HS Aluminium Housed Resistors

Manufactured in line with the requirements of MIL 18546 and IEC 115, designed for direct heatsink mounting with thermal compound to achieve maximum performance.

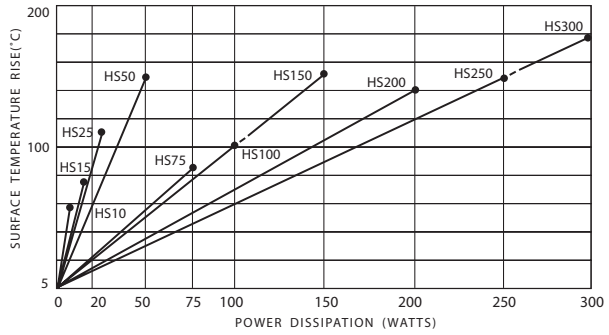
- High Power to volume
- Wound to maximise High Pulse Capability
- Values from R005 to 100K
- Custom designs welcome
- RoHS Compliant

Characteristics

Tolerance (Code):	Standard ±5% (J) and ±10% (K). Also available ±1% (F), ±2% (G) and ±3% (H)
Tolerance for low Ω values:	Typically ≥ R05 ±5% ≤ R047 ±10%
Temperature coefficients:	Typical values < 1K 100ppm Std. > 1K 25ppm Std. For lower TCR's please contact Arcol
Insulation resistance (Dry):	10,000 MΩ minimum
Power dissipation:	At high ambient temperature dissipation derates linearly to zero at 200°C
Ohmic values:	From R005 to 100K depending on wattage size
Low inductive (NHS):	Specify by adding N before HS Series code, e.g. NHS50
NHS ohmic value:	Divide standard HS maximum value by 4
NHS working volts:	Divide standard HS maximum working voltage by 1.414

Temp. Rise & Power Dissipation

Surface temperature of resistor related to power dissipation. The resistor is standard heatsink mounted using a proprietary heatsink compound.



Heat Dissipation

Heat dissipation: Whilst the use of proprietary heat sinks with lower thermal resistances is acceptable, uprating is not recommended. For maximum heat transfer it is recommended that a heat sink compound be applied between the resistor base and heat sink chassis mounting surface. It is essential that the maximum hot spot temperature of 200°C is not exceeded, therefore, the resistor must be mounted on a heat sink of correct thermal resistance for the power being dissipated.

Ordering Procedure

Standard Resistor. To specify standard: Series, Watts, Ohmic Value, Tolerance Code, e.g.: HS25 2R2 J
Non Inductive Resistor. To specify add N, e.g.: NHS100 10R J

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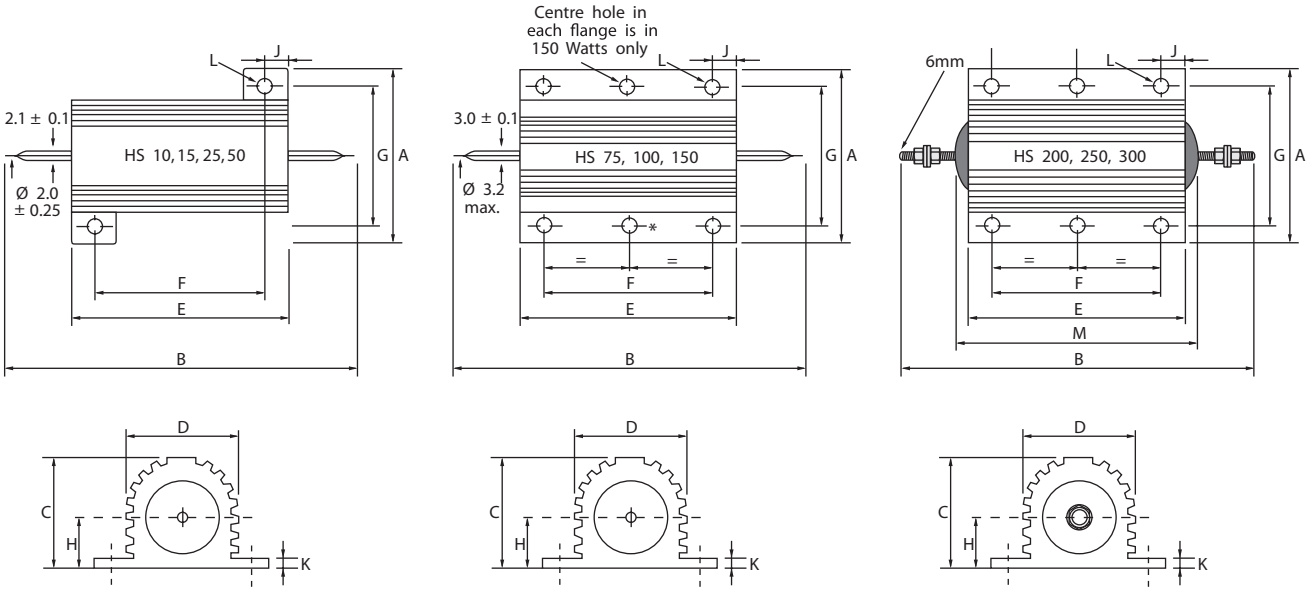
HS Aluminium Housed Resistors

