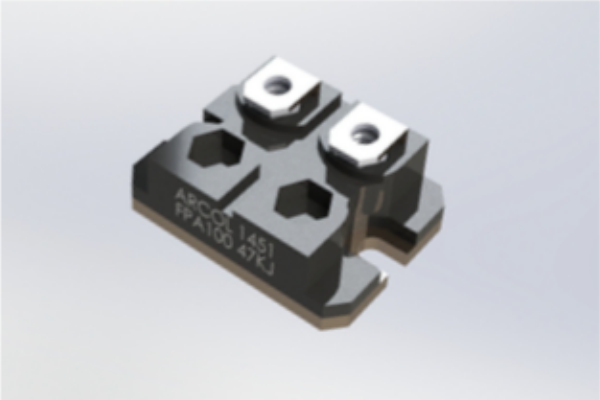
FPA100 Thick Film Power Resistors

RECTIFIERS
The Custom Power Specialist

Due to a Non-Inductive design these elements are ideally suited for high frequency and pulse load applications. The FPA100 is available connected as 2 terminals or 4 terminals, in parallel or series.

- SOT227 Style package
- Competitively priced
- 100 Watts dissipation in a small footprint
- Very low inductance
- Direct heatsink mounting



Characteristics

Ohmic value range:	E24, contact ARCOL for values outside this series
Tolerance (Code):	Standard J (±5%). K (±10%) available for 1R to 10R values. F (±1%) also available on request.
TCR:	100ppm (at +105°C ref to +25°C)
Power rating at 25° C:	100W
Max working voltage:	1kV rms
Resistance range:	1R to 5M
Voltage proof:	Dielectric strength 4kVdc
Partial discharge:	Up to 2kV rms / 80 pC
Capacitance/mass:	≤40pF
Working temp range:	-55°C to +155°C
Max. torque for contacts (static):	1.3Nm
Max. torque for base plate (static):	1.5Nm
Inductance:	≤ 50nH

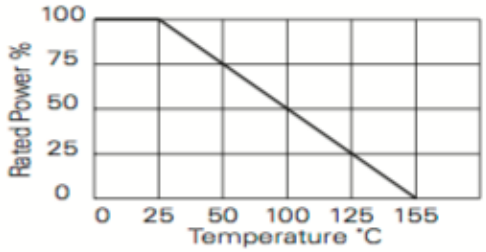
Ordering Procedure

Standard (Version 1) Resistor Specify Series, Watts, Ohmic Value, Tolerance Code, e.g.: FPA100 2R2 J

Versions 2, 3, 4 or 5 Specify Series, Watts, Ohmic Value or Values, Tolerance Code and then Version Number, e.g.: FPA100 2R2 2R2 J version 4.

Refer to versions available on page 2.

Derating Curve



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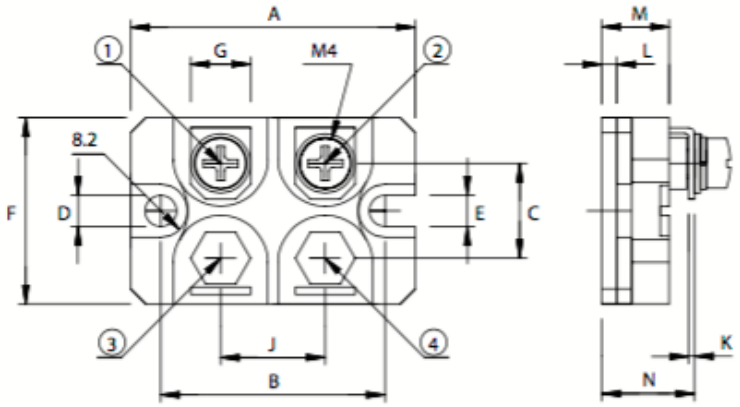
FPA100 Thick Film Power Resistors

Dimensions (mm)



	A	B	C	D min	E	F
Min	38	30.1	11.5	4.1	4.0	24.4
Max	39	30.3	13.5	N/A	4.3	26.4
	G	J	K	L	M	N
Min	7.8	14.5	0.75	1.9	9.5	11.5
Max	8.2	15.5	0.85	2.1	10.5	12.5

Versions Available

FPA250 Thick Film Power Resistors

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Due to a Non-Inductive design these elements are ideally suited for high frequency and pulse load applications.

