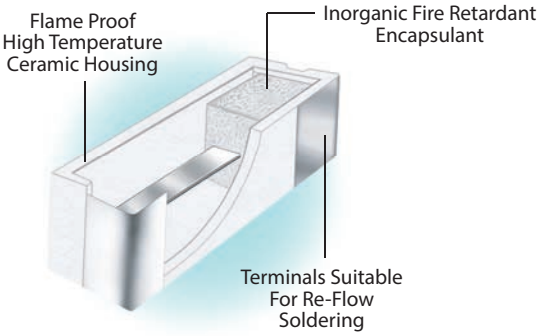


SURFACE MOUNT RESISTORS
CERAMIC ENCASED TYPE

HCALS
SERIES
POWER TYPE
Ceramic Encased
Current Sense Resistors

- Tape and Reel packing available.
- 2W TO 3W
- R001 TO R10

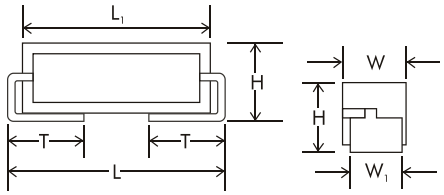
AEC-Q200 Qualified

Pb-free * RoHS COMPLIANT

SURFACE MOUNT RESISTORS CERAMIC ENCASED TYPE

HCALS

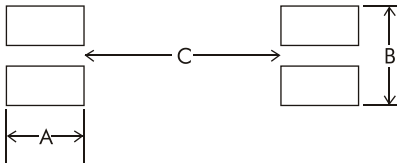
PHYSICAL CONFIGURATION



SIDE VIEW PROFILE

HTR TYPE	POWER RATING 70°C	DIMENSIONS (mm)						RESISTANCE RANGE		TYPICAL WEIGHT PER PC (gms)	SIZE	PACKAGING NO. OF PCS PER REEL
		L	L_1	H	W	W_1	T	min	max			
C2LS	2W	11.0 (±0.8)	10.0 (±0.7)	5.3 (±0.6)	7.0 (±0.7)	5.5 (±0.3)	2.25 (min)	R001	R08	0.8	4527	1000
C3LS	3W	17.0 (±0.8)	16.0 (±0.7)	7.8 (±0.6)	7.0 (±0.7)	5.5 (±0.3)	2.5 (min)	R001	R10	2.0	6927	700

Resistance values must be checked using 4½ digit micro ohm meter with 4 wire system

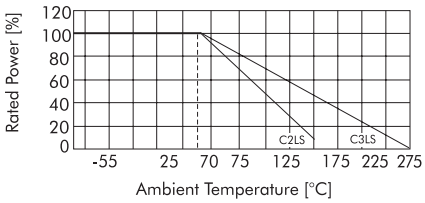


IMPORTANT MOUNTING / ASSEMBLY DATA

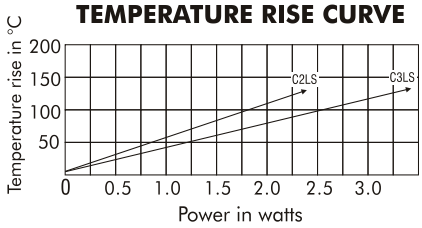
For the guidance of the Design Engineer, our applications laboratory has given the recommended Pad size and Geometry which is shown below:

HTR TYPE	DIMENSIONS (mm)		
	A	B	C
C2LS	3.94	5.84	5.21
C3LS	3.94	5.97	11.94

DERATING CURVE



TEMPERATURE RISE CURVE



ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Power Rating (Rated Ambient Temperature)	Full Power dissipation at 70°C and linearly derated to zero at 275°C - (C3LS) & 155°C - (C2LS) (Refer Derating curve above)
Resistance Tolerances Available	±10% (K); ±5% (J); ±3%(H); ±2%(G); ±1%(F)
Operating Temperature Range	-55°C to +155°C (C2LS) and -55°C to +275°C (C3LS) with suitable derating as per derating curve shown above.
Voltage Rating / Limiting Voltage / Max Working Voltage	$V=\sqrt{PxR}$
Voltage Proof / Dielectric Withstanding Voltage (based on 1000V rms for 60 secs)	ΔR ± (0.2% + R0005) - No flashover or mechanical damage
Insulation Resistance [MIL STD 202F - Test Method 302]	>1000MΩ (min)
Short Time Overload (5 x Rated power for 5 secs)	ΔR ± (0.2% + R0005) - Average
Temperature Co-efficient of Resistance	± 60 to 400 ppm/°C (Depending on resistance value)
Thermal Shock [-65°C to +125°C, 5 cycles, 15 min. at each extreme temperature]	ΔR ± (0.2% + R0005) - Average
Temperature Rise (Ambient 30°C)	Refer temperature rise curve shown above
Moisture Resistance [MIL STD 202F - Test Method 106E with step 7b eliminated]	ΔR ± (0.5% + R0005) - Average
Damp Heat (Steady State) / Humidity (40°C at 95% R.H for 250 hours)	ΔR ± (0.5% + R0005) - Typical
Endurance - Load life (70°C with limiting voltage - 1.5 hours on / 0.5 hours off for 1000 hours)	ΔR ± (1.0% + R0005) - Average
Solvent Resistance (IPA for 60 secs ± 10 secs)	No effect on case filling / marking

SURFACE MOUNT RESISTORS CERAMIC ENCASED TYPE

HCALS

MECHANICAL SPECIFICATIONS

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Resistance to Soldering Heat (260°C - 270°C for 4 secs)	ΔR ± (0.5% + R0005) - Typical
Solderability (MIL STD 202F - Test method 208F)	Must meet the requirements laid down (95% satisfactory coverage)

Note:
The ceramic cases used may be steatite ceramic or corderite ceramic or high alumina ceramic. Hence, the ceramic cases may be off-white or variations of brown and variations of grey; colours which are inherent to these ceramic materials.

ORDERING INFORMATION

Series	HTR Type	Packing	Resistance Value	Tolerance
HCALS	C2LS / C2LS*	Bulk C2LS / C2LS* Tape & Reel C2LSTR / C2LS*TR	R005	J

1. For Tape & Reel - C2LS TR
2. For RoHS version - C2LS *
3. Add 100% to typical weight per pc given to ascertain gross weight of consignment.