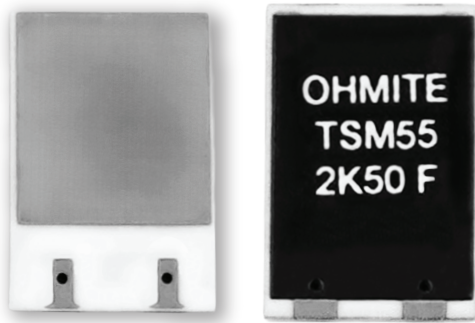


# TSM Series

## 55W TO-263 Thick Film Resistor



### FEATURES

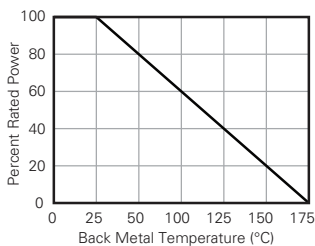
- Small size, low profile, surge capable film resistor
- -55°C to +175°C temperature range provides for automotive applications.
- Low thermal resistance under 3.0°C/W shows excellent cooling performance.
- Easy to replace D2PAK power resistor.
- Excellent rf characteristics for high speed pulse operation.
- Applications include snubber, gate control, bleed-er, filter, rush current protection, PV, UPS and motor control inverters.

### CHARACTERISTICS

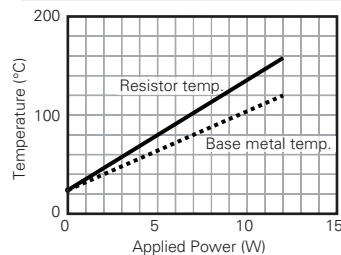
|                               |                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------|
| <b>Rated Power</b>            | 55W at -55°C to 25°C backing metal temperature; 1.0W attached on simple foot print.        |
| <b>Heat Resistance</b>        | 3.0°C/W resistor to back metal                                                             |
| <b>Resistance Range</b>       | 0.10Ω-510kΩ; 0.10Ω-1.0Ω are available at 5% tol. only. E24 plus 2.5, 4.0, 5.0, 8.0, and 16 |
| <b>Tolerance</b>              | ±1% (F), ±5% (J)                                                                           |
| <b>Resistor Material</b>      | Thick Film                                                                                 |
| <b>Capacitance</b>            | 16 pF Equivalent parallel capacitance, typical                                             |
| <b>Inductance</b>             | 41 nH Equivalent series inductance, typical                                                |
| <b>Operating Temp.</b>        | -55°C to +175°C                                                                            |
| <b>Max. Operating Current</b> | 10A                                                                                        |
| <b>Max. Operating Volt.</b>   | less than 500V or $\sqrt{P \cdot R}$ P is rated power and R resistance                     |

| Test                         | Requirement         | Method                                                |
|------------------------------|---------------------|-------------------------------------------------------|
| <b>Short Time Overload</b>   | 55W                 | Rated power X 2.0 and 5 second at 25°C with heat-sink |
| <b>TCR</b>                   | 100ppm/°C           | 10Ω to 51kΩ, around 100 ppm/°C under 9.1Ω             |
| <b>Withstanding Volt.</b>    | 1500 VAC            | Terminal and back metal, 60 seconds. 1mA              |
| <b>Load Life</b>             | ±1.0%               | 25°C, 90 min. ON, 30 min. OFF, 1000h.                 |
| <b>Humidity</b>              | ±1.0%               | 40°C, 90-95%RH, DC 0.1W, 1000 hours.                  |
| <b>Temp. Cycle</b>           | ±0.25%              | -55°C, 30 min., +155°C, 30 min., 5cycle               |
| <b>Soldering Heat</b>        | ±0.1%               | 350 ±5°C, 3 seconds                                   |
| <b>Lead Solderability</b>    | Over 95% of surface | 250°C ±5°C, 5 seconds, RMA flux                       |
| <b>Insulation Resistance</b> | Over 1,000MΩ        | Between terminals and back metal                      |
| <b>Vibration</b>             | ±0.25%              | IEC60068-2-6                                          |
| <b>Weight</b>                | 0.54 gram           |                                                       |

