

POWER TYPE METAL CLAD WIRE-WOUND RESISTORS

FH/FHN

Power type metal clad wire-wound resistor in small package with excellent heat dissipation using incombustible Pb-free silicone molding

Features

- Excellent short-time overload characteristics
- Low TCR
- Reinforced terminals with resin and enlarged terminal holes to facilitate wiring.

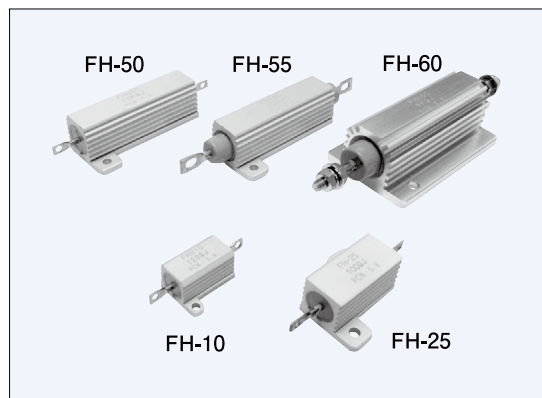
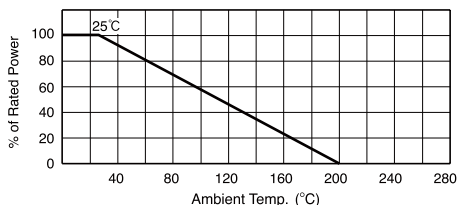


FIG.1

Type	Wattage Rating (W)		Resistance Range (Ω)		Resistance Tolerance (%)	MAX Working (V)		Dielectric Strength (V)	Operating Temp. (°C)	MAX Weight (g)
	Chassis Mounted	Free Air	Inductive(FH)	Non-Inductive (FHN)		FH	FHN			
FH-10	10	6	0.02 ~ 6K	0.03 ~ 2.3K	±0.5(D) R ≥ 10Ω	245	180	AC1000	-55~+200	7
FH-25	20	8	0.012~ 15K	0.02 ~ 5.5K	±1 (F) R ≥ 0.1Ω	500	300			15
FH-50	30	10	0.01 ~ 40K	0.02 ~ 12K	±2 (G)	1300	600			33
FH-55	30	10	0.01 ~ 40K	0.02 ~ 12K	±3 (H)	1300	600			35
FH-60	50	15	0.1 ~ 18K	0.05 ~ 9K	±5 (J) ±10 (K)	1400	800			70

The smaller one among the two values below needs to be dealt as maximum working voltage.
 Rated voltage = $\sqrt{\text{Rated power} \times \text{Nominal resistance value}}$ or the maximum working voltage specified in the table.

Ambient Temp. Derating Curve

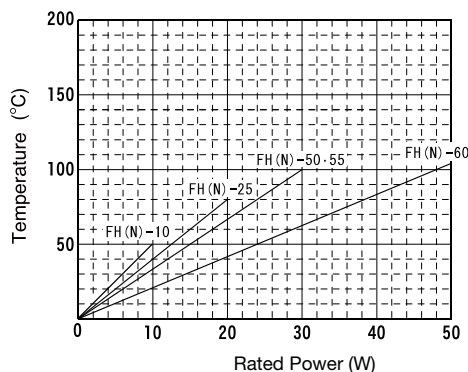


Temp. Coefficient

(Standard Temp. +25°C Test Temp. -55°C, +125°C, +200°C)

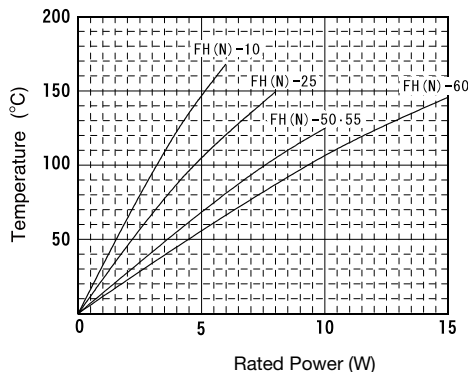
Type	Temp. Coefficient (ppm/°C)			
	±30	±50	±100	±500
FH-10	50Ω ≤ R	0.1Ω ≤ R < 50Ω	0.05Ω ≤ R < 0.1Ω	0.02Ω ≤ R < 0.05Ω
FH-25	200Ω ≤ R	0.1Ω ≤ R < 200Ω	0.05Ω ≤ R < 0.1Ω	0.012Ω ≤ R < 0.05Ω
FH-50	400Ω ≤ R	0.1Ω ≤ R < 400Ω	0.05Ω ≤ R < 0.1Ω	0.01Ω ≤ R < 0.05Ω
FH-55	400Ω ≤ R	0.1Ω ≤ R < 400Ω	0.05Ω ≤ R < 0.1Ω	0.01Ω ≤ R < 0.05Ω
FH-60	1KΩ ≤ R	0.2Ω ≤ R < 1KΩ	0.1Ω ≤ R < 0.2Ω	—
FHN10	30Ω ≤ R	0.1Ω ≤ R < 30Ω	0.05Ω ≤ R < 0.1Ω	0.03Ω ≤ R < 0.05Ω
FHN25	50Ω ≤ R	0.1Ω ≤ R < 50Ω	0.05Ω ≤ R < 0.1Ω	0.02Ω ≤ R < 0.05Ω
FHN50	100Ω ≤ R	0.1Ω ≤ R < 100Ω	0.05Ω ≤ R < 0.1Ω	0.02Ω ≤ R < 0.05Ω
FHN55	100Ω ≤ R	0.1Ω ≤ R < 100Ω	0.05Ω ≤ R < 0.1Ω	0.02Ω ≤ R < 0.05Ω
FHN60	500Ω ≤ R	0.4Ω ≤ R < 500Ω	0.05Ω ≤ R < 0.4Ω	—

