

## Type HS Series

### Key Features

- Established product with proven reliability
  - Leading the way with over 50 years of design and manufacturing experience
- 5 Watts to 300 Watts (500 Watt and 1000 Watt versions available)
  - Largest range on the market
- Versatile product
  - Bench mark in every industry
- Custom designs
  - Windings, terminations, mountings - We have a solution for your application
- Low resistance, low inductance and higher voltage versions available
  - Specialising the standard



TE Connectivity are the leading European supplier of standard and custom designed aluminium housed resistors for general-purpose use, power supplies, power generation and the traction industry. The HS is a range of extremely stable, high quality wire wound resistors capable of dissipating high power in a limited space with relatively low surface temperature. The power is rapidly dissipated as heat through the aluminium housing to a specified heatsink.

The resistors are made from quality materials for optimum reliability and stability. TE can test resistors to conform to relevant international, MIL or customer specifications.

TE are happy to advise on the use of resistors for pulse applications and to supply information for high voltage use and low-ohmic value, alternative mountings and termination type.

### Applications

- Braking Resistor
- Balancing Resistor
- Capacitor Charging & Discharging
- Crowbar
- Filter
- Electrical Machinery general use
- Available through Distribution

### Characteristics - Electrical HSA & HSC - 5 Watts to 75 Watts

	HSA5	HSA10	HSA25	HSA50	HSC75
Dissipation @ 25°C with Heatsink (Watts):	10	16	25	50	75
Without Heatsink:	5.5	8	12.5	20	45
Ohmic Value Min (Ohms):	R01	R01	R01	R01	R05
Max:	10K	15K	36K	100K	50K
Max. Working Voltage (DC or ACrms) Volts:	160	265	550	1250	1400
Dielectric Strength (AC Peak) Volts:	1400	1400	2500	2500	5000
Stability (% resistance change, 1000 hours) (%):	1	1	1	1	2
Standard Heatsink - Area (mm <sup>2</sup> ):	41500	41500	53500	53500	99500
Thickness (mm):	1	1	1	1	3
Number of Mounting Holes:	2 hole	2 hole	2 hole	2 hole	4 hole

### Characteristics - Electrical HSC - 100 Watts to 300 Watts

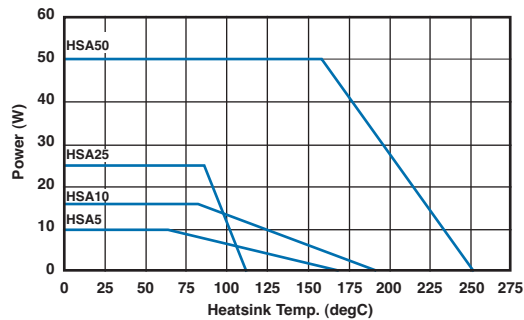
	HSC100	HSC150	HSC200	HSC250	HSC300
Dissipation @ 25°C with Heatsink (Watts):	100	150	200	250	300
Without Heatsink:	50	55	50	60	75
Ohmic Value Min (Ohms):	R05	R10	R10	R10	R10
Max:	100K	100K	50K	68K	82K
Max. Working Voltage (DC or ACrms) Volts:	1900	2500	1900	2200	2500
Dielectric Strength (AC Peak) Volts:	5000	5000	5600	5600	5600
Stability (% resistance change, 1000 hours) (%):	2	2	3	3	3
Standard Heatsink - Area (mm <sup>2</sup> ):	99500	99500	375000	476500	578000
Thickness (mm):	3	3	3	3	3
Number of Mounting Holes:	4 hole	4 hole	6 hole	6 hole	6 hole

