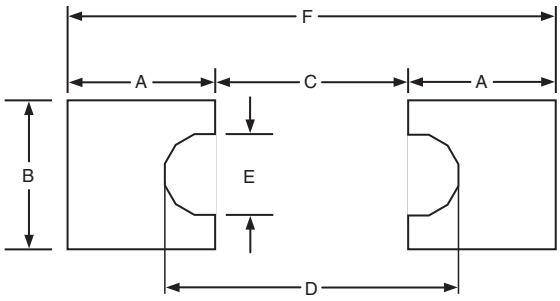
Cylindrical Surface Mount Metal Glaze™ Compliant Terminal Resistors

Physical Data



Dimensions (Inches and (mm))				
Industry Footprint	**IRC Type**	**L (Length)**	**W (Width/Diameter)**	**C (Termination Width)**
2512	HSC-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	HSC-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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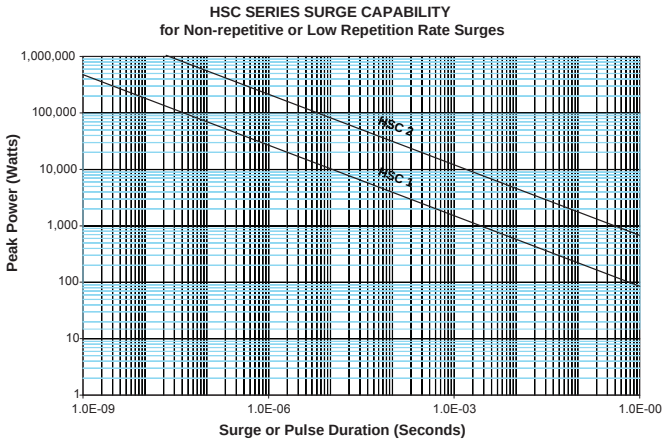
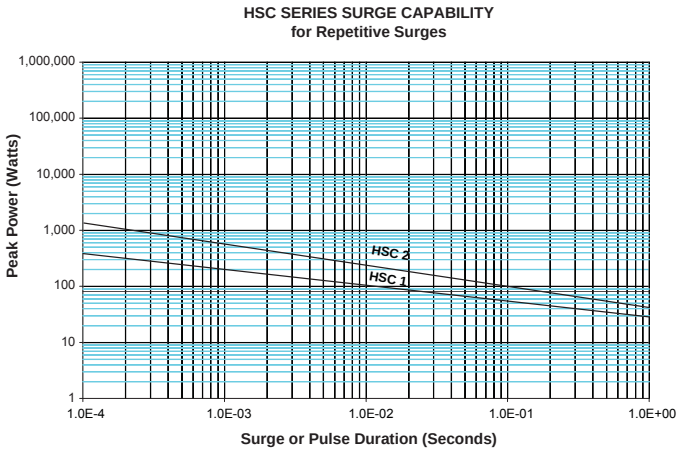
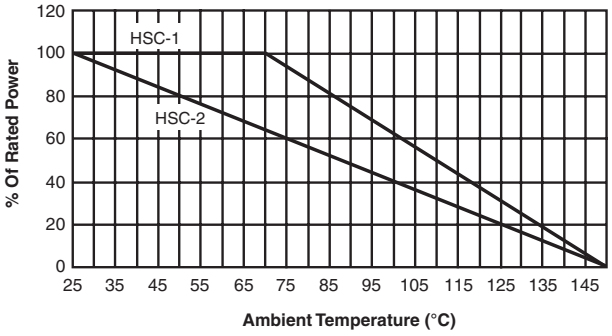
Surge Capabilities





Power Derating Curve



Standard Reel Packaging per EIA-481:

Industry Footprint	Reel Diameter*	Quantity Per Reel	Carrier Tape Width	Component Pitch
HSC-1 2512	7″	750	12 mm	4 mm
	13″	2,500		
HSC-2 3610	13″	2,000	24 mm	4 mm

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

Ordering Data

Sample Part No. HSC1 | 100 | 2003 | K | LF | XXX | 13

IRC Type
(HSC1 or HSC2)

Temperature Coefficient
(50 or 100 ppm)

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

Tolerance
K = ± 10.0%

LF
Provides clear "Lead Free" Designation

Specification Number (Optional)
Custom design identifier for non-standard products

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