Electrical Specifications

Size	Style MIL-R 18546	Power rating on std. heatsink @25°C	Watts with no heatsink @25°C	Resis-tance range	Limiting element voltage	Voltage proof AC Peak	Voltage proof AC rms.	Approx weight gms	Typical surface rise HS mounted	Standard heatsink	
										cm^2	Thickness mm
HS10	RE 60	10	5	R005-10K	160	1400	1000	4	5.8	415	1
HS15	RE 65	15	7	R005-10K	265	1400	1000	7	5.1	415	1
HS25	RE 70	25	9	R005-36K	550	3500	2500	14	4.2	535	1
HS50	RE 75	50	14	R01-86K	1250	3500	2500	32	3.0	535	1
HS75		75	24	R01-50K	1400	6363	4500	85	1.1	995	3
HS100		100	30	R01-70K	1900	6363	4500	115	1.0	995	3
HS150		150	45	R01-100K	2500	6363	4500	175	1.0	995	3
HS200		200	50	R01-50K	1900	7070	5000	475	0.7	3750	3
HS250		250	55	R01-50K	2200	7070	5000	600	0.6	4765	3
HS300		300	60	R01-68K	2500	7070	5000	700	0.6	5780	3

HS10-HS300 Standard Resistor



Dimensions (mm)

Size	A Max	B Max	C Max	D Max	E Max	F±0.3	G±0.3	H Max	J Max	K Max	L ±0.25*	M Max
HS10	16.5	30.0	8.8	8.5	15.9	11.3	12.4	4.5	2.4	1.8	2.4	
HS15	21.0	36.5	11.0	11.2	19.9	14.3	15.9	5.5	2.8	1.8	2.4	
HS25	28.0	51.0	14.8	14.2	27.3	18.3	19.8	7.7	5.2	2.6	3.2	
HS50	28.0	72.5	14.8	14.2	49.1	39.7	21.4	8.4	5.2	2.6	3.2	
HS75	47.5	72.0	24.1	27.3	48.7	29.0	37.0	11.8	10.4	3.7	4.4	
HS100	47.5	88.0	24.1	27.3	65.2	35.0	37.0	11.8	15.4	3.7	4.4	
HS150	47.5	121.0	24.1	27.3	97.7	58.0	37.0	11.8	20.4	3.7	4.4	
HS200	72.5	145.7	41.8	45.5	89.7	70.0	57.2	20.5	10.4	5.5	5.1	103.4
HS250	72.5	167.0	41.8	45.5	109.7	89.0	57.2	20.5	10.4	5.5	5.1	122.4
HS300	72.5	184.4	41.8	45.5	127.7	104.0	59.0	20.5	12.4	5.5	6.6	141.4

* HS200-HS300 Watts is ± 0.45

HS Aluminium Housed Resistors

An extension to our popular HS range of resistors. These resistors are suitable for power applications including braking resistors for frequency converters. Designed to be heatsink mounted to achieve full commercial wattage..