- Non Inductive Performance for HF Applications
- Power Applications 100W to 250W
- Very Good Power/Volume Ratio
- RoHS Compliant

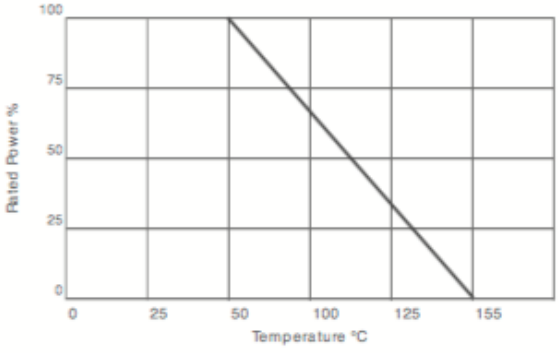
Characteristics

Power rating:	250W (heatsink at 50°C)	Typical inductance:	40nH typical
Resistance range:	From 1R to 2M E6 Series	Parallel capacitance:	≤40pF
Tolerance (Code):	Standard J (±5%)	Capacitance/Mass:	≤110pF
	Also available F (±1%) on request	Heatsink flatness:	0.05mm max
Temperature coefficient:	100ppm/°C	Heatsink surface finish:	≤6.4 µm max
Max working voltage:	5k Vdc	Thermal grease:	Required
Working temperature range:	-55°C to +155°C	Max torque for contacts:	2Nm (static)
Dielectric strength:	7kV	Max torque for mounting:	1.8Nm (static)
Insulation resistance:	≥ 10Gohm at 500V		
Creepage distance:	42mm min		

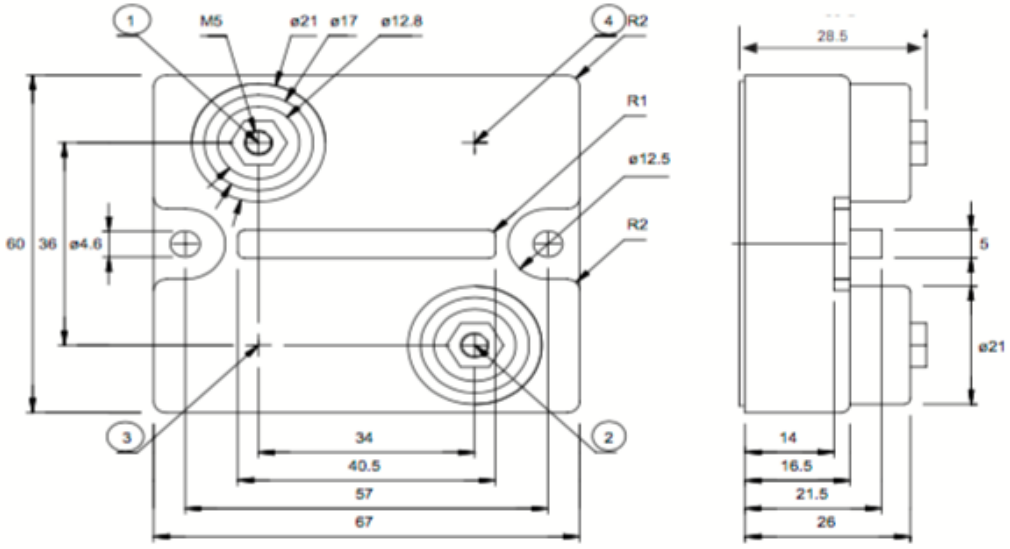
Ordering Procedure

Standard Resistor Specify Series, Watts, Ohmic Value, Tolerance Code
e.g.: FPA250 10R J