Surface Temp. Versus Power Load. (on chassis)



Test Chassis Dimensions(mm)
 FH(N)10 152×102×51×1t
 FH(N)25 178×127×51×1t
 FH(N)50 178×127×51×1t
 FH(N)55 178×127×51×1t
 FH(N)60 305×305×1.5t

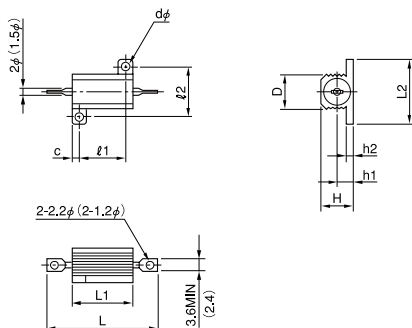
Surface Temp. Versus Power Load. (Free air)



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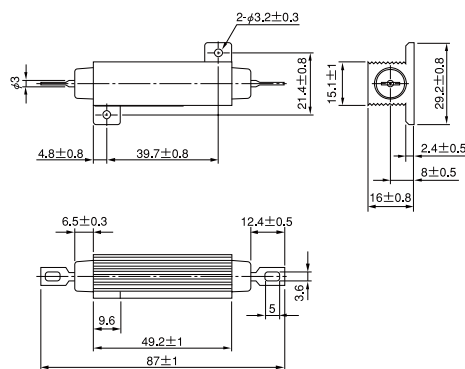
FH / FHN

FH(N)10~FH(N)50

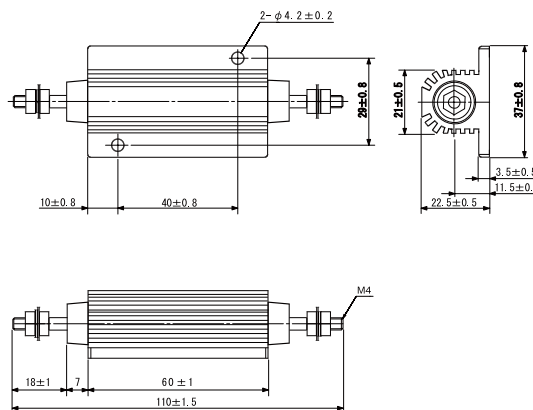


Type	Dimensions (mm)											
	L ± 1.5	L1 ± 1	L2 ± 0.8	l1 ± 0.8	l2 ± 0.8	D ± 1	H ± 0.8	d ± 0.3	c ± 0.8	h1 ± 1	h2 ± 0.5	M
FH-10	35	19	20	14.3	15.9	10.8	10	2.4	2.4	5.3	2.4	—
FH-25	49	27	28	18.3	19.8	13.5	14	3.2	4.4	7.1	2.4	—
FH-50	71	49.2	29.2	39.7	21.4	15.1	16	3.2	4.8	8	2.5	—

FH(N)55



FH(N)60



Performance:(Following figures are not applied to the resistors less than 0.1Ω)

Terminal Strength	(1) Pull Test (30 sec MIN) FH-10 22N, FH-25 FH-50 FH-55 44N (2) Torque Test (5~15 sec) FH-60 2.7N·m	±(0.2%+0.05Ω)
Heat Resistance	200°C 2Hr	±(0.5%+0.05Ω)
Dielectric Strength	FIG.1 1min.	±(0.2%+0.05Ω)
Insulation Resistance	DC500V	1000MΩ MIN
Short Time Over Load	5×Wattage Rating 5 sec	±(0.5%+0.05Ω)
Moisture Resistance	Temp. 40°C Moisture 95% 1/10×Wattage Rating (1.5Hr ON 0.5Hr OFF) Repeat 500Hr	±(0.5%+0.05Ω)
Load Life	Load Rating (chassis mounted) 1.5Hr ON 0.5Hr OFF Repeat 1000Hr	FH(N)10~FH(N)55 ±(1%+0.05Ω) FH(N)60 ±(3%+0.05Ω)
Vibration	10Hz - 55Hz - 10Hz(1 min) Horizontal and vertical direction for 2 Hr each	±(0.2%+0.05Ω)

About Pulsed Load Power

Please refer to "How to select a wire-wound resistor at a short time overload"(Document #PDB101-2-1f). It is available by sending us a request form on our website.

How to order

FH-60 100Ω F
 Type Resistance Tolerance

- Type: "FHN" for non-inductive wire winding type
- Standard Resistance E-24 Series J (±5%)
- Order for a single piece accepted for any resistance value within the standard resistance range