- Wound to maximise High Pulse Capability
- Values from 3R6 to 1K2
- RoHS Compliant

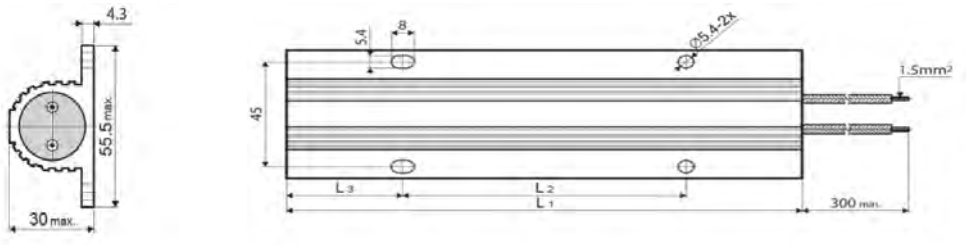
Characteristics

Tolerance (Code):	Standard ±5% (J),±10% (K) & ±20%(M)
Typical TCR:	≤ ±150ppm °C
Insulation resistance at 500V	≥ 10 GΩ minimum
Power dissipation:	At high ambient temperature dissipation derates linearly to zero at 250°C
Ohmic values:	From 3R6 to 1K2 depending on wattage size
Overload Capability(single Pulse):	10 x Power, 5 seconds
Design Voltage:	√(PxR)

Specifications & Dimensions

Box body

	WITHOUT HEATSINK WATTS		WITH HEATSINK WATTS	OHMS		DIMENSIONS mm			WEIGHT
SERIES	30% DUTY CYCLE	100% DUTY CYCLE	100% DUTY CYCLE	RESISTANCE RANGE	MAX VOLTAGE	L1	L2	L3	GRAMS
HS400	320	80	400	3R6 - 620r	2000 v	182	100	41	415
HS500	400	100	500	5R1 - 910r	2300 V	242	160	41	530
HS600	480	120	600	6R8 - 1K2	2800 V	302	220	41	670



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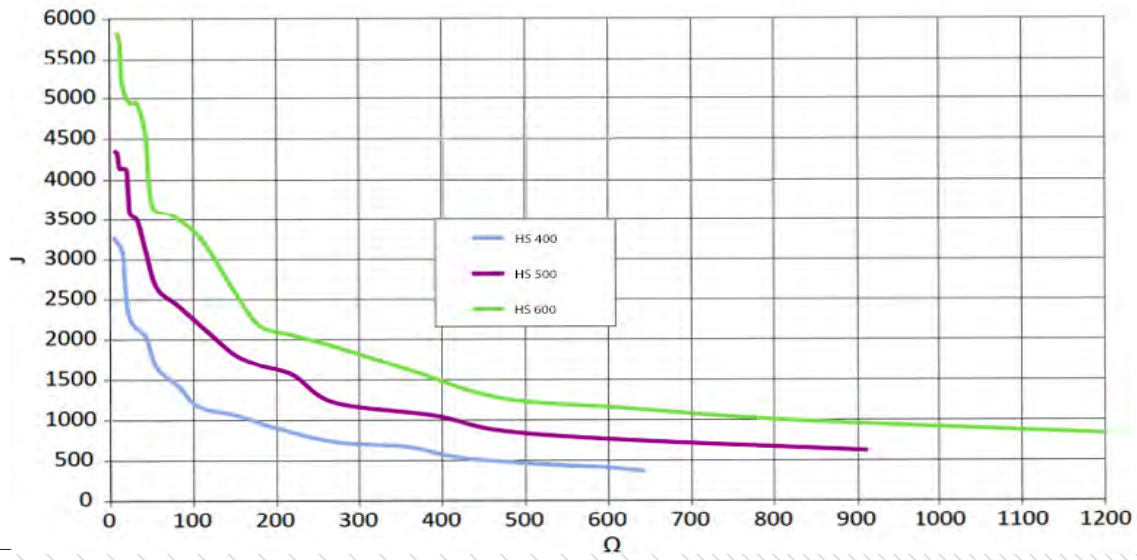
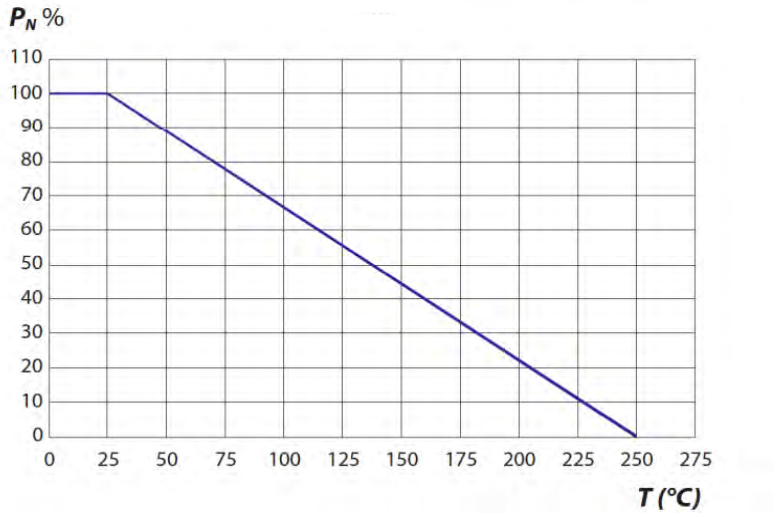
Adiabatic Pulse x Ohmic Value