## Type HS Series

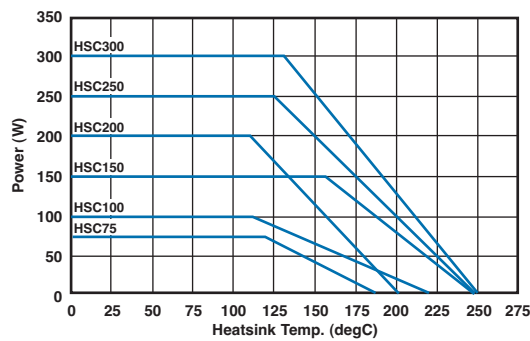
### Characteristics - Electrical

<b>Long Term Stability:</b>	For improvements in long-term stability, resistors must be derated as follows; for 50% of stated $\Delta R$ maximum dissipation must not exceed 70% of rating; for 25% of stated $\Delta R$ maximum, dissipation must not exceed 50% of rating
<b>Insulation Resistance:</b>	Dry: 10,000M $\Omega$ minimum. After moisture test: 1000M $\Omega$ minimum.
<b>Heat Dissipation:</b>	Although the use of proprietary heat sinks with lower thermal resistance is acceptable, up rating is not recommended. The use of proprietary heat sink compound to improve thermal conductivity is recommended for optimum performance of all sizes but essential for HSC200, HSC250 & HSC300
<b>Specification:</b>	Temperature coefficient below 100R, 50ppm/ $^{\circ}$ C Temperature coefficient above 100R, 30ppm/ $^{\circ}$ C Tolerance, 5% standard: 10%, 3%, 2%, 0.5% & 0.25% available Tolerance for values below R10, 10% standard

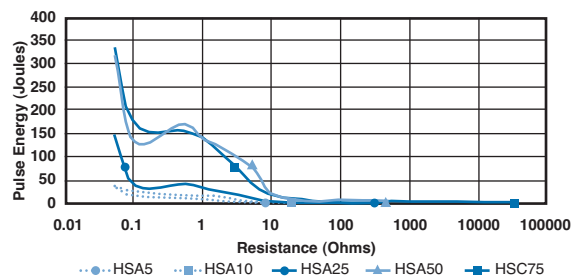
### Derating Curve HSA5 to HSA50



### Derating Curve HSC75 to HSC300

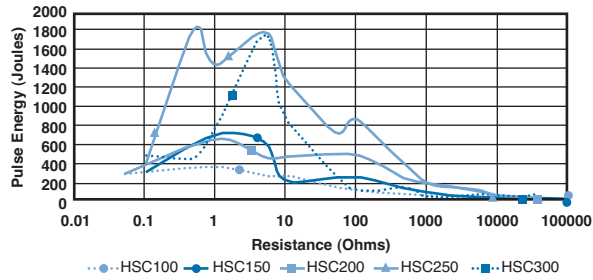


### Pulse Energy HSA5 to HSC75

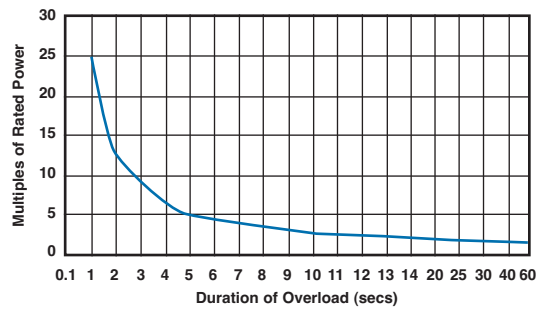


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### Pulse Energy HSC100 to HSC300

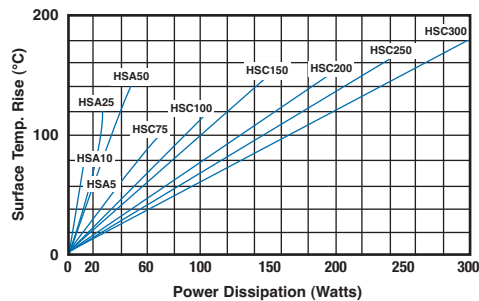


### Power Overload



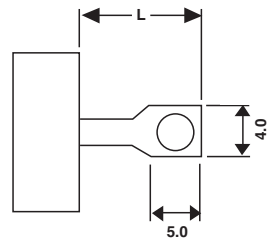
This graph indicates the amount that the rated power (at 20°C) of the standard HS Series resistor may be increased for overloads of 100mS to 60S

