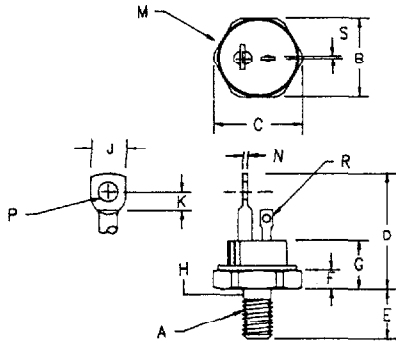


Silicon Controlled Rectifier Series 40C



| Dim. | Inches | | Millimeter | | Notes |
|------|---------|---------|------------|---------|-------|
| | Minimum | Maximum | Minimum | Maximum | |
| A | --- | --- | --- | --- | 1 |
| B | .677 | .685 | 17.20 | 17.40 | |
| C | --- | .770 | --- | 19.56 | |
| D | 1.200 | 1.250 | 30.48 | 31.75 | |
| E | .427 | .447 | 10.84 | 11.35 | |
| F | .115 | .155 | 2.92 | 3.94 | |
| G | --- | .515 | --- | 13.08 | |
| H | --- | .249 | --- | 6.32 | 2 |
| J | .200 | .300 | 5.08 | 7.62 | |
| K | .120 | --- | 3.05 | --- | |
| M | --- | .667 | --- | 16.94 | Dia. |
| N | .065 | .085 | 1.65 | 2.15 | |
| P | .145 | .155 | 3.68 | 3.93 | Dia. |
| R | .055 | .065 | 1.40 | 1.65 | Dia. |
| S | .025 | .030 | .64 | .76 | |

Note 1: 1/4-28 UNF-3A
Note 2: Full thread within 2 1/2 threads

TO-208AC (TO-65)

| Microsemi Catalog Number | Forward & Reverse Repetitive Blocking | Reverse Transient Blocking |
|--------------------------|---------------------------------------|----------------------------|
| 40C20B | 200 | 300 |
| 40C40B | 400 | 500 |
| 40C60B | 600 | 700 |
| 40C80B | 800 | 900 |
| 40C100B | 1000 | 1100 |
| 40C120B | 1200 | 1300 |

To specify dv/dt other than 200V/usec., contact factory.

- dv/dt-200 V/usec
- 1000 Amperes surge current
- Economical for medium power applications
- Compact TO-208AC package

| Electrical Characteristics | | |
|---|---------------------------------------|-------------------------------|
| Max. RMS on-state current | I _{T(RMS)} 63 Amps | T _C = 102°C |
| Max. average on-state cur. | I _{T(AV)} 40 Amps | T _C = 102°C |
| Max. peak on-state voltage | V _{TM} 2.6 Volts | I _{TM} = 500 A(peak) |
| Max. holding current | I _H 200 mA | |
| Max. peak one cycle surge current | I _{TSM} 1000 A | T _C = 120°C, 60Hz |
| Max. I ² t capability for fusing | I ² t 4100A ² S | t = 8.3 ms |

| Thermal and Mechanical Characteristics | | |
|--|------------------|--------------------------------|
| Operating junction temp range | T _J | -40°C to 125°C |
| Storage temperature range | T _{STG} | -40°C to 150°C |
| Maximum thermal resistance | R _{θJC} | 0.35°C/W Junction to case |
| Typical thermal resistance | R _{θCS} | 0.20°C/W Case to sink |
| Max mounting torque | | 30 inch pounds maximum |
| Weight | | 0.56 ounces (16 grams) typical |

F

PH: 303-469-2161
FAX: 303-466-3775

Microsemi Corp.
Colorado

F-1

40C

$T_J = 25^\circ\text{C}$ unless otherwise indicated

| Switching | | | |
|--|---------|------------|---------------------------|
| Critical rate of rise of on-state current (note 1) | di/dt | 200A/usec. | $T_J = 125^\circ\text{C}$ |
| Typical delay time (note 1) | t_d | 3.0 usec. | $T_J = 125^\circ\text{C}$ |
| Typical circuit commuted turn-off time (note 2) | t_q | 100 usec. | |
| Note 1: $I_{TM} = 50\text{A}$, $V_D = V_{DRM}$, $G_T = 12\text{V}$ 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} , $V_{GI} = 0\text{V}$ | | | |