Derating Curve



Ordering Procedure

Standard Resistor: Series, Resistance Value, Tolerance

e.g: HS400 10R J

Standard Stocked Values

HS400	HS500	HS600
HS400 10R J	HS500 10R J	HS600 10R J
HS400 25R J	HS500 25R J	HS600 25R J
HS400 50R J	HS500 50R J	HS600 50R J
HS400 75R J	HS500 75R J	HS600 75R J
HS400 100R J	HS500 100R J	HS600 100R J
HS400 250R J	HS500 250R J	HS600 250R J
HS400 500R J	HS500 500R J	HS600 500R J
		HS600 1K J

HSE3 & E6 Aluminium Housed

ARCOL manufactured Aluminium Housed Resistors are now available with threaded terminals and supplied with fixing kit as standard. M3 terminal avaliable on the 25 & 50 Watt resistors & M6 terminal on the 75 to 150 range.

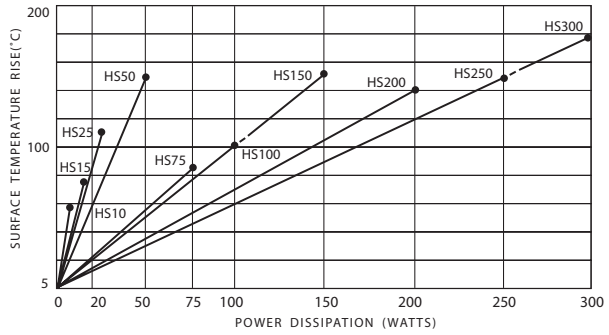
- High Power to volume
- Wound to maximise High Pulse Capability
- Values from R005 to 100K
- Custom designs welcome
- RoHS Compliant

Characteristics

Tolerance (Code):	Standard ±5% (J) and ±10% (K). Also available ±1% (F), ±2% (G) and ±3% (H)
Tolerance for low Ω values:	Typically ≥ R05 ±5% ≤ R047 ±10%
Temperature coefficients:	Typical values < 1K 100ppm Std. > 1K 25ppm Std. For lower TCR's please contact Arcol
Insulation resistance (Dry):	10,000 MΩ minimum
Power dissipation:	At high ambient temperature dissipation derates linearly to zero at 200°C
Ohmic values:	From R005 to 100K depending on wattage size
Low inductive (NHS):	Specify by adding N before HS Series code, e.g. NHS50
NHS ohmic value:	Divide standard HS maximum value by 4
NHS working volts:	Divide standard HS maximum working voltage by 1.414

Temp. Rise & Power Dissipation

Surface temperature of resistor related to power dissipation. The resistor is standard heatsink mounted using a proprietary heatsink compound.



