

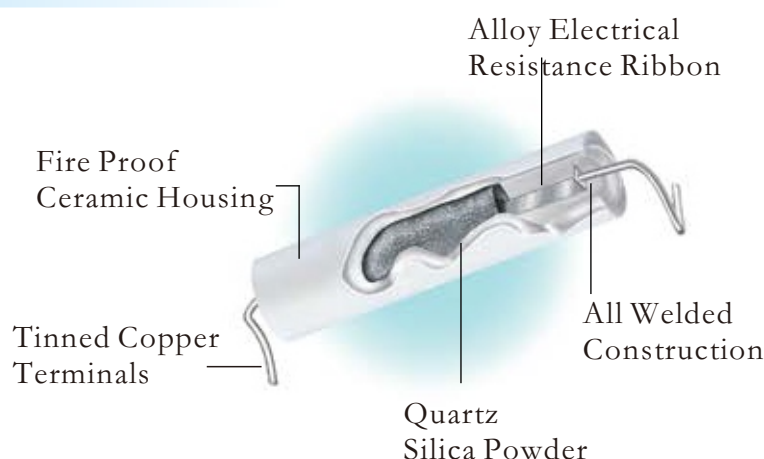


● Applications

The introduction of these low ohm / current sense resistors with surface mounting has broadened the scope for designers substantially as they fulfill a long standing demand for surface mount high power resistors for current sense purposes.

Note : Due to recent technological advances, the ceramic cases used may be steatite ceramic or cordierite ceramic or high alumina ceramic depending on the nature of the application. Hence the ceramic cases may be off-white or variations of brown and variations of grey; colours which are inherent to these ceramic materials.

● Constructions



● Ordering Information

Example:

RLS	5	J	60	R047
(1)	(2)	(3)	(4)	(5)
Series Name	Power Rating	Resistance Tolerance	TCR	Resistance

(1)Type: RLS SERIES

(2)Power Rating: 1.5S=1.5W、3S=3W、5S=5W

(3)Tolerance: K \pm 10% ; J \pm 5% ; H \pm 3% ; G \pm 2% ; F \pm 1%

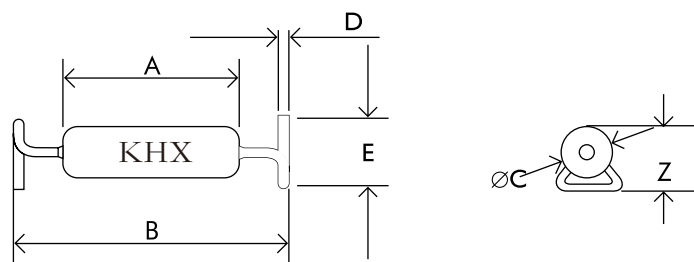
(4)TCR: \pm 60 to 400 ppm/ $^{\circ}$ C

(5)Resistance Value:10R0=10R、R10=0.1 Ω 、47R0=47 Ω

● Reference Standards

MIL-STD-202

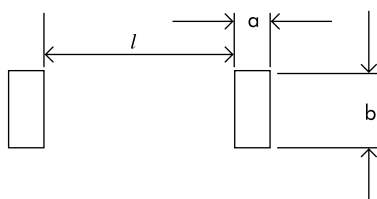
● Dimensions



Type	Power Rating at 40° C	Dimensions						Resistance Range		Typical Weight Per PC (gms)
		A (MAX)	B (±1.0)	C (±1.0)	D (±0.5)	E (±0.5)	Z (±1.0)	min	max	
RLS 1.5S	1.5W	11.0	17.0	3.5	0.8	5.0	6.5	R004	R10	0.6
RLS 3S	3W	15.0	20.0	5.5	0.8	8.0	8.0	R003	R22	1.2
RLS 5S	5W	23.0	27.0	8.5	1.0	13.0	11.0	R0015	R39	3.5