| Triggering | | | |
|----------------------------------|-------------|-------|---------------------------|
| Max. gate voltage to trigger | V_{GT} | 3.0V | $T_J = 125^\circ\text{C}$ |
| Typical gate voltage to trigger | V_{GT} | 1.0V | |
| Max. nontriggering gate voltage | V_{GD} | 0.25V | |
| Max. gate current to trigger | I_{GT} | 100mA | |
| Typical gate current to trigger | I_{GT} | 48mA | $t_p = 10 \text{ usec.}$ |
| Max. peak gate power | P_{GM} | 10W | |
| Average gate power | $P_{G(AV)}$ | 1.0W | |
| Max. peak gate current | I_{GM} | 3.0A | |
| Max. peak gate voltage (forward) | V_{GM} | 20V | |
| Max. peak gate voltage (reverse) | V_{GM} | 10V | |

| Blocking | | | |
|--|-----------|------------|--|
| Max. leakage current | I_{DRM} | 6mA | $T_J = 125^\circ\text{C} \ \& \ V_{DRM}$ |
| Max. reverse leakage | I_{RRM} | 6mA | $T_J = 125^\circ\text{C} \ \& \ V_{RRM}$ |
| Critical rate of rise of off-state voltage | dv/dt | 200V/usec. | $T_J = 125^\circ\text{C}$ |

40C

Figure 1
Typical Forward On-State Characteristics

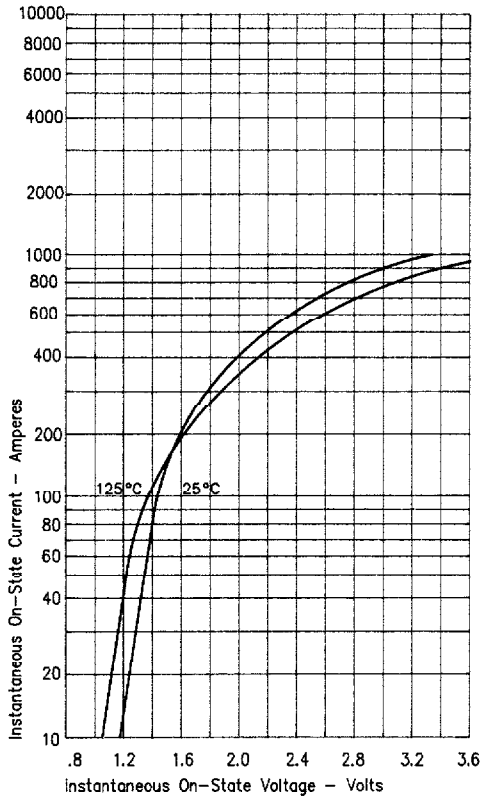


Figure 3
Maximum Power Dissipation

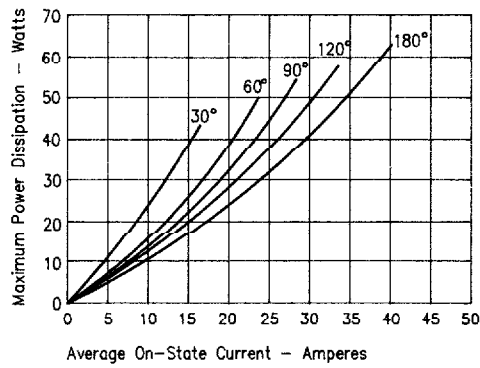
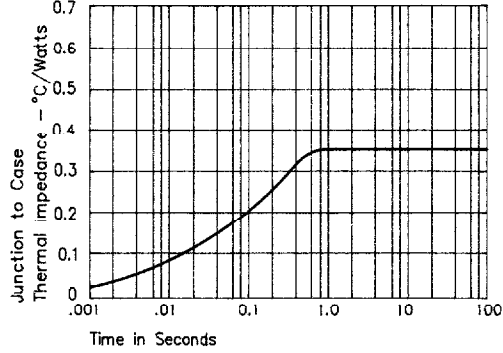


Figure 4
Transient Thermal Impedance



F

Figure 2
Forward Current Derating

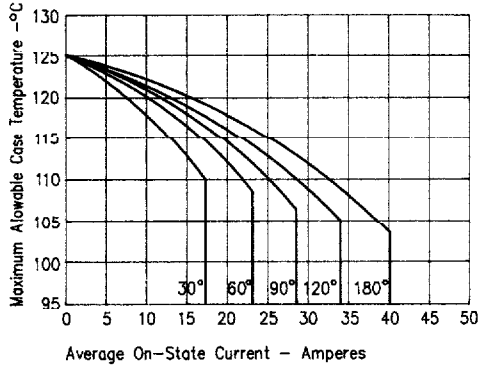


Figure 5
Maximum Nonrepetitive Surge Current

