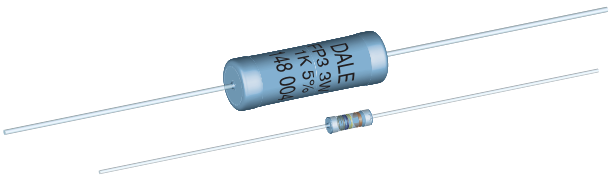
Metal Film Resistors, Industrial, Flameproof



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
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

e3 RoHS* COMPLIANT

Note

* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\,°C}$ W	POWER RATING $P_{40\,°C}$ W	POWER RATING $P_{70\,°C}$ W	MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE (2) Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
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	25 to 125K	1, 2, 5, 10	150
FP0042	FP42	-	-	2	500	25 to 125K	1, 2, 5, 10	150
FP0003	FP3	4	4	3	500	22 to 125K	1, 2, 5, 10	150
FP0004	FP4	5.5	5	4	500	70 to 125K	1, 2, 5, 10	150
FP0005	FP5	6.5	6	5	600	70 to 125K	1, 2, 5, 10	150
FP0007	FP7	7.5	-	7	700	25 to 125K	1, 2, 5, 10	150
FP0010	FP10	-	10	-	700	25 to 125K	1, 2, 5, 10	150
FP0067	FP67	5	-	-	500	35 to 19K	1, 2, 5, 10	150
FP0069	FP69	3	-	2	500	25 to 126K	1, 2, 5, 10	150

Notes

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

(2) Contact factory for values outside these published range.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: FP000251K1F9251B8 (preferred part numbering format)

F	P	0	0	0	2	5	1	K	1	F	9	2	5	1	B	8

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	SPEC CODES	PACKAGING (3)
(See Standard Electrical Specifications table)	**R** = Ω **K** = kΩ **M** = MΩ **10R0** = 10 Ω **1K30** = 1.3 kΩ **1M00** = 1.0 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 %	(See Spec Codes table)	**EK** = Lead (Pb)-free, strip **EL** = Lead (Pb)-free, lacer **EA** = Lead (Pb)-free, T/R **B8** = Tin/lead, strip **LB** = Tin/lead, lacer **CH** = Tin/lead, T/R (750 pieces) **CJ** = Tin/lead, T/R (1000 pieces) **G1** = Tin/lead, T/R (600 pieces)

Historical Part Number: FP2 5112 F B8 (will continue to be accepted)

FP2	5112	F	B8
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

Notes

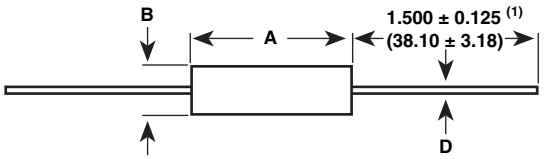
(3) Some packaging codes are model specific.

(4) For additional information on packaging, refer to the Through Hole Resistor Packaging document (www.vishay.com/doc?31544).

For technical questions, contact: ff2aresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches (millimeters)



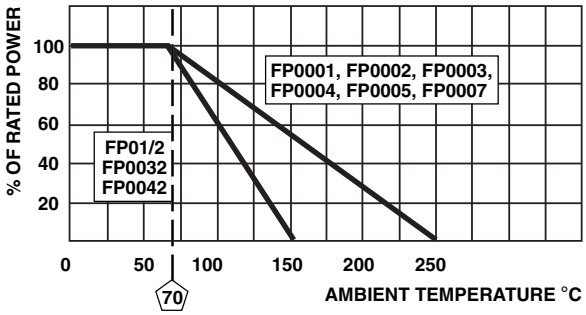
GLOBAL MODEL	A	B	D
FP01/2	0.360 ± 0.020 (9.14 ± 0.51) (2)	0.138 + 0.012 - 0.023 (3.51 + 0.31 - 0.58)	0.032 ± 0.002 (0.81 ± 0.05)
FP0001	0.560 ± 0.031 (14.22 ± 0.79)	0.190 + 0.005 - 0.030 (4.83 + 0.13 - 0.76)	0.032 ± 0.002 (0.81 ± 0.05)
FP0032	0.560 ± 0.031 (14.22 ± 0.79)	0.190 + 0.005 - 0.030 (4.83 + 0.13 - 0.76)	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)

