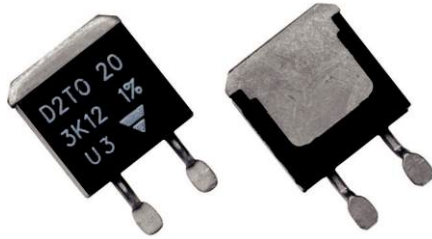


## Surface Mounted Power Resistor Thick Film Technology

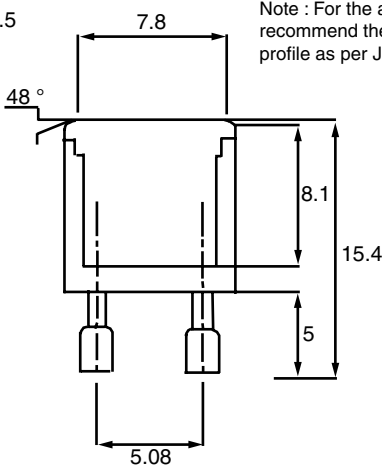
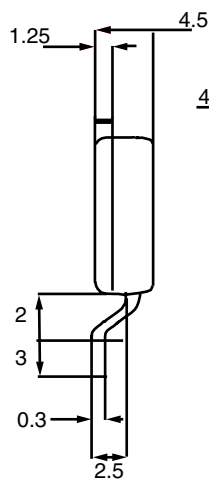
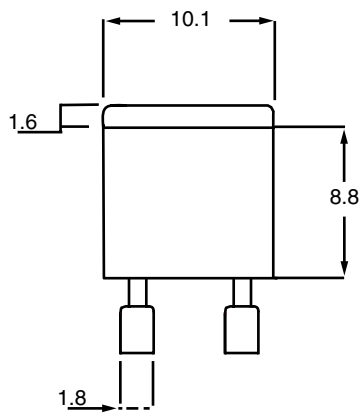


### FEATURES

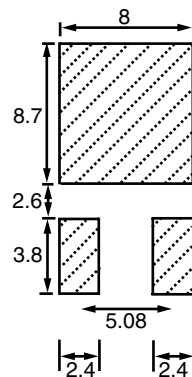
- 20 Watt at 25 °C on the board
- Surface mounted resistor - TO - 263 (D2 PAK) style package
- Wide resistance range from 0.01  $\Omega$  to 550 k $\Omega$
- Non Inductive
- RoHS compliant
- Resistor isolated from Metal Tab
- Support soldering temperature of 260 °C



### DIMENSIONS in millimeters



Footprint for solderable contact area :  
Note : For the assembly on board, we recommend the Lead (Pb)-free thermal profile as per J-STD-020C



### ELECTRICAL SPECIFICATIONS

|                                     |  |
|-------------------------------------|--|
| Resistance Range                    | 0.01 $\Omega$ to 550 K $\Omega$                                      |
| Tolerances (standard)               | $\pm 1\%$ to 10 %  |
| Dissipation and Associated:         | On board   |
| Power Rating and Thermal Resistance | 20 W at 25 °C<br>$R_{TH} (j-c) : 6.5\text{ }^{\circ}\text{C/W}$      |
| Temperature Coefficient             | See Special Features table   |
| Standard                            | $\pm 150\text{ ppm}/^{\circ}\text{C}$                                |
| Limiting Element Voltage            | 250 V  |
| Dielectric Strength Mil STD 202     | 2000 Vrms - 1 minute - 10 mA max<br>(Between Terminals and Heatsink) |
| Insulation Resistance               | $\geq 10^6\text{ M}\Omega$   |
| Inductance                          | $\leq 0.1\text{ }\mu\text{H}$  |
| Critical Resistance                 | 3.12 K $\Omega$  |

### SPECIAL FEATURES

|   |                                       |                                       |                                       |                                       |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Resistance Values                                     | $\geq 0.010$                          | $\geq 0.015$                          | $\geq 0.1$                            | $\geq 0.5$                            |
| Tolerances  | $\pm 1\%$ at $\pm 10\%$               |                                       |                                       |                                       |
| Typical temperature Coefficient<br>(- 55 °C + 150 °C) | $\pm 900\text{ ppm}/^{\circ}\text{C}$ | $\pm 700\text{ ppm}/^{\circ}\text{C}$ | $\pm 250\text{ ppm}/^{\circ}\text{C}$ | $\pm 150\text{ ppm}/^{\circ}\text{C}$ |

