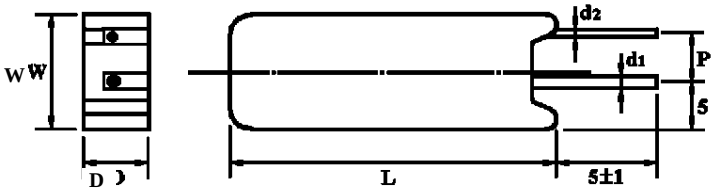
Cement Thermal Fusible Resistors

Features:

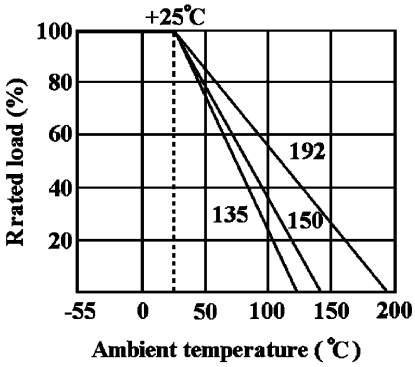
- Self Extinguishing
- Extremely small and mechanically safe
- Excellent flame and moisture resistance
- Provides outstanding feature against surges
- Very low or Very high ohmic values available upon request

Dimension



* TFM3, TFM5, TFMI0C: Leads centered

Derating Curve



Style	Dimension (mm)					
	D±1	L±1	d1	$d2^{+0.02}_{-0.05}$	P±1	W±1
TFM 3	8.5	25	0.6	0.7	5.0	12.5
TFM 5	9.0	25	0.6	0.8	5.0	12.5
TFM 7	9.0	38	0.6	0.8	5.0	12.5
TFM 10C	12	35	1.0	0.8	5.0	16.0

Rating

Style	Rated Temp.	Cut-Off Temp.	Power Rating	Current Rating	Voltage Rating	Resistance Range	Tolerance
TFM 3A	135°C	130°C±4°C	1.5W	2A	250V	1Ω-100Ω	J=5% K=10%
TFM 3B	150°C	145°C±4°C	2.0W				
TFM 5A	135°C	130°C±4°C	1.6W				
TFM 5B	150°C	145°C±4°C	2.1W				
TFM 7A	135°C	130°C±4°C	2.2W				
TFM 7B	150°C	145°C±4°C	2.7W				
TFM 10C	192°C	188°C±3/1°C	3.5W	10A	250V	1Ω-200Ω	

Performance Specifications

Characteristics	Test Methods	Limits
Temperature coefficient JIS - C - 5202 5.2	Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1 (t_2 - t_1)} \times 10^6$ (PPM / °C) R_1 : Resistance value at room temperature (t_1) R_2 : Resistance value at room temp. plus 100 °C (t_2)	≤± 350 PPM / °C <20Ω±400 PPM/ °C
Dielectric withstanding voltage JIS - C - 5202 5.7	Resistors shall be clamped in the trough of a 90° metallic V- block and shall be tested at AC potential respectively for 60+ 10 / -0 seconds.	No evidence of flashover, mechanical damage, arcing or insulation break down.
Temperature cycling JIS - C - 5202 7.4	Resistance change after continuous five cycles for duty cycle specified below: **Step** / **Temperature** / **Time** 1 / -55°C ± 3°C / 30 minutes 2 / Room temp / 10~15 minutes 3 / + 155°C ± 2°C / 30 minutes 4 / Room temp / 10~15 minutes	Resistance change rate is ± (2% + 0.05Ω). No evidence of mechanical damage
Short - time overload JIS - C - 5202 5.5	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.	Resistance change rate is ± (5% + 0.05Ω) No evidence of mechanical damage
Load life in humidity JIS - C - 5202 7.9	Resistance change after 1000 hours operating at RCWV with duty cycle of 1.5 hours “on”, 0.5 hour “off” in a humidity test chamber controlled at 40°C±2°C and 90 to 95% relative humidity.	**Resistance value** / **▲R/R** Wirewound / ± 5% Power film: Less than 100KΩ / ± 5% 100KΩ or more / ± 10%
Load life JIS - C - 5202 7.10	Permanent resistance change after 1,000 hours operating at RCWV, with duty cycle of 1.5 hours “on”, 0.5 hour “off” at 70°C ± 2°C ambient.	**Resistance value** / **▲R/R** Wirewound / ± 5% 100KΩ or more / ± 5% Power film: Less than 100KΩ / ± 10% 100KΩ or more
Terminal strength JIS - C - 5202 6.1	**Direct load :** Resistance to a 2.5 kgs direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads. **Twist test :** Terminal leads shall be bent through 90° at point of about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.	No evidence of mechanical damage
Resistance to soldering heat JIS - C - 5202 6.4	Permanent resistance change when leads immersed to 3.2 mm to 4.8 mm from the body in 350°C ± 10°C solder for 3 ± 0.5 seconds	Resistance change rate is ± (1% + 0.05W). No evidence of mechanical damage
Solderability JIS - C - 5202 6.5	The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. of solder : 235°C ± 5°C Dwell time in solder : 3 + 0.5 / - 0 seconds	95% coverage Min.

*Rated Continuous Working Voltage (RCWV) shall be determined from

RCWV = $\sqrt{\text{Rated Power x Resistance Value}}$