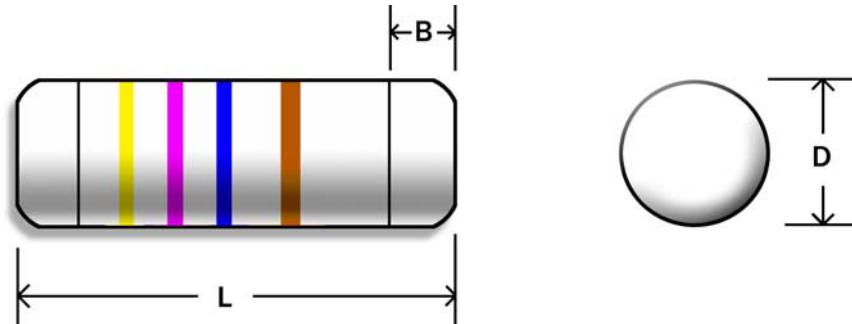


EFP- Enhanced Film Power MELF Resistor

Features

- High Power Handling
- Superior Reliability and Stability
- SMD Enabled Structure
- Pb-free Version Available, Pure Tin Plated Termination for Excellent Solderability



Dimensions

Type	Body Length (L, mm)	Body Diameter (D, mm)	Soldering Spot (B, mm)	Net Weight Per 1000 pcs
EFP204	3.45 ± 0.1	1.35 ± 0.1	0.6 Min.	17 grams
EFP101	5.90 ± 0.2	2.20 ± 0.1	1.0 min.	66 grams
EFP201	8.50 ± 1.0	3.00 ± 0.2	1.3 min.	186 grams
EFP301	10.5 ± 1.0	4.00 ± 0.5	1.6 min.	446 grams
EFP401	12.6 ± 1.5	4.60 ± 0.7	1.8 min.	750 grams
EFP501	14.6 ± 2.0	5.10 ± 1.0	2.0 min.	1000 grams

General Specifications

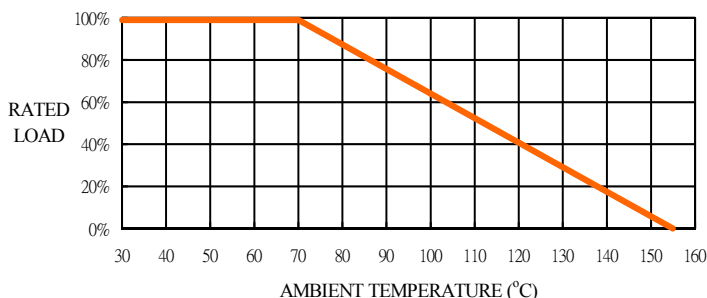
Type	Power Rating (at 70°C)	Max. Working Voltage	Max. Overload Voltage	Resistance Range Min.	Resistance Range Max.	Resistance Tolerance	Standard Resistance Value
EFP204	1/2W	250V	500V	0Ω	1MΩ	±0.5%~5%	E-24 / 96
EFP101	1W	300V	600V	0Ω	1MΩ	±0.5%~5%	E-24 / 96
EFP201	2W	350V	700V	0Ω	4.7MΩ	±0.5%~5%	E-24 / 96
EFP301	3W	400V	800V	0Ω	6.8MΩ	±0.5%~5%	E-24 / 96
EFP401	4W	400V	800V	0Ω	8.2MΩ	±0.5%~5%	E-24 / 96
EFP501	5W	450V	900V	0Ω	10MΩ	±0.5%~5%	E-24 / 96

Special sizes, values, and specifications not listed available on special order. For values between 1mΩ & 510mΩ, please see CSM series.

Sep. 1, 2004

EFP- Enhanced Film Power MELF Resistor

POWER DERATING CURVE



Technical Summary:

Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	EFP204: 300 EFP101: 500 EFP201: 700 EFP301, EFP401, EFP501: 1000
Temperature Coefficient, PPM / °C	≤ 1MΩ: ±200 1.1MΩ~6.8MΩ: ±350 > 6.8MΩ: ±500
Operating Temperature Range, °C	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴
Voltage Coefficient, PPM / V	<25
Failure Rate in Time, pcs / 10 ⁹ device hours	<1

Performance Specifications

Tests Characteristics	Test Conditions	Limits
Short Time Overload	IEC 60115-1 4.13 2 seconds 2.5x rated voltage (not over max. overload voltage)	±0.5%, 1%: ±(0.5%+0.05R) ±2%: ±(0.8%+0.05R) ±5%: ±(2%+0.05R)
Load Life In Humidity	IEC 60115-1 4.24 56 days at 40°C and 93% relative humidity	±(5%+0.05R)
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load 1.5 hours ON, 0.5 hours OFF, at 70°C	±(5%+0.05R)
Resistance To Soldering Heat	IEC 60115-1 4.18 10 seconds at 260°C solder bath temperature	±(1%+0.05R)
Solderability	MIL-STD-202 Method 208 Solder area covered after 230±5°C/5±0.5 seconds w/ flux applied	95% Min.
Vibration	MIL-STD-202 Method 204 Six hours in each parallel and axial direction w/ a simple harmonic motion having an amplitude of 1.52mm and 10 to 20,000 Hz.	±(1%+0.05R)
Terminal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	±(1%+0.05R)
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±(2%+0.05R)

Ordering Information

Type	Tolerance	Resistance Value	Packaging	Special Request (Optional)
EFP101	D(0.5%), F(1%)	84K5	B (Bulk)	LV
EFP201	G (2%), J (5%)	1M69	TR (Tape/Reel)	(Low value)