**MECHANICAL SPECIFICATIONS**

|                       |               |
|-----------------------|---------------|
| Mechanical Protection | Molded        |
| Resistive Element     | Thick Film    |
| Substrate             | Alumina       |
| Connections           | Tinned Copper |
| Weight                | 2 g max.      |

**ENVIRONMENTAL SPECIFICATIONS**

|                   |                   |
|-------------------|-------------------|
| Temperature Range | - 55 °C to 155 °C |
| Climatic Category | 55/155/56         |

**DIMENSIONS**

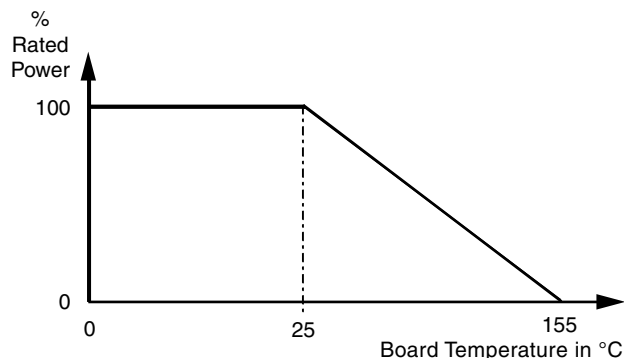
|                  |                          |
|------------------|--------------------------|
| Standard package | TO 263 Style<br>(D2 PAK) |
|------------------|--------------------------|

**PACKAGING**

Reel  
Tube on request

**POWER RATING**

The temperature of the case should be maintained within the limits specified.

**MARKING**

Model, Style, Resistance Value (in Ohm), Tolerance (in %),  
Manufacturing Date, Vishay Trademark.

**PERFORMANCE**

| TESTS                    | CONDITIONS  | TYPICAL DRIFTS                 |
|--------------------------|---|--------------------------------|
| Momentary Overload       | NF EN 140 000 CEI 115-1<br>2Pr/5s<br>$U_s < 1.5U_I$                   | $\pm (0.25 \% + 0.005 \Omega)$ |
| Rapid Temperature Change | NF EN 140 000<br>CEI 68214 Test Na<br>5 cycles<br>- 55 °C to + 155 °C | $\pm (0.5 \% + 0.005 \Omega)$  |
| Load Life                | NF EN 140 000<br>1000h Pr at + 25 °C                                  | $\pm (1 \% + 0.005 \Omega)$    |
| Humidity (Steady State)  | NF EN 140 000<br>56 days R.H > 95 %                                   | $\pm (0.5 \% + 0.005 \Omega)$  |
| Vibration                | MIL STD 202<br>Method 204 C - Test. D                                 | $\pm (0.2 \% + 0.005 \Omega)$  |
| Termination Strength     | MIL STD 202<br>Method 211 Cond. A1                                    | $\pm (0.2 \% + 0.005 \Omega)$  |
| Shock                    | 100 G, MIL STD 202<br>Method 213 Cond. I                              | $\pm (0.5 \% + 0.005 \Omega)$  |

**ORDERING INFORMATION**

| D2TO  | 20    | C           | 100 kΩ              | ± 1 %                             | XXX                                | e3             |
|-------|-------|-------------|---------------------|-----------------------------------|------------------------------------|----------------|
| MODEL | STYLE | CONNECTIONS | RESISTANCE<br>VALUE | TOLERANCE                         | CUSTOM DESIGN                      | LEAD (Pb)-FREE |
|       |       |             |                     | ± 1 %<br>± 2 %<br>± 5 %<br>± 10 % | Optional on request:<br>shape, etc |                |

**SAP PART NUMBERING GUIDELINES**

|                                  |   |   |   |       |   |             |   |                  |   |   |   |   |     |      |                |   |
|----------------------------------|---|---|---|-------|---|-------------|---|------------------|---|---|---|---|-----|------|----------------|---|
| SAP Part Numbering Guidelines    |   |   |   |       |   |             |   |                  |   |   |   |   |     |      |                |   |
| D                                | 2 | T | O | 2     | 0 | C           | - | 1                | 0 | 0 | 0 | 2 | F   | R    | E              | 3 |
| MODEL                            |   |   |   | STYLE |   | CONNECTIONS |   | RESISTANCE VALUE |   |   |   |   | TOL | PACK | LEAD (Pb)-FREE |   |
| SAP Part Number D2TO20C10002FRE3 |   |   |   |       |   |             |   |                  |   |   |   |   |     |      |                |   |



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