

Carbon Film Resistor MELF Type

CFM Series

MERITEK

FEATURE

- Operating temperature: -55 ~ +155°C
- SMD style carbon resistor
- High solderability
- High electrodes strength
- Lower current noise
- Application: telecommunication, medical equipment, consumer product



PART NUMBERING SYSTEM

$\frac{\text{CFM}}{(1)}$ $\frac{0204}{(2)}$ $\frac{V}{(3)}$ $\frac{1000}{(4)}$ $\frac{G}{(5)}$ $\frac{T}{(6)}$



| No | Item | Code | Description | Series Reference |
|-----|----------------|------|----------------------|-----------------------|
| (1) | Meritek Series | CFM | Carbon Film Resistor | MELF SMD Type |
| (2) | Size Code | 0204 | 0204 | 0207, 0309 |
| (3) | Power Rating | V | V: 1/4W | S: 2W, T: 1W, U: 1/2W |
| (4) | Resistance | 1000 | 1000: 100Ω | 1R00: 1Ω ~ 105:1MΩ |
| (5) | Tolerance | G | G: ±2% | J: ±5% |
| (6) | Packaging | T | T: Taping Reel | B: Bulk |

ELECTRICAL CHARACTERISTICS

Standard Electrical Specification

| Size | Power Rating at 70°C | Operating Temperature | Max Operating Voltage | Max Overload Voltage | Resistance | |
|------|----------------------|-----------------------|-----------------------|----------------------|------------|-----|
| | | | | | ±2% | ±5% |
| 0204 | 1/4W | -55 ~ +155°C | 250V | 500V | 1~1MΩ | |
| 0207 | 1/2W | -55 ~ +155°C | 300V | 600V | 1~1MΩ | |
| 0309 | 1W | -55 ~ +155°C | 350V | 700V | 1~1MΩ | |

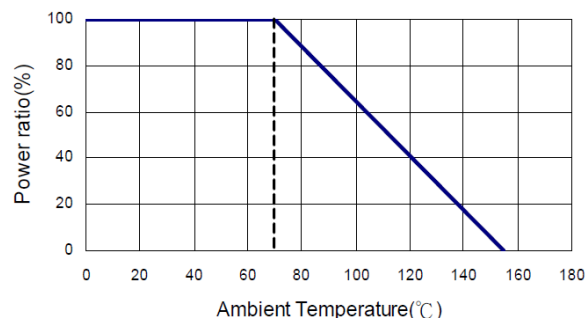
High Power Rating Electrical Specification

| Size | Power Rating at 70°C | Operating Temperature | Max Operating Voltage | Max Overload Voltage | Resistance | |
|------|----------------------|-----------------------|-----------------------|----------------------|------------|-----|
| | | | | | ±2% | ±5% |
| 0207 | 1W | -55 ~ +155°C | 350V | 700V | 1~1MΩ | |
| 0309 | 2W | -55 ~ +155°C | 350V | 700V | 1~1MΩ | |

Notes:

1. Operating Voltage = $\sqrt{P \cdot R}$ or Maximum operating voltage listed above, whichever is lower.
2. Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$ or Maximum overload voltage listed above, whichever is lower.

POWER DERATING CURVE

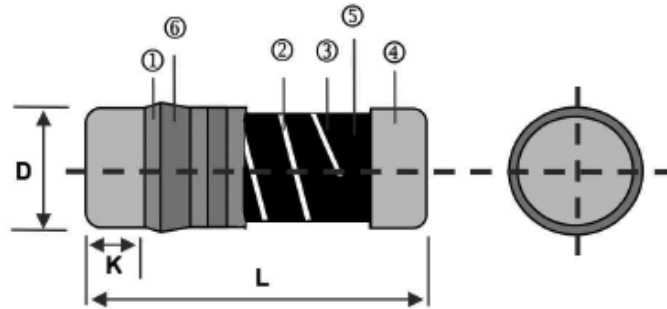


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DIMENSIONS



| Size | L (mm) | D (mm) | K (min.) | Weight (g/ 1000pcs) | Packaging | |
|------|----------|-----------|----------|---------------------|-----------|-----------|
| | | | | | 180mm/7" | 330mm/13" |
| 0204 | 3.50±0.2 | 1.40±0.15 | 0.50 | 19 | 3000EA | - |
| 0207 | 5.90±0.2 | 2.20±0.20 | 0.50 | 81 | 2000EA | - |
| 0309 | 8.50±0.2 | 3.20±0.20 | 0.50 | 95 | - | 2500EA |

CONSTRUCTION

| Item | Construction | Item | Construction |
|------|--------------------|------|----------------|
| 1 | Insulation Coating | 4 | Electrode Cap |
| 2 | Trimming Line | 5 | Resistor Layer |
| 3 | Ceramic Rod | 6 | Marking |

RELIABILITY TEST CONDITION AND REQUIREMENT

| Test | Standard | Test Condition | Requirement |
|--|-------------------|---|--|
| Temperature Coefficient of Resistance (T.C.R.) | JIS-C-5201-1 4.8 | -55°C ~ +125°C, 25°C is the reference temperature | 1Ω~100KΩ: ±350ppm 101KΩ~500KΩ: ±700ppm 501KΩ~1MΩ: ±1000ppm |
| Short Time Overload | JIS-C-5201-1 5.5 | Overload voltage for 5 seconds | ΔR/R ≤ 1% |
| Endurance | JIS-C-5201-1 7.10 | 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF". | ΔR/R ≤ 3% |
| Damp Heat with Load | JIS-C-5201-1 7.9 | 40±2°C, 90~95% R.H., RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF". | ΔR/R ≤ 5% |
| Dry Heat | JIS-C-5201-1 7.2 | at +155°C for 1000 hrs | ΔR/R ≤ 2% |
| Solderability | JIS-C-5201-1 6.5 | 245±5°C for 3 seconds | 95% min. coverage |
| Resistance to Soldering Heat | JIS-C-5201-1 6.4 | 260±5°C for 10 seconds | ΔR/R ≤ 1% |

Notes:

1. RCWV(Rated continuous working voltage) = $\sqrt{P \cdot R}$ or Max operating voltage, whichever is lower
2. Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$ or Max overload voltage, whichever is lower

*Specifications subject to change without notice.