Derating Curve

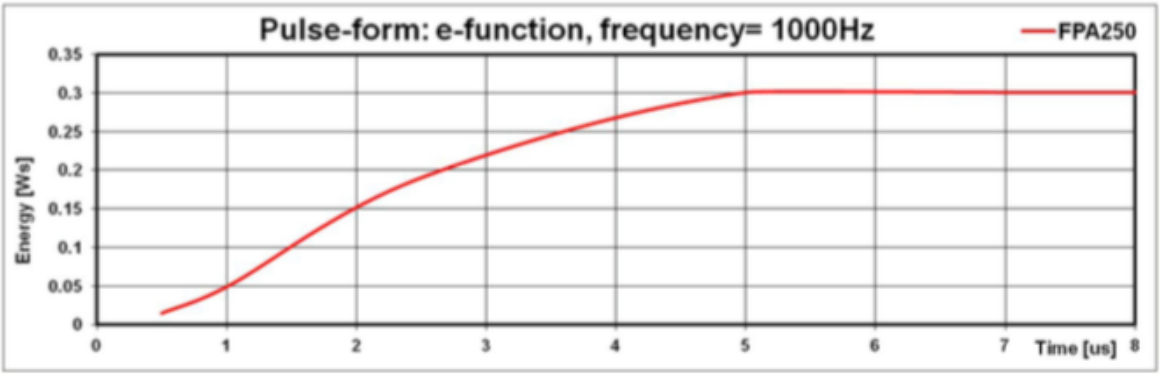


Dimensions (mm)



Pulse rating

For pulse duration >5.0 µS, and at maximum allowed voltage levels, the maximum peak energy of 0.3J is limited by the average power rating of 250W. For pulse duration times <5.0 µS it has not been possible to reliably establish maximum energy failure point, although it is known that the pulse capability is higher than the curve shown in the graph below.



Whilst these parts are designed to operate in high frequency circuits, where dv/dt is faster than 250V/µS, it is recommended that the resistor is tested under worst case application conditions to ensure that unknown attribute of the application waveform are completely accounted for.

FPA600 600W Thick Film Heatsink Resistors

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600 Watt resistor designed for various applications including power transmission, traction, variable speed drives, power supplies, robotics, motor control and power control devices. Suitable for liquid or air cooled heat sink systems

- Power Dissipation 600 watts at max 70°C bottom case temp
- Value Range R5 to 1M
- Tolerance Options ±5% or ±10%
- TCR Options ±150ppm/°C
- Maximum Voltage 5000Vdc
- Dielectric Strength 12000Vdc
- Special Features Partial discharge 4Kvrms <10 pc up to 7kV. Please consult with company regarding application areas. Vibration proof. Very low inductance
  RoHS Compliant.

Characteristics

Power rating	600W at 70°C effective ambient	Partial discharge	4kV rms. <10pC
Resistance range	R5 to 1M	Voltage proof test	7kV rms.
Tolerance	± 10% (K) - ± 5% (J) Std	Typical inductance	<100nH measured at 100kHz
Temperature coefficient	± 100ppm / °C (25°C - 100°C)	Parallel capacitance	40pF
Maximum working voltage	5kV rms	Capacitance / mass	100pF
Working temperature range	-55°C to +150°C	Short term overload	1kW - 10 sec.
Dielectric strength	6kV/50Hz test time 10sec.	Thermal resistance	Rth 0.115°C/W
Creepage distance	40mm	Mounting screw / max. torque	M4, normal / 1.8Nm
		Contacts / max. torque	M5, normal / 2Nm

Specifications

Short time overload	1,000W / 10 sec 0.4%
Humidity 56 days / 40°C / Steady state 95%	ΔR ±0.25%
Temperature -55 / +125 / 5 cycling cycles	ΔR ±0.20%
Shock 40g / 4,000 times	ΔR ±0.25%
Vibrations 2-500Hz / 10g	ΔR ±0.25%
Load life Pn 30 min. on / 1,000cyl 30 min. off	ΔR ±0.40%

