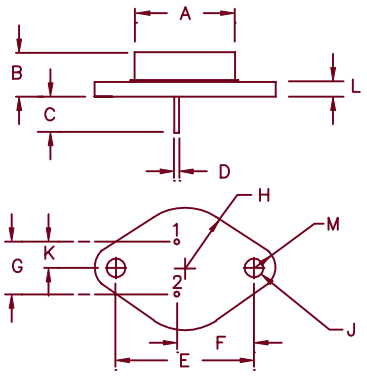
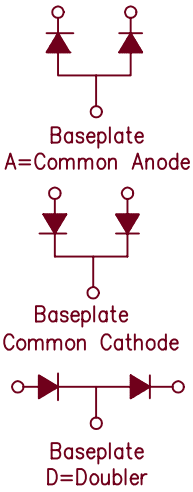
# Silicon Dual Power Rectifier
# ST6020 – ST60100




| Dim. | Inches | | Millimeter | | |
|---|---|---|---|---|---|
| | Minimum | Maximum | Minimum | Maximum | Notes |
| A | — | .875 | — | 22.23 | Dia. |
| B | .250 | .450 | 6.35 | 11.43 | |
| C | .312 | — | 7.92 | — | |
| D | .057 | .063 | 1.45 | 1.60 | Dia. |
| E | 1.177 | 1.197 | 29.90 | 30.40 | |
| F | .655 | .675 | 16.64 | 17.15 | |
| G | .420 | .440 | 10.67 | 11.18 | |
| H | — | .525 | — | 13.34 | Rad. |
| J | .151 | .161 | 3.84 | 4.09 | Dia. |
| K | .205 | .225 | 5.21 | 5.72 | |
| L | — | .135 | — | 3.43 | |
| M | — | .188 | — | 4.78 | Rad. |

TO–3

| Microsemi Catalog Number | Peak Reverse Voltage |
|---|---|
| ST6020* | 200V |
| ST6040* | 400V |
| ST6060* | 600V |
| ST6080* | 800V |
| ST60100* | 1000V |

*Add D, or A
Standard processing is common cathode with no suffix added.

- Glass passivated die
- Glass to metal seal construction
- $V_{RRM}$ 200 to 1000V
- 400A Surge Rating
- Available as common anode, common cathode, or doubler

## Electrical Characteristics Per Leg

| | | |
|---|---|---|
| Average forward current per leg (standard) | $I_{F(AV)}$ 20 Amps | $T_C$ = 150°C, half sine wave, $R_{\theta JC}$ = 1.2°C/W |
| Average forward current per leg (reverse) | $I_{F(AV)}$ 20 Amps | $T_C$ = 146°C, half sine wave, $R_{\theta JC}$ = 1.4°C/W |
| Maximum surge current | $I_{FSM}$ 400 Amps | 8.3ms, half sine, $T_J$ = 175°C |
| Max $I^2t$ for fusing | $I^2t$ 665 $A^2s$ | |
| Max peak forward voltage | $V_{FM}$ 1.1 Volts | $I_{FM}$ = 30A; $T_J$ = 25°C* |
| Max peak reverse current | $I_{RM}$ 10 μA | $V_{RRM}$, $T_J$ = 25°C |
| Max peak reverse current | $I_{RM}$ 1.0 mA | $V_{RRM}$, $T_J$ = 150°C |
| Max recommended operating frequency | 10kHz | |

*Pulse test: Pulse width 300 μsec. Duty cycle 2%

## Thermal and Mechanical Characteristics

| | | |
|---|---|---|
| Storage temperature range | $T_{STG}$ | –65°C to 200°C |
| Operating junction temp range | $T_J$ | –65°C to 175°C |
| Maximum thermal resistance (standard polarity) | $R_{\theta JC}$ | 1.2°C/W Junction to case |
| Maximum thermal resistance (reverse polarity) | $R_{\theta JC}$ | 1.4°C/W Junction to case |
| Typical thermal resistance (greased) | $R_{\theta CS}$ | 0.5°C/W Case to sink |
| Weight | | 1.0 ounces (28 grams) typical |

12–7–00 Rev. 1

COLORADO Microsemi
800 Hoyt Street
Broomfield, CO. 80020
PH: (303) 469–2161
FAX: (303) 466–3775
www.microsemi.com