Heat Dissipation

Heat dissipation: Whilst the use of proprietary heat sinks with lower thermal resistances is acceptable, uprating is not recommended. For maximum heat transfer it is recommended that a heat sink compound be applied between the resistor base and heat sink chassis mounting surface. It is essential that the maximum hot spot temperature of 200°C is not exceeded, therefore, the resistor must be mounted on a heat sink of correct thermal resistance for the power being dissipated.

Ordering Procedure

Standard Resistor. To specify standard: Series, Watts, Ohmic Value, Tolerance Code, e.g.: HS25 E3 2R2 J
Non Inductive Resistor. To specify add N, e.g.: NHS50E3 10R J

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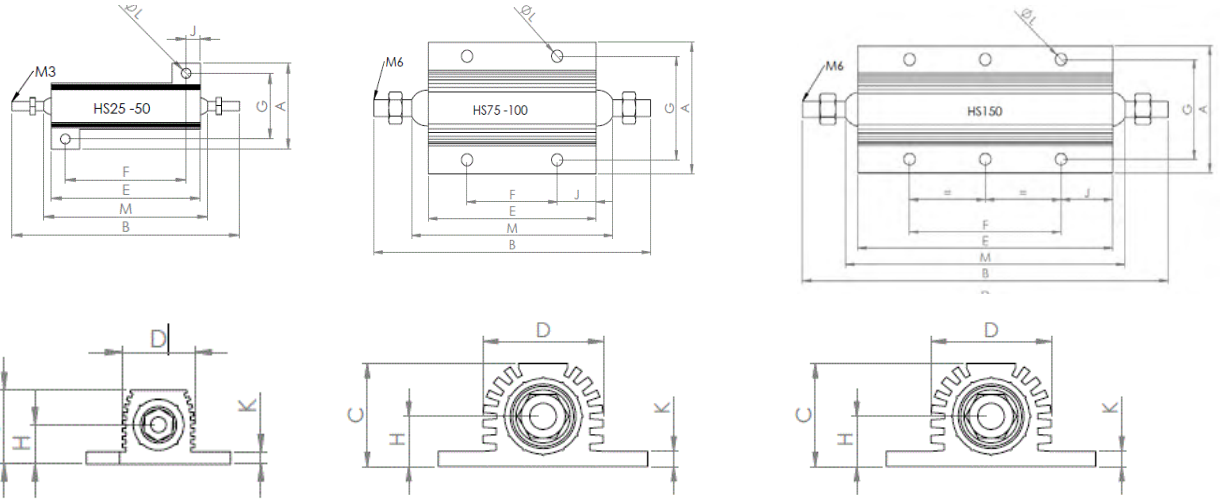
HSE3 & E6 Aluminium Housed

Electrical Specifications

Size	Terminal Style	Power rating on std. heatsink @25°C	Watts with no heatsink @25°C	Resis-tance range	Limiting element voltage	Voltage proof AC Peak	Voltage proof AC rms.	Approx weight gms	Typical surface rise HS mounted	Standard heatsink	
										cm^2	Thickness mm
HS25E3	M3	25	9	R005-36K	550	3500	2500	14	4.2	535	1
HS50E3	M3	50	14	R01-86K	1250	3500	2500	32	3.0	535	1
HS75E6	M6	75	24	R01-50K	1400	6363	4500	85	1.1	995	3
HS100E6	M6	100	30	R01-70K	1900	6363	4500	115	1.0	995	3
HS150E6	M6	150	45	R01-100K	2500	6363	4500	175	1.0	995	3

HS25E3,HS50E3-HS75E6,HS100E6 & HS150E6 Resistors



Dimensions (mm)

Size	A Max	B Max	C Max	D Max	E Max	F±0.3	G±0.3	H Max	J Max	K Max	L ±0.25*	M Max
HS25E3	29.7	55.0	14.6	14.0	27.3	18.3	21.4	8.5	5.2	2.6	3.2	35.0
HS50E3	29.7	77.0	14.8	14.2	49.1	39.7	21.4	8.5	5.2	2.6	3.2	55.0
HS75E6	47.5	94.5	24.1	27.3	48.7	29.0	37.0	11.8	10.4	3.7	4.4	64.0
HS100E6	47.5	111.0	24.1	27.3	65.2	35.0	37.0	11.8	15.4	3.7	4.4	80.0
HS150E6	47.5	143.0	24.1	27.3	97.7	58.0	37.0	11.8	20.4	3.7	4.4	110.0

HSW Aluminium Housed Resistors

Manufactured in line with the requirements of MIL 18546 and IEC 115, designed for direct heatsink mounting with thermal compound to achieve maximum performance.

