

## Metal Film Resistors, Industrial, Flameproof



### FEATURES

- Small physical size
- Low cost
- FP resistors have the ability to withstand overloads up to 100 times rated power without any trace of flame
- Exceptional frequency characteristics
- Especially suited for circuitry where functions, environments and duty cycles demand power resistors
- Electroplated tin-lead or lead (Pb)-free solder finish leads
- Tighter tolerances available on request
- Compliant to RoHS directive 2002/95/EC



RoHS\*  
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING			MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
		P <sub>25 °C</sub> W	P <sub>40 °C</sub> W	P <sub>70 °C</sub> W				
FP01/2	FP1/2	-	-	0.5	350	10 to 1M	1, 2, 5, 10	150
FP0001	FP1	-	-	1	500	10 to 1M	1, 2, 5, 10	150
FP0032	FP32	-	-	1	500	10 to 1M	1, 2, 5, 10	150
FP0002	FP2	3.5	3	2	500	9 to 1.5M	1, 2, 5, 10	150
FP0042	FP42	-	-	2	500	10 to 1.5M	1, 2, 5, 10	150
FP0003	FP3	4	4	3	500	9 to 1M	1, 2, 5, 10	150
FP0004	FP4	5.5	5	4	500	6 to 1M	1, 2, 5, 10	150
FP0005	FP5	6.5	6	5	600	7 to 1M	1, 2, 5, 10	150
FP0007	FP7	7.5	-	7	700	8 to 1M	1, 2, 5, 10	150
FP0010	FP10	-	10	-	700	8 to 1M	1, 2, 5, 10	150
FP0067	FP67	5	-	-	500	5 to 19K	1, 2, 5, 10	150
FP0069	FP69	3	-	2	500	2.6 to 1.5M	1, 2, 5, 10	150

**Note**

(1) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less.

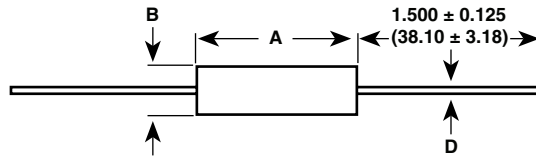
GLOBAL PART NUMBER INFORMATION										
New Global Part Numbering: FP000251K1F9251B8 (preferred part numbering format)										
<div style="display: flex; justify-content: space-around; font-weight: bold; font-size: 1.2em;"> <span>F</span> <span>P</span> <span>0</span> <span>0</span> <span>0</span> <span>2</span> <span>5</span> <span>1</span> <span>K</span> <span>1</span> <span>F</span> <span>9</span> <span>2</span> <span>5</span> <span>1</span> <span>B</span> <span>8</span> </div>										
GLOBAL MODEL <small>(see Standard Electrical Specifications table)</small>	RESISTANCE VALUE <b>R</b> = Ω <b>K</b> = kΩ <b>M</b> = MΩ <b>10R0</b> = 10 Ω <b>1K30</b> = 1.3 kΩ <b>1M00</b> = 1.0 MΩ			TOLERANCE CODE <b>F</b> = ± 1 % <b>G</b> = ± 2 % <b>J</b> = ± 5 % <b>K</b> = ± 10 %			SPEC CODES <small>(see Spec Codes table)</small>		PACKAGING (1) <b>EK</b> = Lead (Pb)-free, strip <b>EL</b> = Lead (Pb)-free, lacer <b>EA</b> = Lead (Pb)-free, T/R  <b>B8</b> = Tin/lead, strip <b>LB</b> = Tin/lead, lacer <b>CH</b> = Tin/lead, T/R (750 pieces) <b>CJ</b> = Tin/lead, T/R (1000 pieces) <b>G1</b> = Tin/lead, T/R (600 pieces)	
Historical Part Number: FP25112F B8 (will continue to be accepted)										
FP2 HISTORICAL MODEL		5112 RESISTANCE VALUE			F TOLERANCE CODE		B8 PACKAGING			