### Surface Temperature Rise



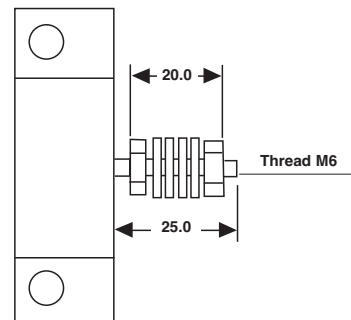
For resistor mounted on standard heatsink, related to power dissipation

### Product Specifications - HSA5 - HSC150



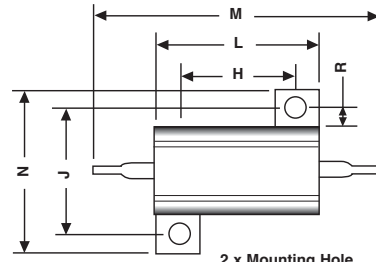
Type	L
HSA5, 10	7
HSA25, 50	10
HSC75, 100, 150	8

### HSC200 - HSC300



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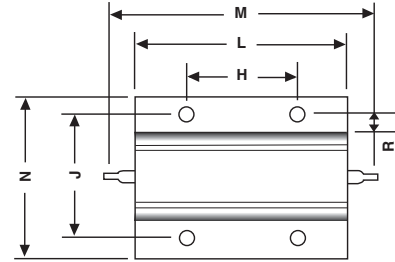
### Dimensions - HSA5 - HSA50



2 x Mounting Hole

HSA5 - 2.4mm  
 HSA10 - 2.4mm  
 HSA25 - 3.3mm  
 HSA50 - 3.3mm

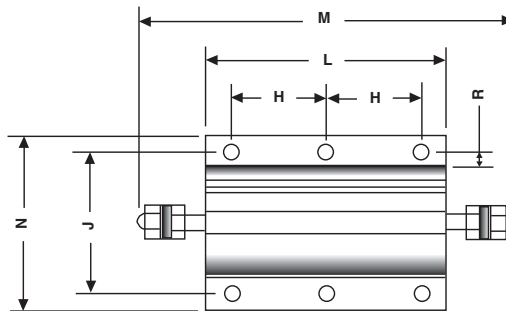
### HSC75 - HSC150



4 x Mounting Hole

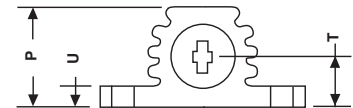
HSC75 - 4.4mm  
 HSC100 - 4.4mm  
 HSC150 - 4.4mm

### HSC200+



6 x Mounting Hole

HSC200 - 5.3mm  
 HSC250 - 5.3mm  
 HSC300 - 6.5mm



Type	H±0.3	J±0.3	K±0.2	L Max	M Max	N Max	P Max	R Min	T±0.5	U Max
HSA5	11.3	12.4	2.4	17.0	30.0	17.0	9.0	1.9	4.3	2.5
HSA10	14.3	15.9	2.4	21.0	36.5	21.0	11.0	1.9	5.2	3.2
HSA25	18.3	19.8	3.3	29.0	51.0	28.0	15.0	2.8	7.2	3.2
HSA50	39.7	21.4	3.3	51.0	72.5	30.0	17.0	2.8	8.2	3.2
HSC75	29.0	37.0	4.4	49.0	71.0	47.5	26.0	5.0	11.5	3.5
HSC100	35.0	37.0	4.4	65.5	87.5	47.5	26.0	5.0	11.5	3.5
HSC150	58.0	37.0	4.4	98.0	122.0	47.5	26.0	5.0	11.5	3.5
HSC200	35.0	57.2	5.3	90.0	143.0	73.0	42.0	5.6	20.25	5.3
HSC250	44.5	57.2	5.3	109.0	163.0	73.0	42.0	5.6	20.25	5.3
HSC300	52.0	59.0	6.5	128.0	180.0	73.0	42.0	5.6	20.25	5.3