- High Power to volume
- Wound to maximise High Pulse Capability
- Values from R1 to 30K
- Custom designs welcome
- RoHS Compliant

Characteristics

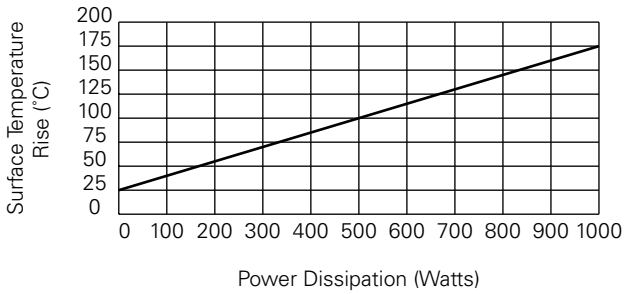
Tolerence (Code):	Standard ±5% (J). Please contact Arcol for lower requirements
Tolerance for low Ω values:	≤ 1R 100ppm, 1-50R 50ppm, ≥ 50R 25ppm
Temperature coefficients:	R1 - 30K
Insulation resistance (dry):	10,000 MΩ minimum
Power derating:	At high ambient temperatures dissipation derates linearly to zero at 200°C
Low inductive (NHS):	Specify by adding N before HSW code, e.g. NHSW600
NHS ohmic value:	Max value for NHSW600 is 10K ohms

Electrical Specifications

Power rating on standard heat-sink @ 25C	Resistance range ohms	Limiting ele-ment voltage DC/AC rms	Voltage proof AC peak	Stability ▲R % per 1000hrs	Approx weight gms	Typical surface temp. rise °C/W std. heat sink mounted	Standard heatsink (aluminium) RTH
600 watts	R1 - 30K	2200	3000	3%	625	0.19 °C/W	0.04 °C/W

Power Rating

600 watts mounted on 3750cm² x 3mm aluminium plate with 25°C water flowing at a rate of 2 litres per minute.



Ordering Procedure

Standard Resistor To specify standard: Series, Watts, Ohmic Value, Tolerance Code, e.g.: HSW600 10R J

Non Inductive Resistor To specify add N, e.g.: NHSW600 2R2 J

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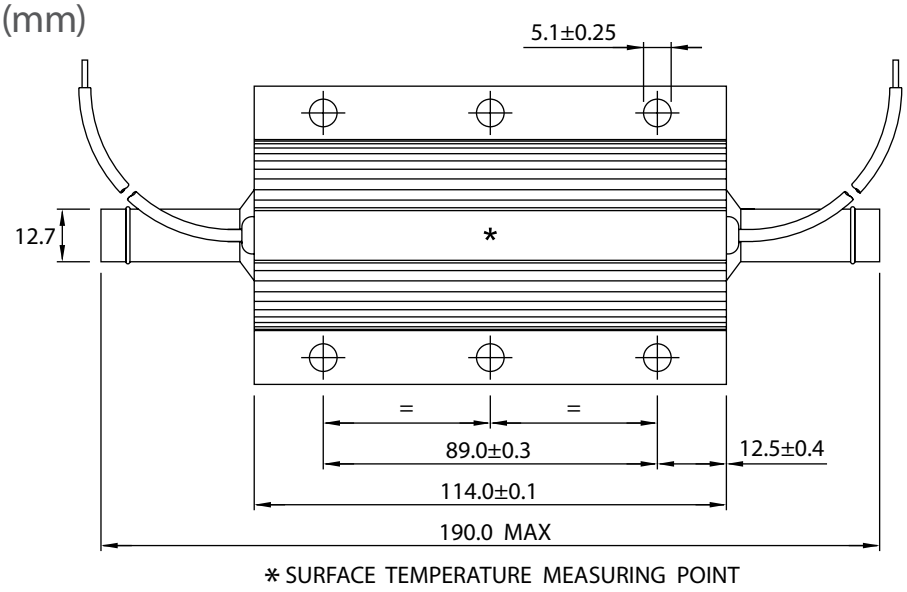
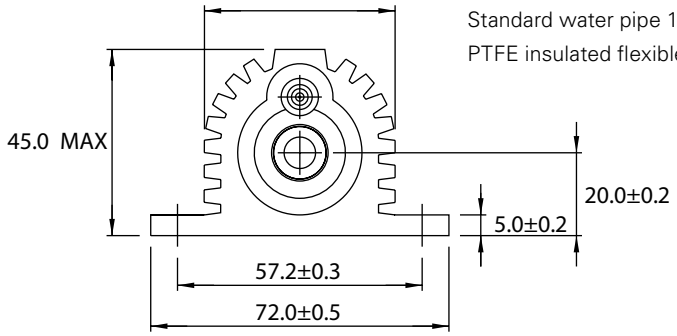
Dimensions (mm)