# ST6020 – ST60100

Figure 1
Typical Forward Characteristics – Per Leg

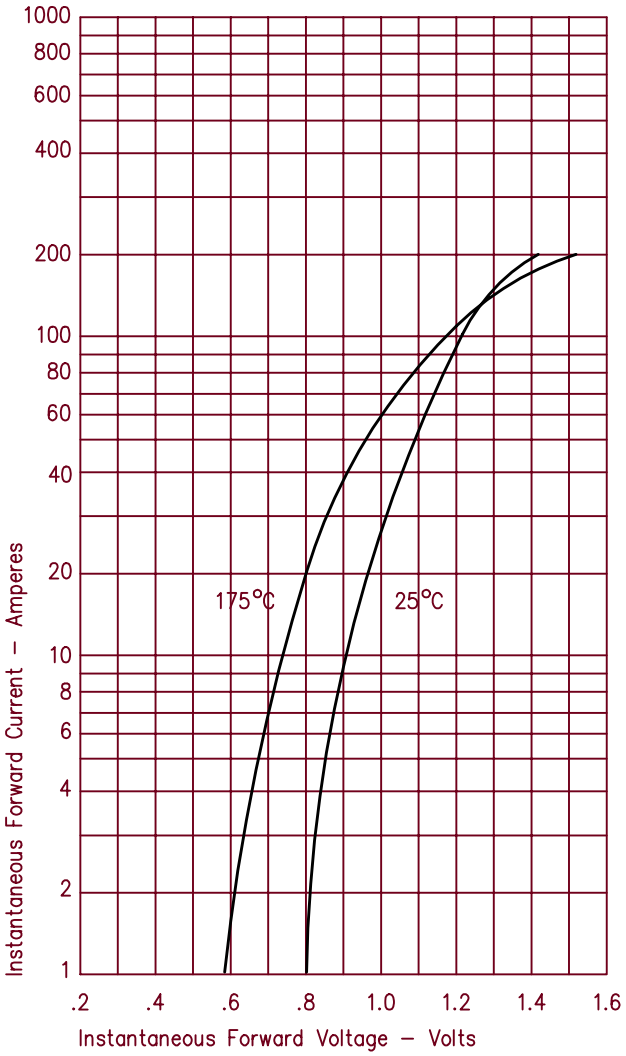



Figure 2
Typical Reverse Characteristics – Per Leg

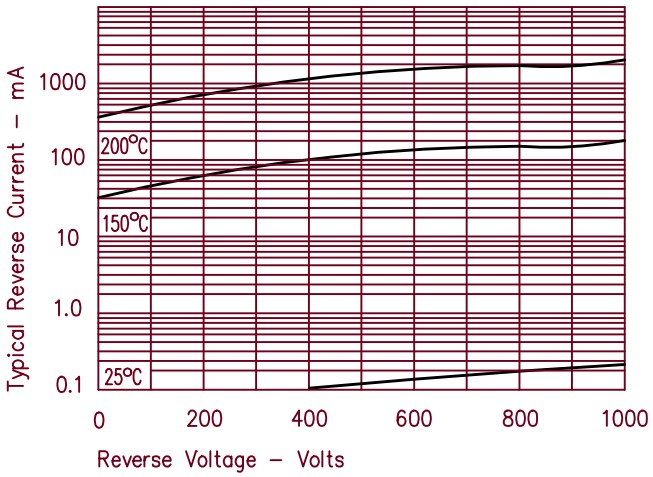



Figure 3
Forward Current Derating – Per Leg – Standard Polarity

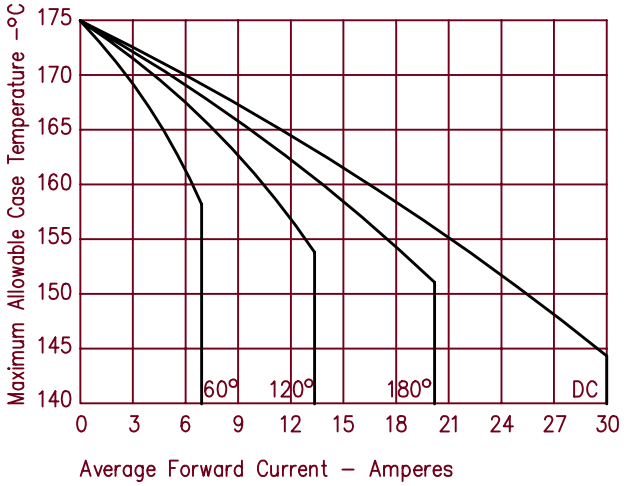



Figure 4
Maximum Forward Power Dissipation – Per Leg – Standard Polari

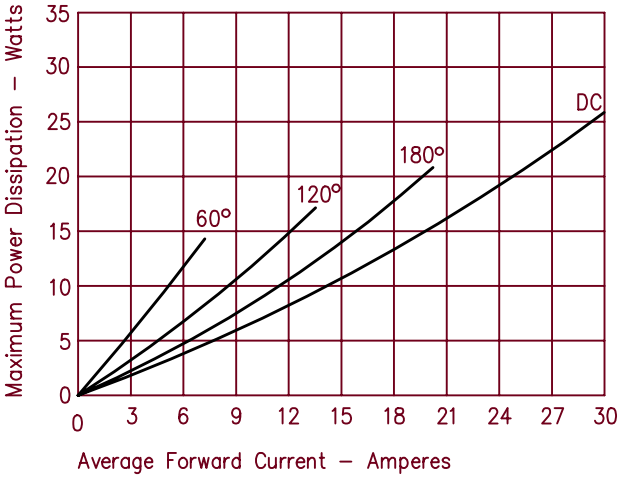
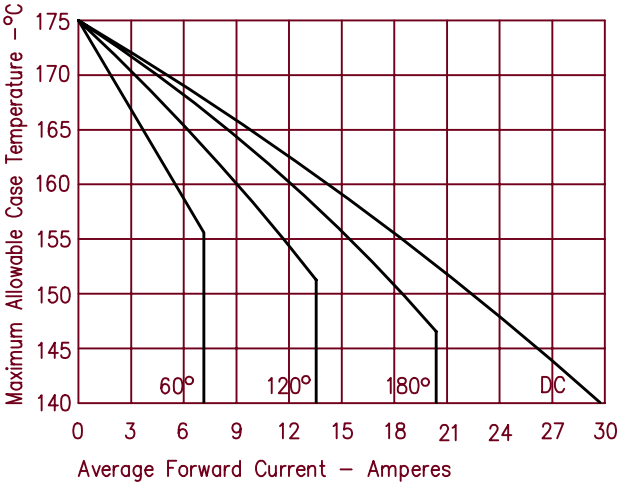



