

FPA2K Thick Film Power Resistor



For variable speed drivers, power supplies, control devices, robotics, motor control and other power designs. The easy mounting fixture guarantees an autocalibrated pressure to the cooling plate of approx 300 N

- 2000 Watt operating power
- Non- Inductive Design
- High insulation and partial discharge performance
- Materials in accordance with UL94-V0
- RoHS Compliant



Characteristics

Resistance values	1R to 6K
Resistance tolerance	J (5%) and K (10%)
Temperature coefficient	$\pm 150\text{ppm}/^\circ\text{C}$ - others available on request, measured $+25^\circ\text{C}$ to $+85^\circ\text{C}$
Maximum working voltage	5kVdc - others available on request not exceeding maximum power
Short time overload	2400W at 70°C for 10 sec $\Delta R = 0.4\%$ max
Power rating	2000W at 125°C bottom case temperature resp. 60°C heat sink temp
Maximum continuous current	120 A
Electric strength voltage	7kVrms/50Hz/500VA , test time 1 min between case and terminal
Single shot voltage	up to 12kV normwave (1.5/50 μsec)
Partial discharge	4kVrms < 10pC
Insulation resistance	10G Ω min at 1000V
Creepage distance	>42mm min
Air distance	>14mm min
Inductance	$\geq 80\text{nH}$ typical, measuring frequency 10kHz
Capacity/Mass	$\geq 120\text{pF}$ typical, measuring frequency 10kHz
Capacity/Parallel	$\geq 40\text{pF}$ typical, measuring frequency 10kHz
Operating temperature	-55°C to $+150^\circ\text{C}$
Max torque for contacts	1.8 Nm to 2Nm
Max torque for mounting	1.6Nm to 1.8 Nm M4 screws
Weight	$\sim 120\text{ g}$

Derating Curve



Derating (thermal resist.)FPA2K: 66.6 W/K (0.015K/W)
Power Rating:2000 W at 125°C bottom case temperature.

Best results can be reached by using a thermal conduction to the heatsink $R_{th-cs} < 0.025^\circ\text{K}/\text{W}$, which can be reached by using thermal transfer compound with a head conductivity of $1\text{W}/\text{mK}$. The flatness of the cooling plate must be better than 0.05mm overall. The roughness of the surface should not exceed $6.4\mu\text{m}$

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The information contained herein does not form part of a contract and is subject to change without notice. Arcol operate a policy of continual product development, therefore, specifications may change.

It is the responsibility of the customer to ensure that the component selected from our range is suitable for the intended application. If in doubt please ask Arcol.

Test Specifications

Test	Method	Tolerance Drift
Short time overload	2400 W/10 sec	0.40%
Humidity steady state	56 days/40°C/95%	0.25%
Temp. Cycling	-55/+125/5cycles	0.20%
Shock	40g/4000 times	0.25%
Vibrations	2-500Hz/10g	0.25%
Load life 3,000 cyl	PN 30 min on/ 30 min off	0.40%
Terminal strengths	200N for hexa. thread contacts	0.05%

Ordering Procedure

Standard Resistor: Series, Resistance Value, Tolerance, Connector height

e.g: FPA2K 10R J 30/32 mm

Dimensions (in mm)



Standard Terminals

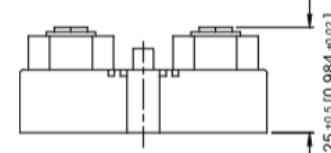
Air distance: 14mm [0.5512] min.

Creeping distance: 42mm [1.6535] min.

Terminal height 30/32 Standard



Terminal height 25/25 Optional



General Specifications

Electric support - Alumina ceramic metalized with ALTOX film on the bottom for improved heat transfer and optimum discharge

Encapsulation - Resin-filled epoxy casing with large creepage distance to mass, large strike distance between the terminals and high insulation resistance (CTI 600)

Resistance Element - Special design for low inductance and capacitance values. The element employs our special METOXFILM, which demonstrates stability whilst covering high wattage and pulse loading

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