

Specifications Per

• IEC 60115-4

Features

- Flameproof multi-layer coating meets UL 94 V-0
- Flameproof feature meets overload test UL 1412
- High power handling in small size
- Anti-surge capability
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000Pcs
EFR52	6.50 ± 1.0	2.4 ± 0.2	26 ± 3.0	0.55 ± 0.03	220 Grams
EFR207	6.50 ± 1.0	2.4 ± 0.2	26 ± 3.0	0.60 ± 0.03	220 Grams
EFR101	8.80 ± 1.0	3.2 ± 0.2	28 ± 3.0	0.60 ± 0.03	340 Grams
EFR201	11.0 ± 1.0	4.0 ± 0.5	28 ± 3.0	0.70 ± 0.03	500 Grams
EFR300	15.5 ± 1.0	5.5 ± 0.5	30 ± 3.0	0.80 ± 0.03	1200 Grams
EFR400	19.0 ± 1.0	6.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	1600 Grams
EFR500	19.0 ± 1.0	8.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	3100 Grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
EFR52	1/2W	500V	700V	1Ω	1MΩ	±1%, ±2%, ±5%	E-24/E-96
EFR207	1W	500V	800V	1Ω	1MΩ	±1%, ±2%, ±5%	E-24/E-96
EFR101	1W	600V	900V	1Ω	1MΩ	±2%, ±5%	E-24/E-48
EFR201	2W	750V	1000V	1Ω	1MΩ	±2%, ±5%	E-24/E-48
EFR300	3W	800V	1200V	1Ω	560KΩ	±2%, ±5%	E-24/E-48
EFR400	4W	800V	1200V	1Ω	180KΩ	±2%, ±5%	E-24/E-48
EFR500	5W	800V	1200V	1Ω	180KΩ	±2%, ±5%	E-24/E-48

Special sizes, values, and specifications not listed available on special order.

PART NUMBER

Example: EFR101J100KTKZTB2K0

EFR101	J	100K	TKZ	TB2K0
Type	Tolerance*	Resistance	TCR	Packaging
	F (1%) G (2%) J (5%)	100KΩ 4-character code containing - 3 significant digits 1 letter multiplier MULTIPLIER R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.**	5-character code TB = Tape Box (pieces per box) <u>EFR52/EFR207</u> 5K0 = 5,000 <u>EFR101</u> 2K0 = 2,000 <u>EFR201</u> 1K0 = 1,000 <u>EFR300/400</u> 500 = 500 <u>EFR500</u> 400 = 400

* Listed values may not be applicable across the product series/all resistance values. Please check with us before placing order.

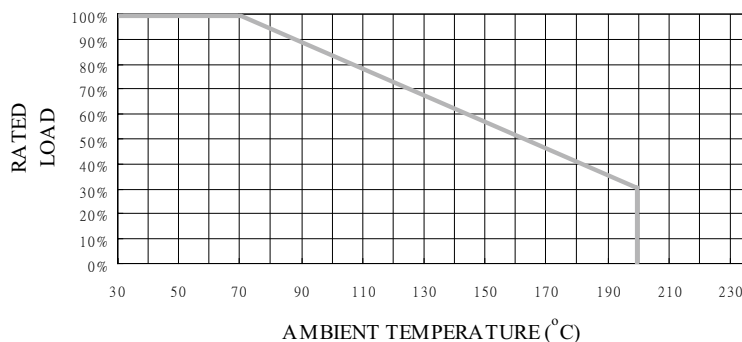
** For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

TECHNICAL SUMMARY

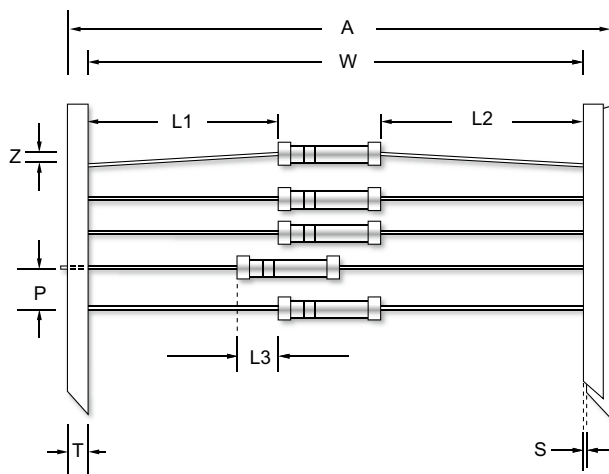
Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	500
Temperature Coefficient, PPM / °C*	±50, ±100, ±200, ±300, ±500
Operating Temperature Range, °C	-55~+200
Insulation Resistance, MΩ	10 ⁴

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

POWER DERATING CURVE



TAPING/PACKING SPECIFICATIONS



Unit (mm)

Type	A Max.	L1-L2 (Max.)	L3 (Max.)	P ±0.5	S (Max.)	T ±0.5	W ±1.5	Z (Max.)
EFR52	65	±1.0	0.5	5.0	0.8	6.0	52.5	1.2
EFR207	65	±1.0	0.5	5.0	0.8	6.0	52.5	1.2
EFR101	65	±1.0	0.5	5.0	0.8	6.0	52.5	1.2
EFR201	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
EFR300	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
EFR400	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
EFR500 L option	76	±1.5	1.0	10.0	0.8	6.0	63.5	1.2
	95	±1.5	1.0	10.0	0.8	6.0	77	1.2

■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±2%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	±1.5%
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	EFR52/207: ±1.5% EFR101/201: ±2.0% EFR300/400/500: ±5.0%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C / (2±0.2) seconds with flux applied	90% Min.
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±1%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 200°C without load	±1%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±2%
Resistance to Climatic Sequence	IEC 60115-1 4.23 Dry heat, damp heat cycle, cold, low air pressure	±2%
Terminal Strength	IEC 60115-1 4.16.2 2.5kg direct load for 10 seconds in the longitudinal direction of the terminal leads	±1%