FPA600 600W Thick Film Heatsink Resistors

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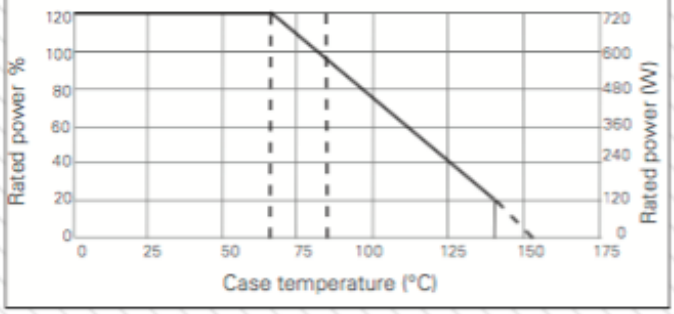
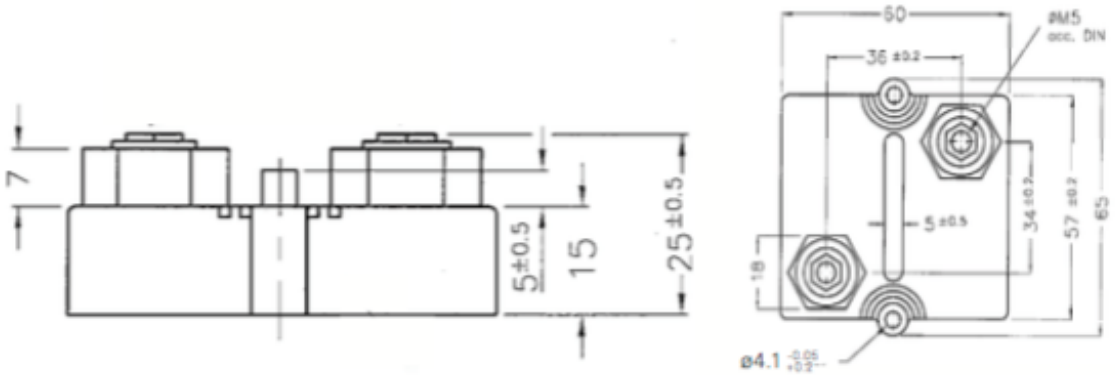
Derating Curve



Ordering Procedure

Standard resistor: Specify series, watts, ohmic value, tolerance code. e.g FPA600 10R J

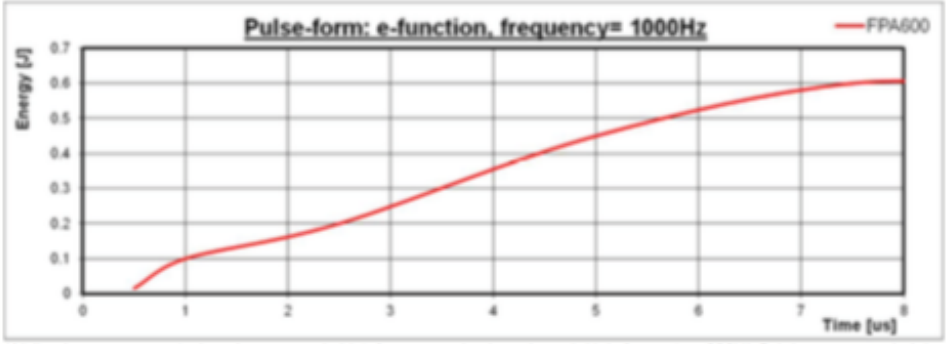
Dimensions (mm)



Other terminal dimensions available, contact ARCOL for more information

Pulse Rating

For pulse duration >7.5 µS and, maximum allowed voltage levels, the maximum peak energy of 0.6J is limited by the average power rating of 600W. For pulse duration times <7.5 µS it has not been possible to reliably establish maximum energy failure point, although it is known that the pulse capability is higher than the curve shown in the graph below.



Whilst these parts are designed to operate in high frequency circuits, where dv/dt is faster than 250V/µS, it is recommended that the resistor is tested under worst case application conditions to ensure that unknown attribute of the application waveform are completely accounted for.