### How to Order

HS	A	50	680R	J
<b>Common Part</b>	<b>Mounting Style</b>	<b>Power Rating</b>	<b>Resistance Value</b>	<b>Tolerance</b>
HS - Standard NHS - Low Inductance	A - Single Opposing mounting Feet B - Flange One Side C - Flange Two Sides	10 Watt = HSA5 16 Watt = HSA10 25 Watt = HSA25 50 Watt = HSA50 75 Watt = HSA75 etc	0.1ohm (100 mille ohms) R10 1ohm (1000 mille ohms) 1R0 1K (1000 ohms) 1KO	F - 1% G - 2% E - 3% J - 5% K - 10%

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Part Number	Description
HSC100100RJ	RES CHAS MNT 100 OHM 5% 100W
HSC10010KJ	RES CHAS MNT 10K OHM 5% 100W
HSC10010RJ	RES CHAS MNT 10 OHM 5% 100W
HSC100120RJ	RES CHAS MNT 120 OHM 5% 100W
HSC10012R4J	RES CHAS MNT 12.4 OHM 5% 100W
HSC10012RJ	RES CHAS MNT 12 OHM 5% 100W
HSC100150RJ	RES CHAS MNT 150 OHM 5% 100W
HSC10015RJ	RES CHAS MNT 15 OHM 5% 100W
HSC10016R6J	RES CHAS MNT 16.6 OHM 5% 100W
HSC100180RJ	RES CHAS MNT 180 OHM 5% 100W
HSC10018RJ	RES CHAS MNT 18 OHM 5% 100W
HSC1001K0J	RES CHAS MNT 1K OHM 5% 100W
HSC1001K2J	RES CHAS MNT 1.2K OHM 5% 100W
HSC1001K5J	RES CHAS MNT 1.5K OHM 5% 100W
HSC1001R0F	RES CHAS MNT 1 OHM 1% 100W
HSC1001R0J	RES CHAS MNT 1 OHM 5% 100W
HSC1001R5J	RES CHAS MNT 1.5 OHM 5% 100W
HSC100200RJ	RES CHAS MNT 200 OHM 5% 100W
HSC100204RJ	RES CHAS MNT 204 OHM 5% 100W
HSC10020RF	RES CHAS MNT 20 OHM 1% 100W
HSC10020RJ	RES CHAS MNT 20 OHM 5% 100W
HSC100220RJ	RES CHAS MNT 220 OHM 5% 100W
HSC10022KJ	RES CHAS MNT 22K OHM 5% 100W
HSC10022RF	RES CHAS MNT 22 OHM 1% 100W
HSC10022RJ	RES CHAS MNT 22 OHM 5% 100W
HSC10025RJ	RES CHAS MNT 25 OHM 5% 100W
HSC100270RJ	RES CHAS MNT 270 OHM 5% 100W
HSC10027RJ	RES CHAS MNT 27 OHM 5% 100W
HSC1002K0J	RES CHAS MNT 2K OHM 5% 100W
HSC1002K2J	RES CHAS MNT 2.2K OHM 5% 100W
HSC1002K5J	RES CHAS MNT 2.5K OHM 5% 100W
HSC1002K7J	RES CHAS MNT 2.7K OHM 5% 100W
HSC1002R2J	RES CHAS MNT 2.2 OHM 5% 100W
HSC1002R7J	RES CHAS MNT 2.7 OHM 5% 100W
HSC100330RJ	RES CHAS MNT 330 OHM 5% 100W
HSC10033KJ	RES CHAS MNT 33K OHM 5% 100W
HSC10033RJ	RES CHAS MNT 33 OHM 5% 100W
HSC100360RJ	RES CHAS MNT 360 OHM 5% 100W
HSC10036RJ	RES CHAS MNT 36 OHM 5% 100W
HSC100390RJ	RES CHAS MNT 390 OHM 5% 100W
HSC10039RJ	RES CHAS MNT 39 OHM 5% 100W
HSC1003K3J	RES CHAS MNT 3.3K OHM 5% 100W

