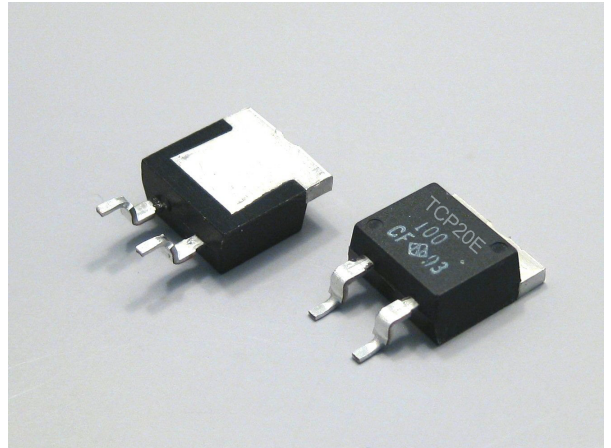


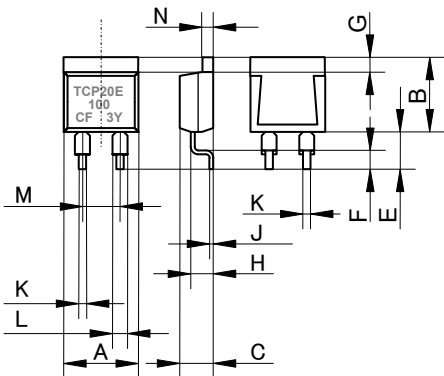
TO263 SURFACE MOUNT 35W HIGH POWER RESISTORS TCP20E



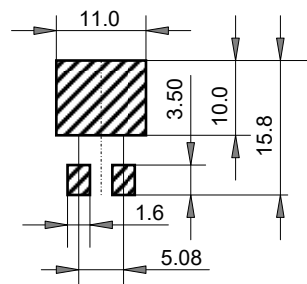
Features and Applications

35W high power resistors in TO263 (D2-PAK) style surface mount mold package with matte Tin plated flange. Non-inductive design suits high frequency applications and high-speed pulse circuits. Low, 3.3°C heat resistance from resistor hot spot to flange and long life performance are presented with thin film metallization technology. Wide, 10 milliohm to 51K Ohm resistance range, non-inductive impedance characteristic and heat extracting through insulated metal flange aids circuit designers. Applications include snubber, gate control, bleeder, filter, rush current protection, braking resistors of automotive, rail traction, wind turbine, PV, UPS and motor control inverters.

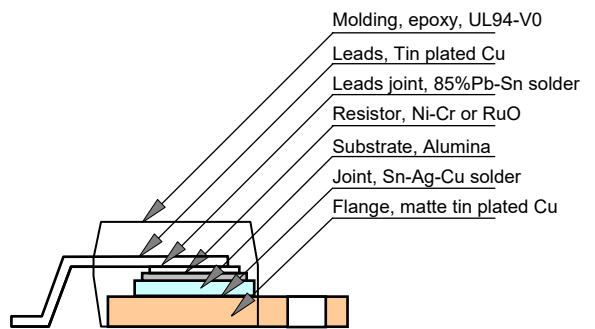
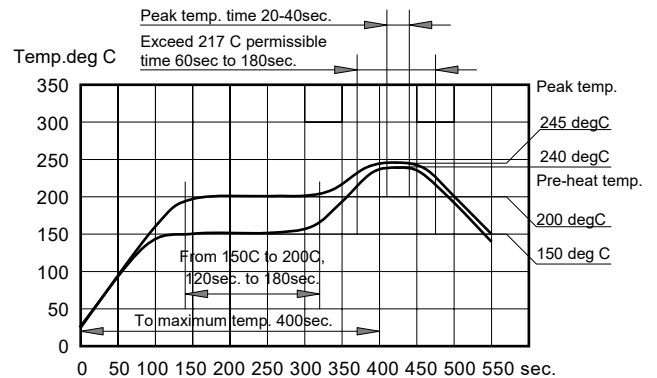
Dimensional Specifications (mm)



| TCP20E | | |
|--------|------|---------|
| | mm | +/-mm |
| A | 10.1 | +/-0.2 |
| B | 10.3 | +/-0.2 |
| C | 4.5 | +/-0.2 |
| D | - | - |
| E | 5.0 | +/-1.0 |
| F | 2.5 | +/-0.5 |
| G | 2.2 | +/-0.2 |
| H | 2.75 | +/-0.2 |
| J | 0.5 | +/-0.05 |
| K | 0.75 | +/-0.05 |
| L | 1.5 | +/-0.05 |
| M | 5.08 | +/-0.10 |
| N | 1.5 | +/-0.05 |



Recommended Land Pattern. (mm)
Additional heat cooling system will be necessary



Between flange and resistor is insulated.

Ordering Information

| | | | | |
|-------------------|--------------|-----------------------------|----------------|-----------------|
| Model TCP20E - | TCR A | Resistance Value 1R0 (*) | Tolerance F | Packaging TB |
| TCP20E - | H(>250ppm) > | R02-R09 (+E6) > | J(5%) > | TB |
| | A(100ppm) > | R10-510K(+E24) > | F(1%), J(5%) > | TR |
| | C(50ppm) > | 10R-51K (+E24) > | F(1%) > | |

Resistance value (*) is available following modified E24, +E24.