* SURFACE TEMPERATURE MEASURING POINT



Standard water pipe 12.7 OD in beaded copper.
PTFE insulated flexible lead - 19/0.45.

HSF Cable Leaded Aluminium Housed Resistors

Leaded version of ARCOL's aluminium housed resistor, comes with factory fitted cable terminations for ease of assembly into your application.

- High Power to volume
- Wound to maximise High Pulse Capability
- 200 mm flying lead terminations
- Radox 1800V Traction Cable
- Values from R005 to 70K

Characteristics

Tolerance (Code):	Standard ±1% (F). Also available ±5% (J)
Tolerance for low Ω values:	Typically ≥ R05 ±5% ≤ R047 ±10%
Temperature coefficients:	Typical values < 1K 100ppm Std. > 1K 25ppm Std. For lower TCR's please contact Arcol
Insulation resistance (Dry):	10,000 MΩ minimum
Power dissipation:	At high ambient temperature dissipation derates linearly to zero at 200°C
Ohmic values:	From R005 to 70K depending on wattage size
Cable Nominal Value:	1800 V AC

Electrical Specifications

Size	Power rating on std. heatsink @25°C	Watts with no heatsink @25°C	Resis-tance range	Limiting element voltage	Voltage proof AC Peak	Voltage proof AC rms.	Approx weight gms	Typical sur-face rise HS mounted	Standard heatsink	
									cm^2	Thickness mm
HS25F (M404)	25	9	R005-36K	550	3500	2500	14	4.2	535	1
HS50F (M404)	50	14	R01-86K	1250	3500	2500	32	3.0	535	1
HS100F (M372)	100	30	R01-70K	1800	6363	4500	115	1.0	995	3

Ordering Procedure

Standard Resistor. To specify standard: Series, Watts, Ohmic Value, Tolerance Code,Drawing Number

e.g.: HS25F 10R F M404, HS50F 10R F M404 , HS100F 10R F M372
Non Inductive Resistor. To specify add N, e.g.:

NHS25F 10R J M404, NHS50F 10R J M404 , NHS100F 10R J M372

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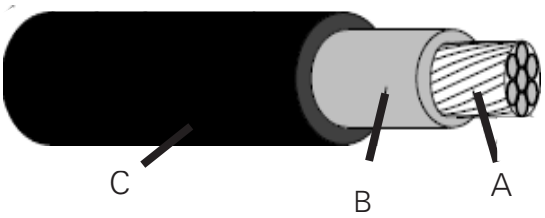
HSF Cable leaded Aluminium Housed Resistors