### Derating

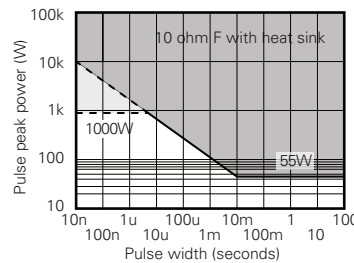


### Temperature Rise



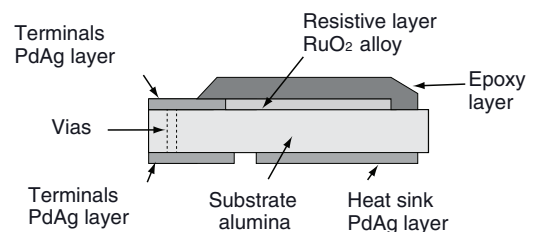
Actual temperature rise for TSM that is jointed on a metal insulated circuit board of 47mm x 73mm x 1mm thick

### Pulse Energy Durability



Tentative continuous-pulse power allowance at duty 0.01. Load life test will be necessary in actual equipments, because curve may be changed by resistance, repetition, duty and operating temperature.

### Construction

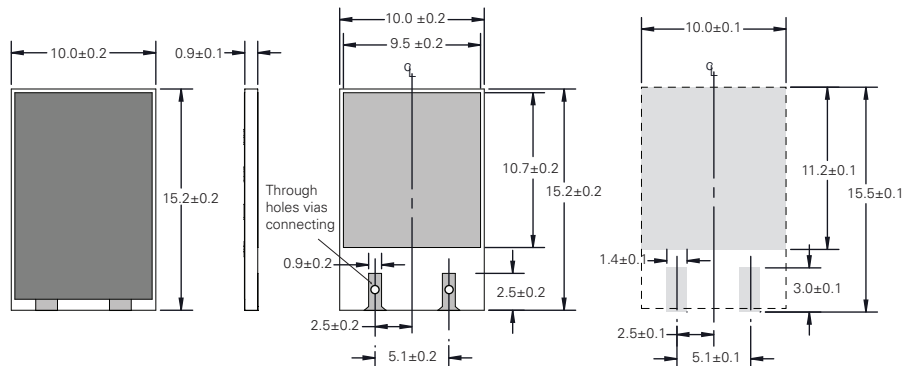


# TSM Series

## 55W TO-263 Thick Film Resistor

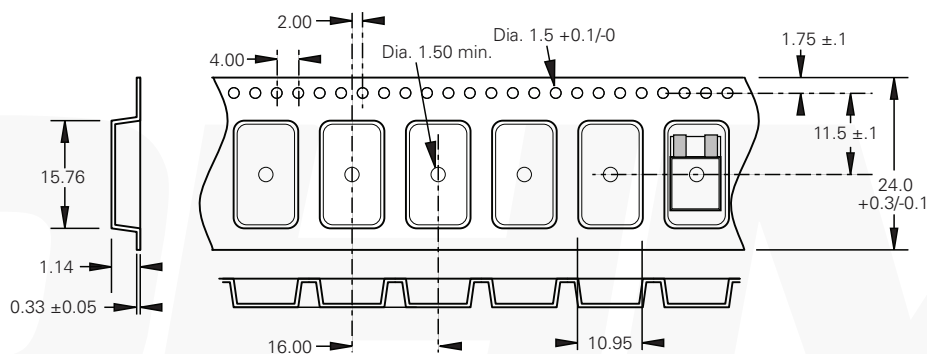
### DIMENSIONS

(mm)



### Tape and reel

500pcs per reel  
330mm reel size



### ORDERING INFORMATION

RoHS Compliant

**T S M 5 5 R 0 5 0 J E - T R**

Series                      Ohms                      Tolerance                      Tape & reel

### Standard Part Numbers

|                |                |
|----------------|----------------|
| TSM55R500JE-TR | TSM5547R0FE-TR |
| TSM551R00FE-TR | TSM5550R0FE-TR |
| TSM551R50FE-TR | TSM55100RFE-TR |
| TSM552R00FE-TR | TSM55150RFE-TR |
| TSM555R00FE-TR | TSM55200RFE-TR |
| TSM557R50FE-TR | TSM55300RFE-TR |
| TSM5510R0FE-TR | TSM55500RFE-TR |
| TSM5520R0FE-TR | TSM551K00FE-TR |
| TSM5525R0FE-TR | TSM552K50FE-TR |
|                | TSM555K00FE-TR |

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[MCR01MZPJ121](#) [MCR01MZPJ125](#) [MCR01MZPJ751](#) [MCR03EZPFX2004](#) [MCR03EZPJ821](#) [MCR10EZPF1102](#) [RC1005F1152CS](#)  
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[NRC04J104TRF](#) [NRC04J204TRF](#) [NRC04ZOTRF](#) [NRC06F1000TRF](#) [NRC06F1002TRF](#) [NRC06F1003TRF](#)