



**LOW OHM  
CURRENT SENSE RESISTORS**

**HEW  
SERIES**

- Open frame PCB mounting radial type.
- Edge welding for reduced PCB footprint.
- Negligible inductance.
- Very low TCR available.
  - 1W to 5W .
  - R0025 to R10.

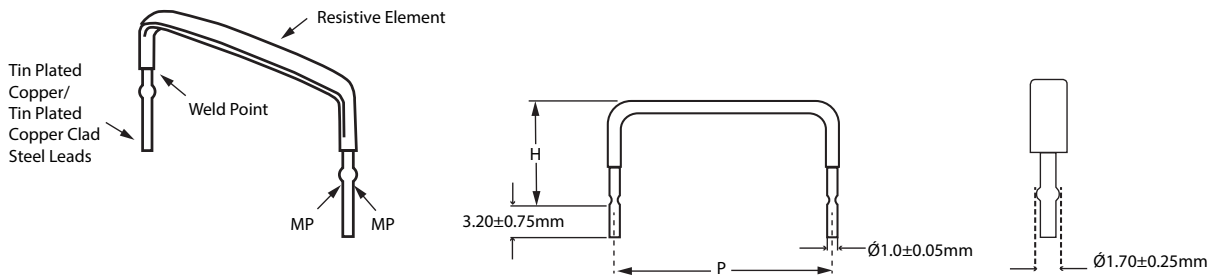
**AEC-Q200 Qualified**





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**PHYSICAL CONFIGURATION**

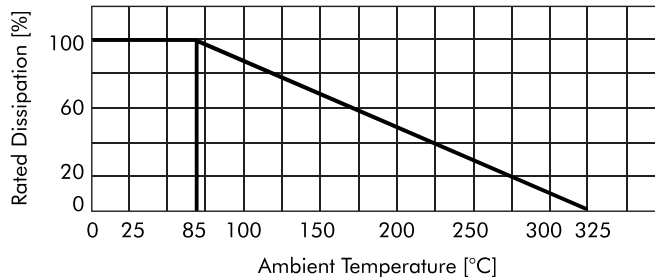


MP - Resistance Measuring Point

**DIMENSIONAL TABLE**

HTR TYPE	POWER RATING AT 85°C	DIMENSIONS (mm)		RESISTANCE RANGE		TYPICAL WEIGHT PER PC (GMS) BASED ON RESISTANCE VALUE		
		P (+1.0/-0.5)	H (MAX.)	MIN.	MAX.	LOW	MED	HIGH
EW-1	1W	11.43	8.12	R003	R05	0.60	0.30	0.10
EW-3	3W	15.24	23.40	R0025	R10	1.60	1.00	0.40
EW-5	5W	20.32	22.40	R0025	R10	1.75	1.20	0.75

**POWER DERATING CURVE**



**ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS**

PARAMETER / PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
<b>Power Rating</b> (Rated Ambient Temperature)	Full power dissipation at 85° C and linearly derated to zero at + 325 ° C
<b>Insulation</b>	Not Insulated
<b>Resistance Tolerance</b>	±10%[K]; ±5%[J]; ±3%[H]; ±2%[G]; ±1%[F]
<b>Operating Temperature Range</b>	- 40° C to +125° C with suitable derating as per derating curve above
<b>Voltage Rating / Limiting Voltage / Max. Working Voltage</b>	$\sqrt{P \times R}$
<b>Temperature Co-efficient of Resistance</b> (Measured from -40°C to +125°C referenced to +25°C)	TCR as low as ±60ppm/°C to ±500ppm/°C [Depending on resistance value]
<b>Resistance wire/Ribbon TCR</b>	±20ppm [Depending on resistance value]
<b>Damp Heat</b> (Steady State) ( 40°C at 93 % R.H. for 1000 Hrs. – no load applied )	$\Delta R \pm < 1\%$ – Average
<b>Endurance – Load Life</b> [ 70°C with limiting voltage – 1.5 hours on / 0.5 hours off for 1000 hours ]	$\Delta R \pm < 1\%$ – Average
<b>Temperature Cycling</b> (-40°C to +125°C for 1000 cycles)	$\Delta R \pm < 1\%$ – Average