● Important Mounting / Assembly Data

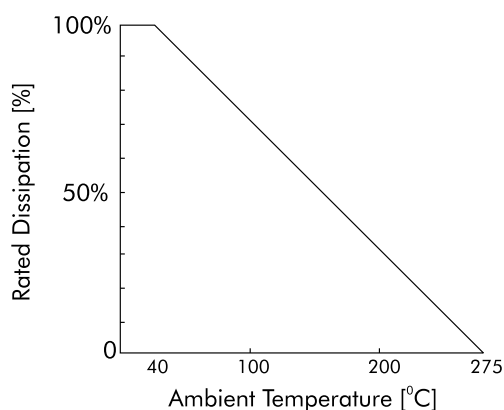
For the guidance of the Design Engineer, our applications laboratory has given the recommended pad size and geometry which is shown below



Type	Dimensins(mm)		
	a	b	/
RLS 1.5S	2.5 (min)	5.5	13.0
RLS 3S	2.5 (min)	9.5	16.0
RLS 5S	2.5 (min)	16.0	23.5

Resistance value checking to be done using 4½ digit micro ohm meter and insulated clips. The designer of the pad layout might prefer to split the pad for four wire checking. The temperature rise of these SMD resistors is dependent on the solder pad dimensions used and must be taken into account by the design engineer.

● Derating Curve



● Applications And Ratings

Type	Rated Power (W)	Resistance Range (Ω)		TCR(PPM/ $^{\circ}$ C)	Tolerance Range	Operating Temperature
		min	max			
RLS	1.5W	R004	R10	± 60 to 400 ppm/ $^{\circ}$ C	K $\pm 10\%$, J $\pm 5\%$ H $\pm 3\%$, G $\pm 2\%$ F $\pm 1\%$	-55° C to $+275^{\circ}$ C
	3W	R003	R22			
	5W	R0015	R39			

● Performance Characteristics

Parameter/Performance Test & Test Method	Performance Requirements
Power Rating (Rated Ambient Temperature)	Full power dissipation at 40° C and linearly derated to zero at 275° C (Refer derating curve above)
Resistance Tolerances Available	$\pm 10\%$ [K]; $\pm 5\%$ [J]; $\pm 3\%$ [H]; $\pm 2\%$ [G]; $\pm 1\%$ [F]
Operating Temperature Range	-55° C to $+275^{\circ}$ C (with suitable derating as per derating curve)
Voltage Proof / Limiting Voltage / Max. Working Voltage	$V = P \times R$
Voltage Proof / Dielectric Withstanding Voltage (Based on 1000V rms for 60 secs)	DR $\pm (0.2\%R + R0005)$ No flashover or mechanical damage
Insulation Resistance [MIL STD 202F - Test method 302]	$> 1000M$ (Min)
Short Time Overload (5 x Rated power upto 2 watts and 10 x Rated Power 3 watts and above for 5 secs)	DR $\pm [0.5\%R + R0005]$ - Average DR $\pm [1\%R + R0005]$ - for resistance values near maximum range
Temperature Co-efficient of Resistance (Measured from -55° C to $+125^{\circ}$ C referenced to $+25^{\circ}$ C)	± 60 to 400 ppm/ $^{\circ}$ C (Depending on resistance value)
Thermal Shock [-65° C to $+125^{\circ}$ C 5 cycles, 15 min at each extreme temperature]	DR $\pm [0.2\%R + R0005]$ - Average
Moisture Resistance [MIL STD 202F Test method 106E with step 7b eliminated]	DR $\pm [0.2\%R + R0005]$
Damp Heat (Steady State) / Humidity (70° C at 95% R.H for 250 hours)	DR $\pm [0.5\%R + R0005]$
Endurance - Load Life [70° C with limiting voltage - 1.5 hours on / 0.5 hours off]	DR $\pm [1.5\%R + R0005]$ Average - 2000 hour duration DR $\pm [0.5\%R + R0005]$ Typical - 1000 hour duration
Solvent Resistance [IPA for 60 secs ± 10 secs]	No effect on case filling / marking
Resistance to Soldering Heat (260° C - 270° C for 4 secs)	DR $\pm [0.1\%R + R0005]$ - Typical
Solderability (MIL STD 202F Test Method 208F)	Must meet the requirements laid down (95% satisfactory coverage)
Marking	As per IEC Pub. 60062