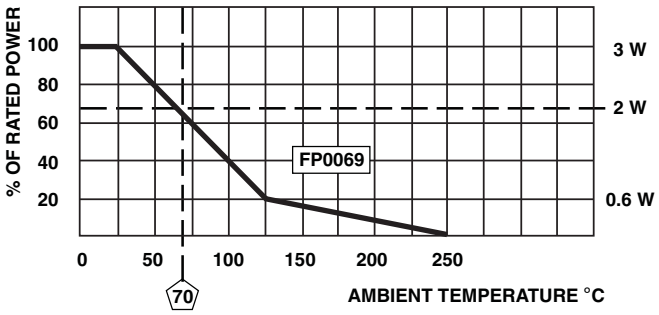
Notes

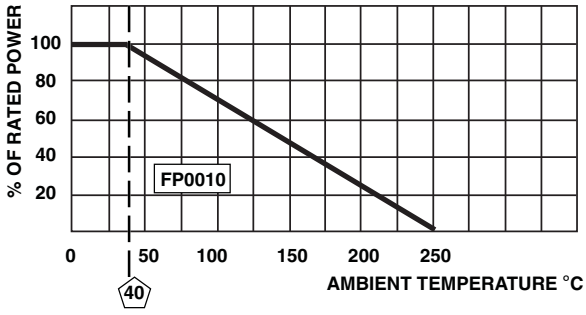
(1) Lead length for product in strip pack. For product supplied in Tape and Reel, the actual lead length would be based on body size, tape spacing and lead trim.

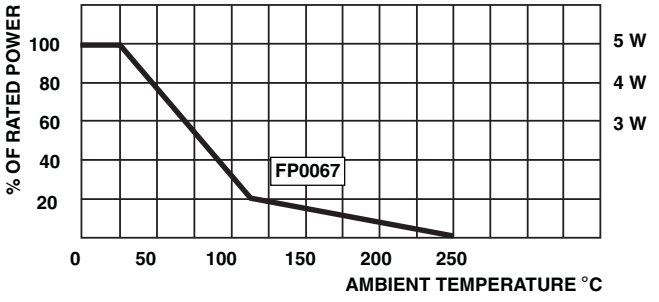
(2) Clean lead to clean lead dimensions on FP1/2 are 0.347" (11.10 mm) maximum.

DERATING









For technical questions, contact: ff2aresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

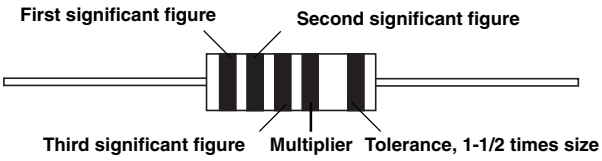
SPEC CODES

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

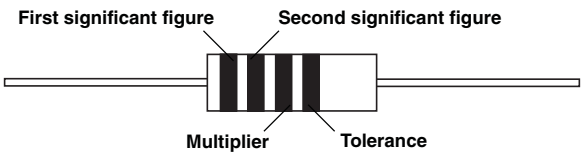
MARKING

- DALE - Value - Tolerance - Model and case size
(Date and source code included on some styles)

± 1 % tolerance parts are marked with 5 color bands. 5 bands, EIA Standard RS196.



± 2 %, ± 5 % and ± 10 % tolerance parts are marked with 4 color bands. 4 band commercial, EIA Standard.



For technical questions, contact: ff2aresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

PERFORMANCE

TEST	MAXIMUM ΔR (TYPICAL TEST LOTS) ± %											
	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

PACKAGING

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

For technical questions, contact: ff2aresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

© 2025 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000