**MECHANICAL SPECIFICATION**

PARAMETER / PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
<b>Resistance to Soldering heat</b> - (260°C-270°C for 10 Secs)	$\Delta R \pm [ 0.2 \% + R0005 ]$ – Typical
<b>Solderability</b> ( As per IEC pub. 60068-2-20 )	Must meet the requirements laid down



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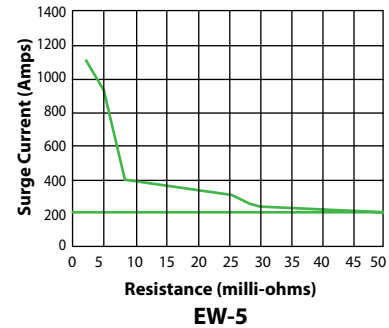
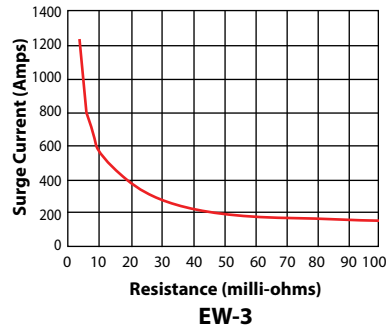
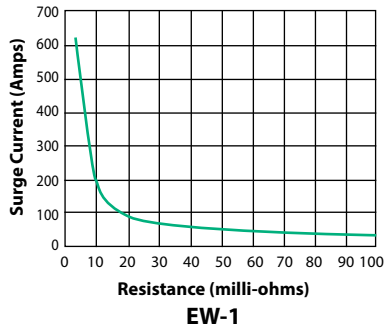
## THERMAL DATA

The unique construction of HEW series isolates the temperature of the resistance band from PCB material preventing damage to the PCB. Further, the thermal energy is dissipated to the air rather than being conducted to the PCB where potentially a nearby power component could be damaged.

The power derating curve provided above is only an approximate indication.

It must be noted that the resistance element of the HEW series is a solid metal alloy band that can tolerate significantly high temperatures which could be in excess of 300°C, in view of this the design engineer should base his selection on the heat limitations of the solder joints/PCB.

### PULSE/SURGE CHART (Typically 50 msec duration)



The charts provided above are merely indicative in nature and the designer must ratify this by actual testing for which samples can be provided. It is pertinent to point out that the high surge currents shown in the charts are due to the unique construction of HEW series & are far superior in surge applications as compared to any other resistor technology.

## TERMINATION

Material : Tin plated copper wire as per ASTM B 189-95 / Tin plated copper clad steel wire as per ASTM B 452-93 (ROHS Compliant / Lead-free Plating).

Strength : As per spec laid down as per ASTM B 189-95 / ASTM B 452-93.

## MARKING

The resistors will be marked as Resistance value followed by tolerance & then symbol “\*” for lead free leads & then date code depending upon space. (Resistance values like R0025/R003/R005 will be marked in milliohms)

e.g EW-1\* F R01–Marking will be 01F\*datecode & For EW-5\*H R005–Marking will be 5H\*datecode .

## PACKING

**FOREW-1** ⇒ When strip thickness 0.40mm 500 Resistors shall be packed in small box “A Type” of approximate size 200mmX150mmX70mm & for strip thickness > 0.40mm, 500 Resistors shall be packed in small box “I Type” of approximate size 70mmx70mmx70mm.

**FOREW-3** ⇒ When strip thickness 0.40mm 500 Resistors shall be packed in small box “A Type” of approximate size 200mmX150mmX70mm & for strip thickness > 0.40mm, 250 Resistors shall be packed in small box “I Type” of approximate size 70mmx70mmx70mm.

**FOREW-5** ⇒ When strip thickness 0.40mm 400 Resistors shall be packed in small box “A Type” of approximate size 200mmX150mmX70mm & for strip thickness > 0.40mm, 250 Resistors shall be packed in small box “I Type” of approximate size 70mmx70mmx70mm.