

# THICK FILM SURGE CHIP RESISTORS



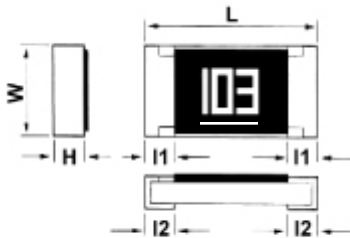
SCR

SCR 18, 12, 01

## Features

- 1- Suitable for lead free flow and reflow soldering.
- 2- Overload and high pulse-loading capability.
- 3- Application for photo disc driver, medical, military equipment, automotive industry, measurement instruments etc.
- 4- Marking: White line under the resistance marking on resistor body.

## Dimensions and Structure

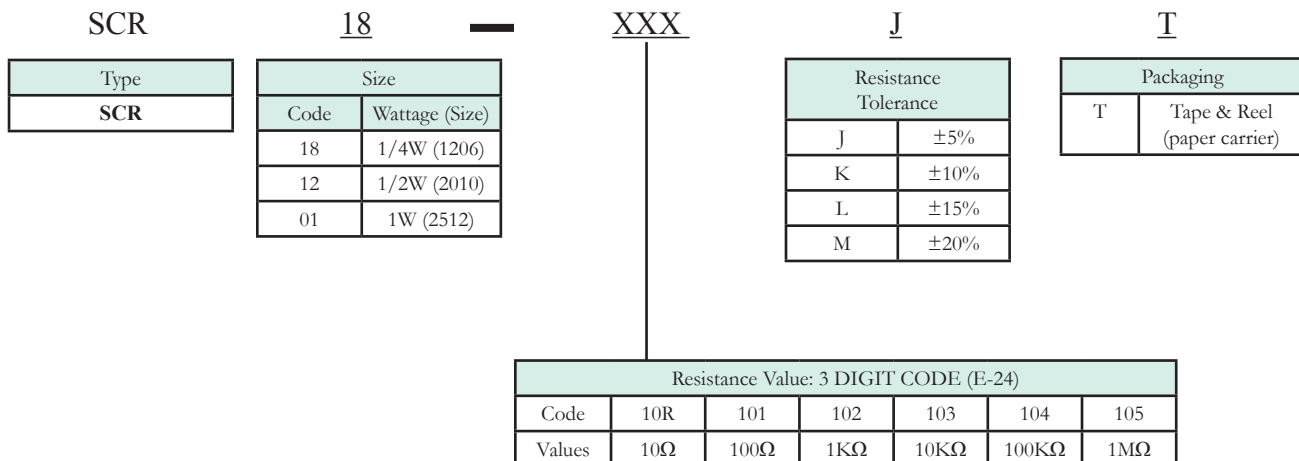


Dimensions: mm						
Style	Package	L	W	l1	l2	H
SCR18	1206	3.10 ± 0.10	1.60 ± 0.10	0.50 ± 0.20	0.45 ± 0.20	0.60 ± 0.15
SCR12	2010	5.00 ± 0.20	2.50 ± 0.20	0.65 ± 0.25	0.60 ± 0.25	0.55 ± 0.10
SCR01	2512	6.40 ± 0.20	3.20 ± 0.20	0.65 ± 0.25	0.90 ± 0.25	0.60 ± 0.10

## General Specification

Style	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (TCR: ppm / °C)	Resistance Range	Standard Resistance Value
SCR18	1/4 W	200V	400V	±5% (J) ±10% (K) ±15% (L) ±20% (M)	±100	10Ω~1MΩ	E-24
SCR12	1/2 W						
SCR01	1 W						

## PART NUMBERING SYSTEM

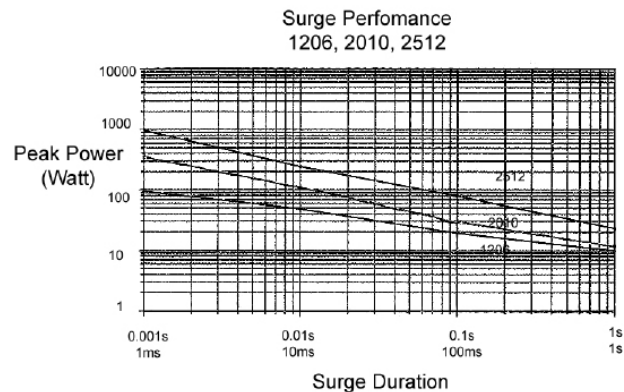


First two digits are significant figures and third digit is number of zeros.  
Letter "R" indicates decimal values under 100 ohms.