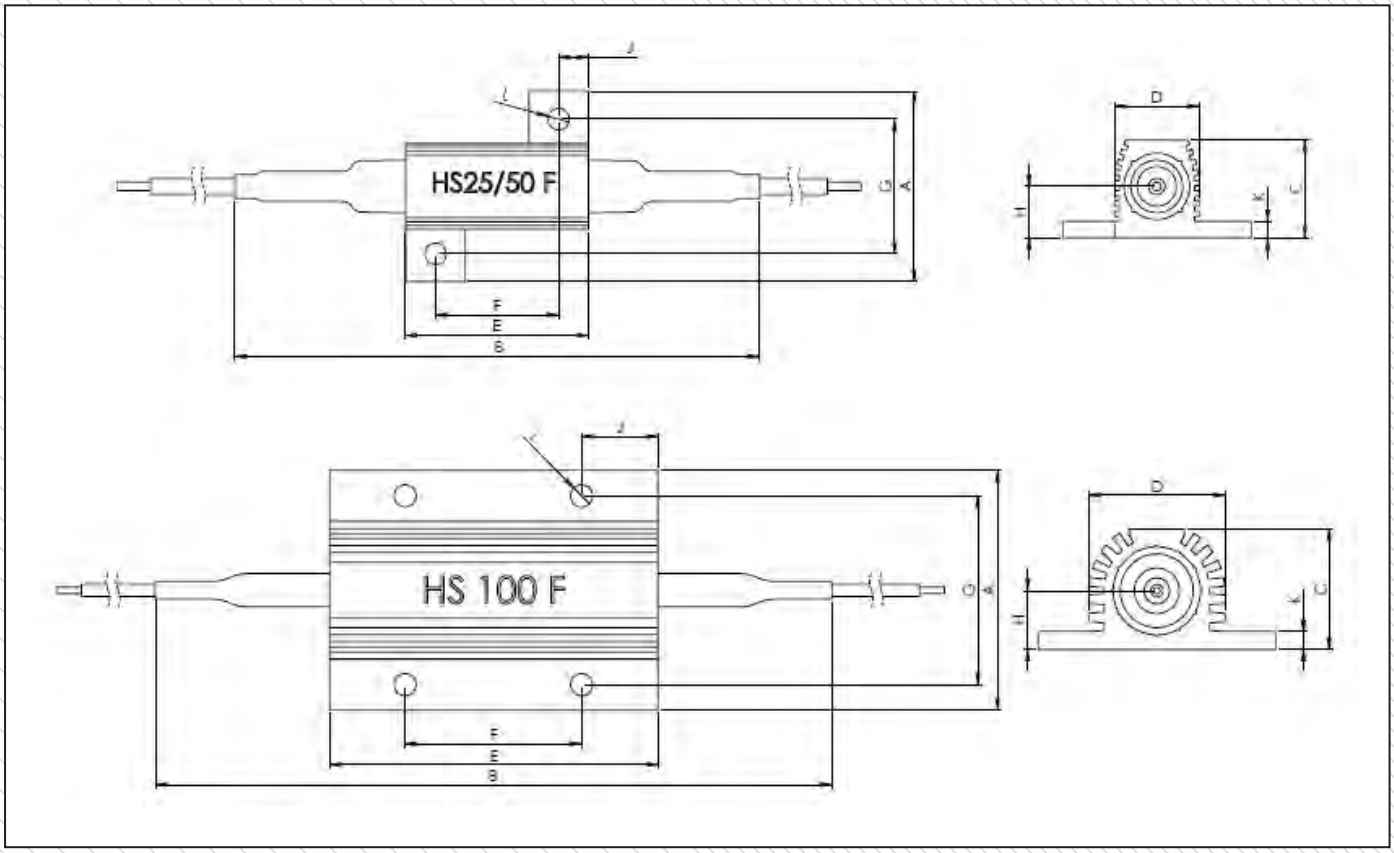


3.2mm Radox traction cable 1.5 mm2

A. Conductor: Stranded tin plated copper

B. Inner layer insulation: RADOX EI 110

C. Outer layer insulation: RADOX EI 109



Dimensions (mm)

Size	A Max	B Max	C Max	D Max	E Max	F±0.3	G±0.3	H Max	J Max	K Max	L ±0.25*
HS25F	28.0	82.0	14.8	14.2	27.3	18.3	19.8	7.7	5.2	2.6	3.2
HS50F	28.0	104.0	14.8	14.2	49.1	39.7	21.4	8.4	5.2	2.6	3.2
HS100F	47.5	140.0	24.1	27.3	65.2	35.0	37.0	11.8	15.4	3.7	4.4