**Note**

(1) Some packaging codes are model specific

\* Pb containing terminations are not RoHS compliant, exemptions may apply

**DIMENSIONS** in inches (millimeters)

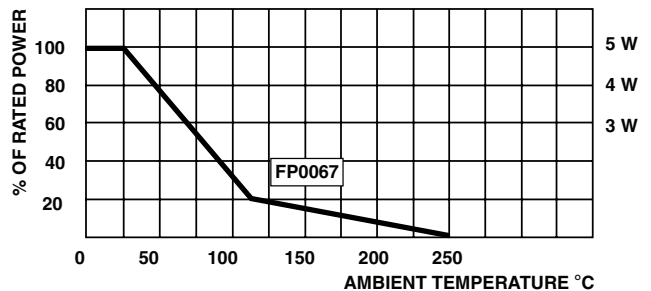
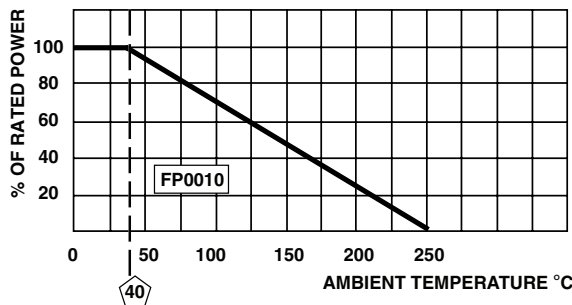
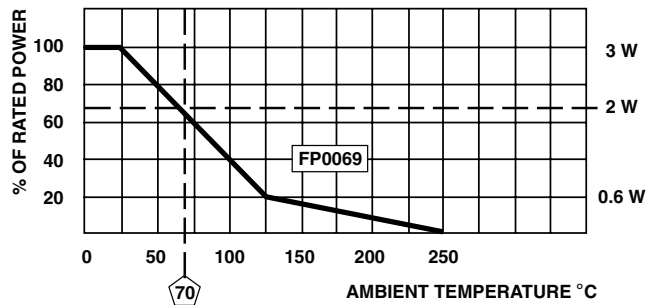
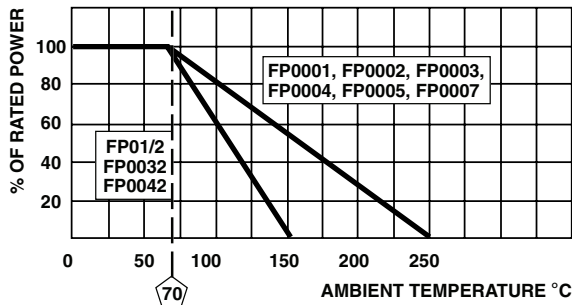


GLOBAL MODEL	A	B	D
FP01/2	0.360 ± 0.020 (9.14 ± 0.51) <sup>(1)</sup>	0.138 + 0.012 - 0.023 (3.51 + 0.31 - 0.58)	0.032 ± 0.002 (0.81 ± 0.05)
FP0001	0.560 ± 0.031 (14.22 ± 0.79)	0.190 + 0.007 - 0.015 (4.83 + 0.18 - 0.38)	0.032 ± 0.002 (0.81 ± 0.05)
FP0032	0.560 ± 0.031 (14.22 ± 0.79)	0.190 + 0.007 - 0.015 (4.83 + 0.18 - 0.38)	0.040 ± 0.002 (1.02 ± 0.05)
FP0002	0.687 ± 0.031 (17.45 ± 0.79)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0042	0.687 ± 0.031 (17.45 ± 0.79)	0.300 ± 0.020 (7.62 ± 0.51)	0.045 ± 0.002 (1.14 ± 0.05)
FP0003	0.900 ± 0.031 (22.86 ± 0.79)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0004	1.530 ± 0.035 (38.86 ± 0.89)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0005	1.710 ± 0.035 (43.43 ± 0.89)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0007	2.040 ± 0.035 (51.82 ± 0.89)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0010	2.040 ± 0.035 (51.82 ± 0.89)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0067	0.900 ± 0.031 (22.86 ± 0.79)	0.300 ± 0.020 (7.62 ± 0.51)	0.032 ± 0.002 (0.81 ± 0.05)
FP0069	0.516 ± 0.021 (13.11 ± 0.53)	0.225 ± 0.012 (5.72 ± 0.31)	0.032 ± 0.002 (0.81 ± 0.05)