Figure 5
Forward Current Derating – Per Leg – Reverse Polarity




12–7–00 Rev. 1

# ST6020 – ST60100

Figure 6
Maximum Forward Power Dissipation – Per Leg – Reverse Polarity

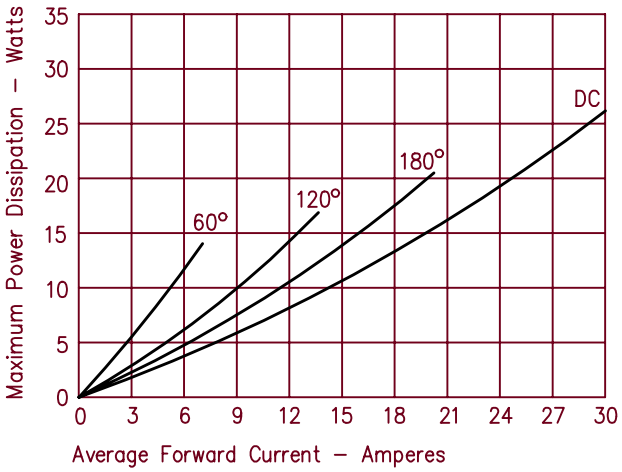



Figure 8
Transient Thermal Impedance – Reverse Polarity

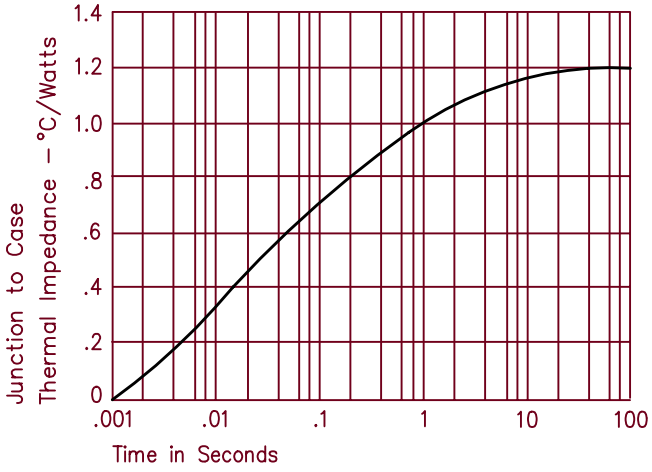



Figure 7
Transient Thermal Impedance – Per Leg – Standard Polarity

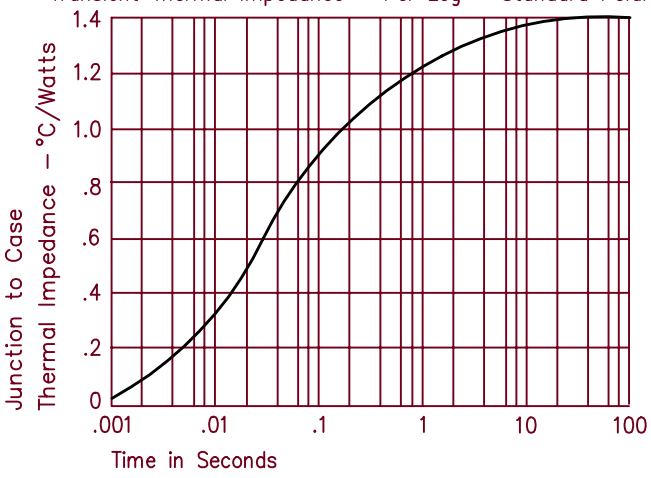



Figure 9
Maximum Nonrepetitive Surge Current