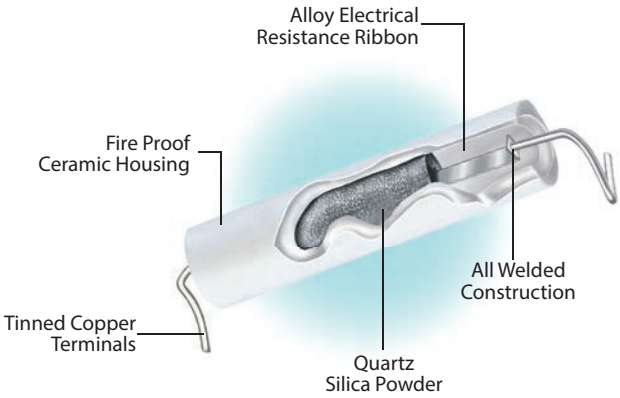


SURFACE MOUNT RESISTORS
CERAMIC ENCASED
CURRENT SENSE

RLS
SERIES
POWER TYPE

Power Ceramic Encased Resistors
Current Sense /
Industrial Applications

- 1.5W to 5W
- R0015 to R39

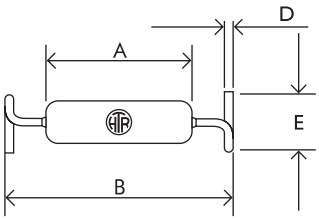
AEC-Q200 Qualified

Pb-free * RoHS COMPLIANT

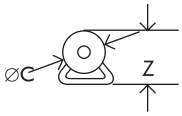
SURFACE MOUNT CERAMIC ENCASED CURRENT SENSE

RLS

PHYSICAL CONFIGURATION



SIDE VIEW

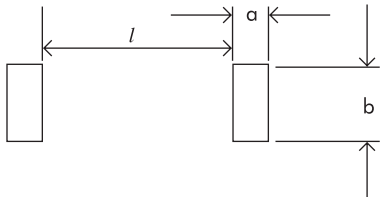


PROFILE

HTR TYPE	POWER RATING at 40°C	DIMENSIONS (mm)						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	
RL 1.5S	1.5W	11.0	17.0	3.5	0.8	5.0	6.5	R004	R10	0.6
RL 3S	3W	15.0	20.0	5.5	0.8	8.0	8.0	R003	R22	1.2
RL 5S	5W	23.0	27.0	8.5	1.0	13.0	11.0	R0015	R39	3.5

IMPORTANT MOUNTING / ASSEMBLY DATA

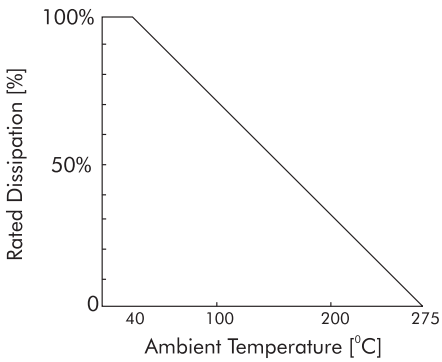
For the guidance of the Design Engineer, our applications laboratory has given the recommended pad size and geometry which is shown below



HTR TYPE	DIMENSIONS (mm)		
	a	b	*l*
RL 1.5S	2.5 (min)	5.5	13.0
RL 3S	2.5 (min)	9.5	16.0
RL 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



ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

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	±10% [K]; ±5% [J]; ±3% [H]; ±2%[G]; ±1% [F]
Operating Temperature Range	-55°C to +275°C (with suitable derating as per derating curve)
Voltage Proof / Limiting Voltage / Max. Working Voltage	$V = \sqrt{PxR}$
Voltage Proof / Dielectric Withstanding Voltage (Based on 1000V rms for 60 secs)	DR ± (0.2% + 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 ± [0.5% + R0005] - Average DR ± [1% + R0005] - for resistance values near maximum range
Temperature Co-efficient of Resistance (Measured from-55°C to +125°C referenced to +25°C)	± 60 to 400 ppm/°C (Depending on resistance value)
Thermal Shock [-65°C to +125°C, 5 cycles, 15 min at each extreme temperature]	DR ± [0.2% + R0005] - Average
Moisture Resistance [MIL STD 202F Test method 106E with step 7b eliminated]	DR ± [0.2% + R0005]
Damp Heat (Steady State) **/ Humidity** (70°C at 95% R.H for 250 hours)	DR ± [0.5% + R0005]
Endurance - Load Life [70°C with limiting voltage - 1.5 hours on / 0.5 hours off]	DR ± [1.5% + R0005] Average - 2000 hour duration DR ± [0.5% + R0005] Typical - 1000 hour duration
Solvent Resistance [IPA for 60 secs ± 10 secs]	No effect on case filling / marking

MECHANICAL SPECIFICATIONS

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Resistance to Soldering Heat (260°C - 270°C for 4 secs)	ΔR ± [0.1% + R0005] - Typical
Solderability (MIL STD 202F Test Method 208F)	Must meet the requirements laid down (95% satisfactory coverage)
Marking	As per IEC Pub. 60062

TYPICAL 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 : The ceramic cases used may be steatite ceramic, corderite ceramic or high alumina ceramic. Thus, the ceramic cases may be off-white or variations of brown / grey, colours which are inherent to these ceramic material.

ORDERING INFORMATION

Series	HTR Type	Packing	Resistance Value	Tolerance
RLS	RL3S / RL3S*	Bulk RL3S / RL3S*	R047	J

For RoHS version - RL3S *