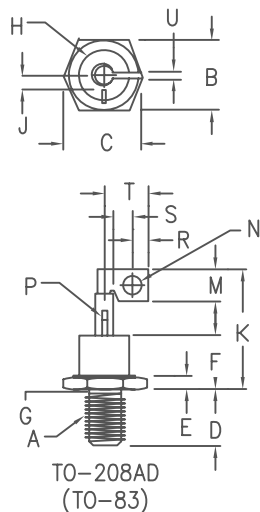


Silicon Controlled Rectifiers

2N1794-1804; 2N4371-4377



Note 1: 1/2-20 UNF-3A
 Note 2: Full thread within 2 1/2 threads

| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A | --- | --- | --- | --- | 1 |
| B | 1.050 | 1.060 | 26.67 | 26.92 | |
| C | --- | 1.161 | --- | 29.49 | |
| D | .797 | .827 | 20.24 | 21.01 | |
| E | .276 | .286 | .701 | 7.26 | |
| F | --- | .948 | --- | 24.08 | |
| G | .425 | .499 | 10.80 | 12.67 | 2 |
| H | --- | .900 | --- | 22.86 | Dia. |
| J | .225 | .275 | 6.48 | 6.99 | |
| K | --- | 1.750 | --- | 44.45 | |
| M | .370 | .380 | 9.40 | 9.65 | |
| N | .213 | .223 | 5.41 | 5.66 | Dia. |
| P | .065 | .075 | 1.65 | 1.91 | Dia. |
| R | .215 | .225 | 5.46 | 5.72 | |
| S | .290 | .315 | 7.37 | 8.00 | |
| T | .514 | .530 | 13.06 | 13.46 | |
| U | .089 | .099 | 2.26 | 2.51 | |

| Microsemi Catalog Number | Microsemi Catalog Number | V _{DRM} /V _{RRM} |
|--------------------------|--------------------------|------------------------------------|
| 2N1794 | 2N4371 | 100 |
| 2N1795 | 2N4372 | 200 |
| 2N1796 | | 300 |
| 2N1797 | 2N4373 | 400 |
| 2N1798 | | 500 |
| 2N1799 | 2N4374 | 600 |
| 2N1800 | | 720 |
| 2N1801 | | 700 |
| 2N1802 | 2N4375 | 800 |
| 2N1803 | | 900 |
| 2N1804 | 2N4376 | 1000 |
| | 2N4377 | 1200 |

- High dv/dt-100 V/usec.
- 1600 Amperes surge current
- Low forward on-state voltage
- Package conforming to TO-208AD outline
- Economical for general purpose phase control applications

Electrical Characteristics

| | | |
|---|---|-------------------------------|
| Max. RMS on-state current | I _{T(RMS)} 110 Amps | T _C = 87°C |
| Max. average on-state cur. | I _{T(AV)} 70 Amps | T _C = 87°C |
| Max. peak on-state voltage | V _{TM} 1.6 Volts | I _{TM} = 220 A(peak) |
| Max. holding current | I _H 200 mA | |
| Max. peak one cycle surge current | I _{TSM} 1600 A | T _C = 87°C, 60 Hz |
| Max. I ² t capability for fusing | I ² t 10,624A ² S | t = 8.3 ms |

Thermal and Mechanical Characteristics

| | | |
|--------------------------------------|------------------|----------------------------------|
| Operating junction temp range | T _J | -65°C to 125°C |
| Storage temperature range | T _{STG} | -65°C to 150°C |
| Maximum thermal resistance | R _{ΘJC} | 0.40°C/W Junction to case |
| Typical thermal resistance (greased) | R _{ΘCS} | 0.20°C/W Case to sink |
| Mounting torque | | 100-130 inch pounds |
| Weight | | 3.24 ounces (91.8 grams) typical |

2N1794-1804; 2N4371-4377

Switching

| | | | |
|--|---------|------------|---------------------------|
| Critical rate of rise of on-state current (note 1) | di/dt | 100A/usec. | $T_J = 125^\circ\text{C}$ |
| Typical delay time (note 1) | t_d | 3.0 usec. | |
| Typical circuit commuted turn-off time (note 2) | t_q | 100 usec. | $T_J = 125^\circ\text{C}$ |

Note 1: $I_{TM} = 50\text{A}$, $V_D = V_{DRM}$, $V_{GT} = 12\text{V}$ open circuit, 20 ohm-0.1 usec. rise time
 Note 2: $I_{TM} = 50\text{A}$, $di/dt = 5\text{A/usec.}$, V_R during turn-off interval = 50V min.,
 reapplied $dv/dt = 20\text{V/usec.}$, linear to rated V_{DRM} , $V_{GT} = 0\text{V}$

Triggering

| | | | |
|----------------------------------|-------------|-------|---------------------------|
| Max. gate voltage to trigger | V_{GT} | 3.0V | $T_J = 25^\circ\text{C}$ |
| Max. nontriggering gate voltage | V_{GD} | 0.25V | $T_J = 125^\circ\text{C}$ |
| Max. gate current to trigger | I_{GT} | 100mA | $T_J = 25^\circ\text{C}$ |
| Max. peak gate power | P_{GM} | 15W | |
| Average gate power | $P_{G(AV)}$ | 3.0W | $t_p = 10 \text{ usec.}$ |
| Max. peak gate current | I_{GM} | 4.0A | |
| Max. peak gate voltage (forward) | V_{GM} | 10V | |
| Max. peak gate voltage (reverse) | V_{GM} | 5.0V | |