HSC1003K9J	RES CHAS MNT 3.9K OHM 5% 100W
HSC1003R0J	RES CHAS MNT 3 OHM 5% 100W
HSC1003R3J	RES CHAS MNT 3.3 OHM 5% 100W
HSC1003R9J	RES CHAS MNT 3.9 OHM 5% 100W
HSC100470RJ	RES CHAS MNT 470 OHM 5% 100W
HSC10047KJ	RES CHAS MNT 47K OHM 5% 100W
HSC10047RJ	RES CHAS MNT 47 OHM 5% 100W
HSC1004K7J	RES CHAS MNT 4.7K OHM 5% 100W
HSC1004R0J	RES CHAS MNT 4 OHM 5% 100W
HSC1004R3J	RES CHAS MNT 4.3 OHM 5% 100W
HSC1004R7J	RES CHAS MNT 4.7 OHM 5% 100W
HSC10050KJ	RES CHAS MNT 50K OHM 5% 100W
HSC10050RJ	RES CHAS MNT 50 OHM 5% 100W
HSC100560RJ	RES CHAS MNT 560 OHM 5% 100W
HSC10056RJ	RES CHAS MNT 56 OHM 5% 100W
HSC1005R6J	RES CHAS MNT 5.6 OHM 5% 100W
HSC100600RJ	RES CHAS MNT 600 OHM 5% 100W
HSC10060RJ	RES CHAS MNT 60 OHM 5% 100W
HSC100680RJ	RES CHAS MNT 680 OHM 5% 100W
HSC10068KJ	RES CHAS MNT 68K OHM 5% 100W
HSC10068RJ	RES CHAS MNT 68 OHM 5% 100W
HSC1006K0J	RES CHAS MNT 6K OHM 5% 100W
HSC1006K8J	RES CHAS MNT 6.8K OHM 5% 100W
HSC1006R4J	RES CHAS MNT 6.4 OHM 5% 100W
HSC1006R8J	RES CHAS MNT 6.8 OHM 5% 100W
HSC10075RJ	RES CHAS MNT 75 OHM 5% 100W
HSC100800RJ	RES CHAS MNT 800 OHM 5% 100W
HSC100820RJ	RES CHAS MNT 820 OHM 5% 100W
HSC10082RJ	RES CHAS MNT 82 OHM 5% 100W
HSC1008R0J	RES CHAS MNT 8 OHM 5% 100W
HSC1008R2J	RES CHAS MNT 8.2 OHM 5% 100W
HSC100R044J	RES CHAS MNT 0.044 OHM 5% 100W
HSC100R10J	RES CHAS MNT 0.1 OHM 5% 100W
HSC100R18J	RES CHAS MNT 0.18 OHM 5% 100W
HSC100R22J	RES CHAS MNT 0.22 OHM 5% 100W
HSC100R27J	RES CHAS MNT 0.27 OHM 5% 100W
HSC100R39J	RES CHAS MNT 0.39 OHM 5% 100W
HSC100R47J	RES CHAS MNT 0.47 OHM 5% 100W
HSC100R50J	RES CHAS MNT 0.5 OHM 5% 100W
HSC100R56J	RES CHAS MNT 0.56 OHM 5% 100W
HSC100R68J	RES CHAS MNT 0.68 OHM 5% 100W
HSC100R82J	RES CHAS MNT 0.82 OHM 5% 100W