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.0 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.5 | 2.7 | 3.0 | 3.3 |
| 3.6 | 3.9 | 4.0 | 4.3 | 4.7 | 5.0 | 5.1 | 5.6 | 6.2 | 6.8 | 7.5 | 8.0 | 8.2 | 9.1 |

TO263 SMD 35W HIGH POWER RESISTORS

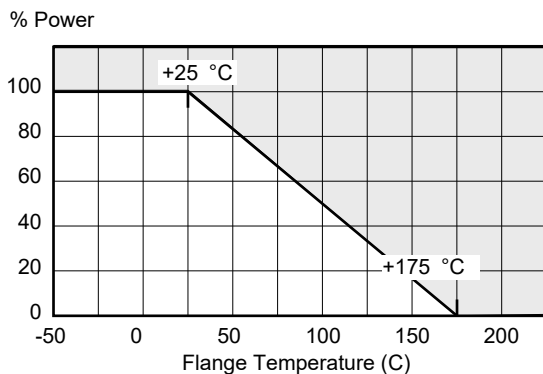
TCP20E

Specifications

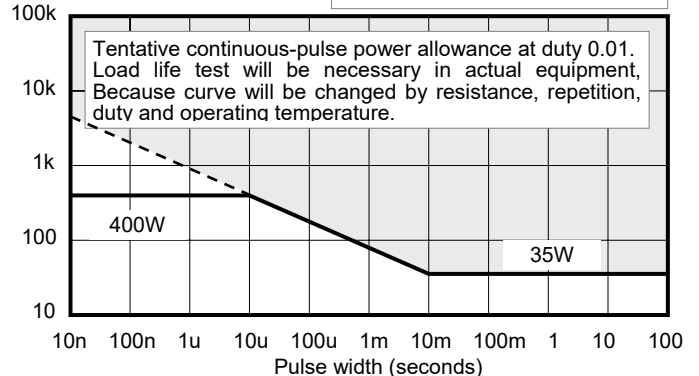
| | TCP20E | | | Test Conditions |
|-----------------------|-----------------------------------|----------------|-----------|---|
| Rating Power | 35 Watt | | | -55 °C to 25 °C flange temperature |
| Rating Power | 2 Watt | | | Attached on simple foot print. |
| Heat Resistance | 3.3 °C/W | | | Resistor hot spot to flange |
| Resistance Range | 0.02-0.091Ω | 0.1-510 k ohm | 10-51KΩ | Note 2 |
| Nominal | E6 | E24+ | E24 | Include 2.5, 4.0, 5.0, 8.0 and 16 |
| TCR(ppm/°C) | 250(H) | 100 (A) | 50 (C) | Note 3. |
| Tolerance | 5%(J) | 1% (F), 5% (J) | +/-1% (F) | 1% tolerance at 0.01-0.091 Ω are available. |
| Resistor Material | Thick Film | | Thin Film | |
| Capacitance | 1.44pF | | | Equivalent parallel capacitance. |
| Inductance | 8.38nH | | | Equivalent series inductance |
| Operation Temp. | -55 °C to +175 °C | | | |
| Operating Volt. | Either 500V or $\sqrt{P \cdot R}$ | | | P is rating power and R resistance |
| Withstanding Volt. | 2000 VAC | | | Terminal and flange, 60 seconds. 1mA |
| Load Life | +/- 1.0 % | | | 25 °C, 90 min.ON, 30 min. OFF, 1000h. |
| Humidity | +/- 1.0 % | | | 40 °C, 90-95%RH, DC 0.1W, 1000 hours. |
| Temp. Cycle | +/- 0.25 % | | | -55 °C,30 min.,+155 °C,30 min., 5cyc |
| Soldering Heat | +/- 0.1 % | | | 350+/-5 °C, 3seconds. |
| Lead Solder ability | Over 95% of surface | | | 230+/-5 °C, 3seconds. |
| Insulation Resistance | Over 1,000 Meg Ω | | | Between terminals and tab. |
| Vibration | +/- 0.25 % | | | IEC60068-2-6, see note 4 |
| Flammability | UL94-V0 | | | |
| Weight | 1.5 grams | | | |

Pulse Energy Durability

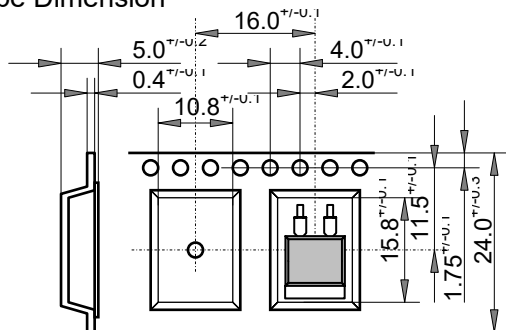
Power Derating



Pulse peak power (W)



Tape Dimension



Reel Dimension

Outer diameter: 330 mm
 Inner diameter: 100 mm
 Width: 23.9 mm min. 27.4 mm max
 Package quantity: 500pcs/13 inches reel

Note:

- (1) Flange insulation is not necessary between flange and heat-sink, flange and resistor is separated by alumina substrate.
- (2) Resistance measurement shall be made at terminal foot position.
- (3) TCR of low resistance will be increased as 300ppm/0.02Ω, 200ppm/0.05Ω, 140ppm/0.1Ω and 80ppm/0.2Ω typically. Testing point is at 5.27mm from bottom of molding of terminals.
- (4) Test method is IEC60068-2-6, and specification is sine sweep wave form, 100Hz-2000Hz, 10 cycles, amplitude 0.75mm or 100m/s², 90minutes. direction x-y z, Amplitude 0.75mm will be applied under break point Frequency (about 60Hz) and 100m/ s² over break point
- (5) Standard packaging is tape reel, a tape reel contains 500pcs. when small quantity, tube packaging will be used, the tube is made by RoHS PS/PE which contains 50pcs / tube.