**Note**

<sup>(1)</sup> Clean lead to clean lead dimensions on FP1/2 are 0.347" (11.10 mm) maximum

**DERATING**



SPEC CODES			
GLOBAL MODEL	SPEC	RESISTOR TOLERANCE	DESCRIPTION
FP01/2	5605	1, 2, 5, 10	Color banded, 4 or 5 bands depending on tolerance
	5610	1, 2, 5, 10	Alphanumeric marking
FP0001	6200	2, 5, 10	Color banded, 4 bands
	6201	1	Color banded, 5 bands
FP0032	6601	1	Color banded, 5 bands
	6602	2, 5, 10	Color banded, 4 bands
FP0002	9251	1, 2, 5, 10	Alphanumeric marking
FP0042	9201	1	Color banded, 5 bands
	9202	2, 5, 10	Color banded, 4 bands
FP0003	9300	1, 2, 5, 10	Alphanumeric marking
	9320	2, 5, 10	Color banded, 4 bands
	9330	1	Color banded, 5 bands
FP0004	9400	1, 2, 5, 10	Alphanumeric marking
FP0005	9500	1, 2, 5, 10	Alphanumeric marking
FP0007	9700	1, 2, 5, 10	Alphanumeric marking
FP0010	9800	1, 2, 5, 10	Alphanumeric marking
FP0067	9550	1, 2, 5, 10	Alphanumeric marking
FP0069	7500	1, 2, 5, 10	Alphanumeric marking
	7536	2, 5, 10	Color banded, 4 bands
	7538	1	Color banded, 5 bands

MARKING			
- DALE	- Value	- Tolerance	- Model and case size (Date and source code included on some styles)
<p><b>± 1 % tolerance parts are marked with 5 color bands. 5 bands, EIA Standard RS196.</b></p>		<p><b>± 2 %, ± 5 % and ± 10 % tolerance parts are marked with 4 color bands. 4 band commercial, EIA Standard.</b></p>	
<p>First significant figure</p> <p>Third significant figure    Multiplier    Tolerance, 1-1/2 times size</p>	<p>First significant figure    Second significant figure</p> <p>Multiplier    Tolerance</p>		



<b>PERFORMANCE</b>												
TEST	MAXIMUM $\Delta R$ (TYPICAL TEST LOTS) $\pm$ %											
	FP01/2	FP0001	FP0032	FP0002	FP0042	FP0003	FP0004	FP0005	FP0007	FP0010	FP0067	FP0069
Short Time Overload	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Low Temperature Operation	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.25
Moisture Resistance	1.0	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Shock	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vibration	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Temperature Cycle	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5
Load Life (1000 h Rated Conditions)	1.0	2.0	2.0	5.0	2.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0
Terminal Strength	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Dielectric Withstanding Voltage	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.25
Effect Solder Heat	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.25

<b>PACKAGING</b>			
GLOBAL MODEL	PACKAGING TYPE	PACKAGING CODE	
		LEAD (Pb)-BEARING	LEAD (Pb)-FREE
FP01/2, FP0001, FP0032, FP0069	Strip	B8	EK
	Tape/reel	CJ	EA
FP0002, FP0003, FP0042, FP0067	Strip	B8	EK
	Tape/reel	CH	EA
FP0004	Lacer	LB	EL
	Tape/reel	G1	EA
FP0005, FP0007, FP0010	Lacer	LB	EL



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