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**LEADFREE**  
RoHS Compliant



Performance Test	Specification	Test Method
DC Resistance	J: $\pm 5\%$ , K: $\pm 10\%$ , L: $\pm 15\%$ , M: $\pm 20\%$	IEC 60115-1 4.5/JIS C 5202 5.1 Measure the resistance value.
Short Time Overload	$\Delta R \leq \pm(2\% + 0.1\Omega)$	IEC 6011501 4.13/JIS C 5202 5.5 2.5X Rated voltage or Max. Overload Voltage for 5 sec., measure resistance after 30 minutes.
Solderability	Over 95% of termination must be covered with solder.	IEC 60115-1 4.17/JIS C 5202 6.5 After immersing flux, dip in the $235 \pm 2^\circ\text{C}$ molten solder bath for $2 \pm 0.5$ sec.
Resistance to Solder Heat	$\Delta R \leq \pm(1\% \pm 0.1\Omega)$ No mechanical damage	IEC 60115-1 4.18/JIS C 5202 6.4 With $260 \pm 5^\circ\text{C}$ for $10 \pm 1$ sec.
Temperature Coefficient of Resistance (TCR)	$\pm 100\text{ppm} / ^\circ\text{C}$	EC 60115-1 4.8.4.2/JIS C 5202 5.2 Test temperature: $25^\circ\text{C} (T1) \rightarrow -55^\circ\text{C}(T2)$ $25^\circ\text{C} (T1) \rightarrow +155^\circ\text{C}(T2)$ $\text{TCR} (\text{ppm}/^\circ\text{C}) = \frac{R2-R1}{R1} \times \frac{1}{T2-T1} \times 10^6$ T1: $25^\circ\text{C}$ T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Load Life Humidity	$\Delta R \leq \pm(3\% \pm 0.1\Omega)$	IEC 60115-1 4.24.2/JIS C 5202 7.9 Maintain the temperature of the resistor at $40 \pm 2^\circ\text{C}$ and 90~95% R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hours for 1000 +48/-0 hours. After 1~4 hours, measure the resistance value.
Load Life	$\Delta R \leq \pm(3\% \pm 0.1\Omega)$	IEC 60115-1 4.25.1/JIS C 5202 7.10 Permanent resistance change after 1000+48/-0 hours(1.5 hours ON, 0.5 hours OFF) at RCWV or Max. Keep the resistor at $70 \pm 2^\circ\text{C}$ ambient.
Intermittent Overload	$\Delta R \leq \pm(5\% \pm 0.1\Omega)$ No mechanical damage.	JIS C 5202 5.8 $4.0 \times$ Rated voltage (Max. Overload Voltage) 1 sec ON, 25 sec OFF, test 10,000 cycles.
Temperature Cycle	$\Delta R \leq \pm(1\% \pm 0.1\Omega)$ No mechanical damage.	IEC 60115-1 4.19/JIS C 5202 7.4 Repeat 5 cycles as follows $-55^\circ\text{C}(30\text{min.}) \sim +25^\circ\text{C}(2 \sim 3\text{min.})$ $+155^\circ\text{C}(30\text{min.}) \sim +25^\circ\text{C}(2 \sim 3\text{min.})$
Insulation Resistance	Between termination and coating must be over 1000M $\Omega$ .	IEC 60115-1 4.6.1.1/JIS C 5202 5.6 Test voltage: $100 \pm 15\text{V}$
Bending Strength	$\Delta R \leq \pm(1\% \pm 0.1\Omega)$	IEC 60115-1 4.33 Resistance change after bended on the 90mm PCB. Bend: 2mm for 1206, 2010, 2512