Blocking

| | | | |
|--|--------------------|-------------------|---|
| Max. leakage current | I_{DRM}, I_{RRM} | 10mA | $T_J = 125^\circ\text{C} \ \& \ V_{DRM}, V_{RRM}$ |
| Max. reverse leakage | I_{RRM}, I_{DRM} | 100 μA | $T_J = 25^\circ\text{C} \ \& \ V_{RRM}, V_{RRM}$ |
| Critical rate of rise of off-state voltage | dv/dt | 100V/usec. | $T_J = 125^\circ\text{C}$ |

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Figure 1
Typical Forward On-State Characteristics

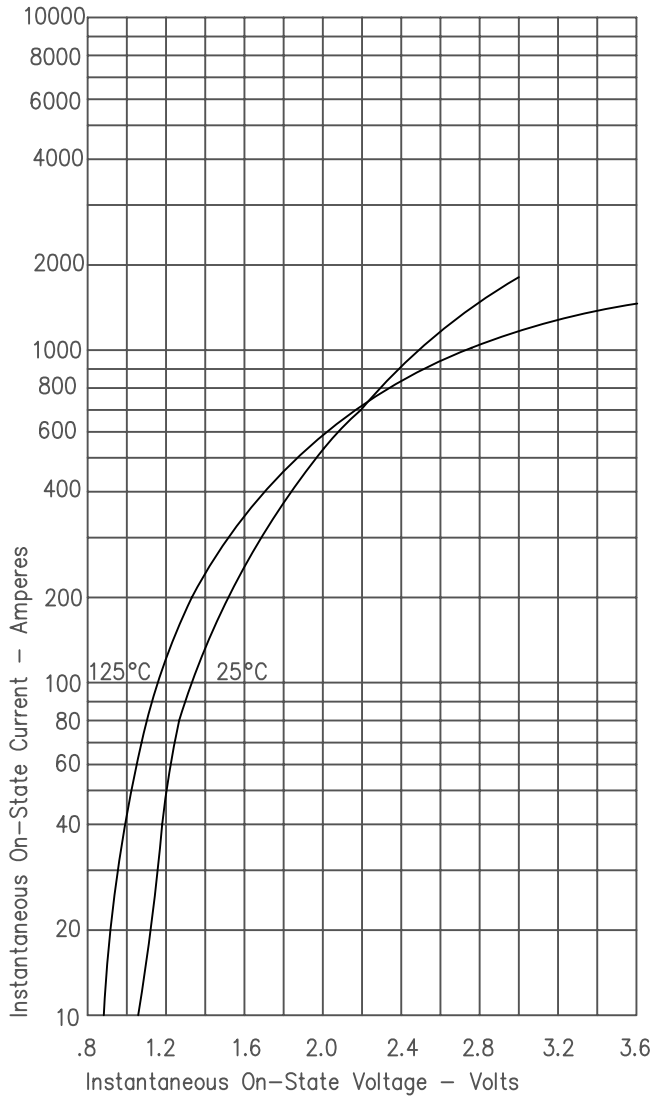


Figure 3
Maximum Power Dissipation

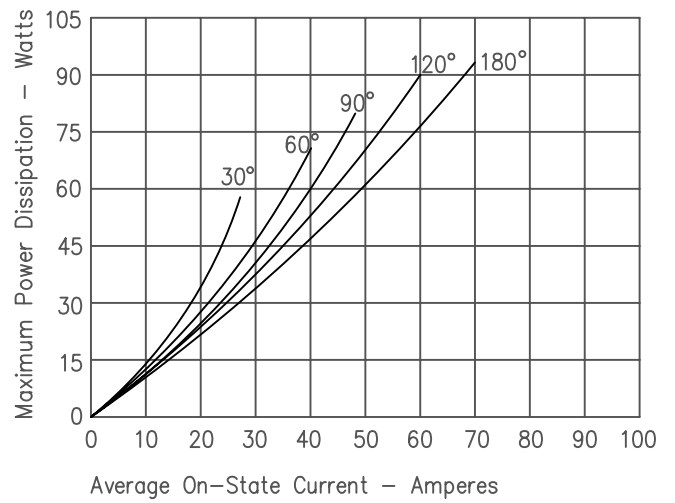


Figure 4
Transient Thermal Impedance

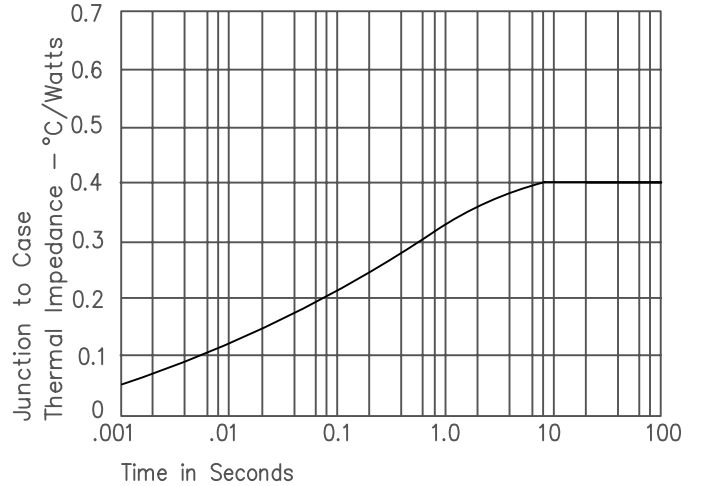


Figure 2
Forward Current Derating

