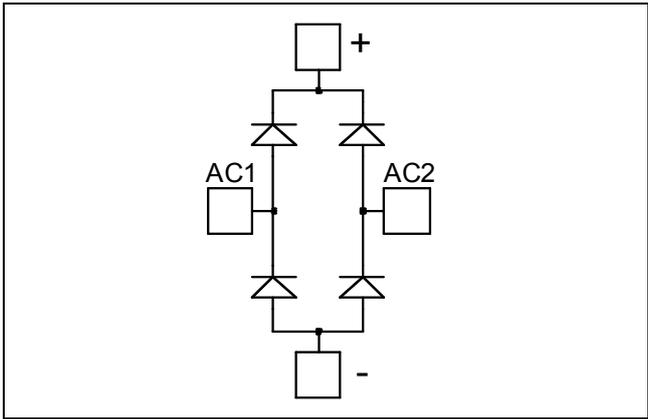


Diode Full Bridge Power Module

$V_{RRM} = 600V$
 $I_C = 200A @ T_c = 80^{\circ}C$

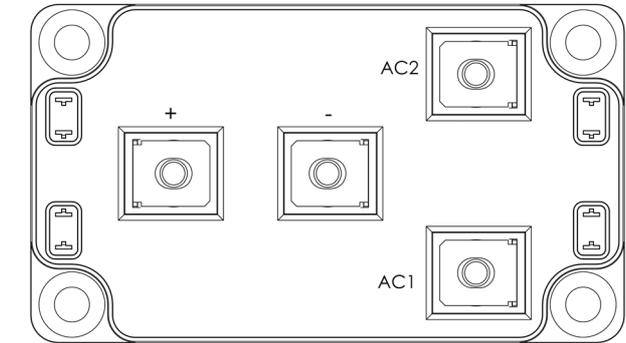


Application

- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

Features

- Ultra fast recovery times
- Soft recovery characteristics
- High blocking voltage
- High current
- Low leakage current
- Very low stray inductance
 - Symmetrical design
 - M5 power connectors
- High level of integration



Benefits

- Outstanding performance at high frequency operation
- Low losses
- Low noise switching
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- RoHS Compliant

All ratings @ $T_j = 25^{\circ}C$ unless otherwise specified

Absolute maximum ratings

| Symbol | Parameter | Max ratings | Unit | |
|---------------------|---|---------------------|---------------------|------|
| V_R | Maximum DC reverse Voltage | 600 | V | |
| V_{RRM} | Maximum Peak Repetitive Reverse Voltage | | | |
| $I_{F(AV)}$ | Maximum Average Forward Current | Duty cycle = 50% | A | |
| | | $T_C = 25^{\circ}C$ | | 270 |
| $T_C = 80^{\circ}C$ | 200 | | | |
| $I_{F(RMS)}$ | RMS Forward Current | Duty cycle = 50% | | 270 |
| I_{FSM} | Non-Repetitive Forward Surge Current | 8.3ms | $T_C = 45^{\circ}C$ | 1500 |

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

Electrical Characteristics

| <i>Symbol</i> | <i>Characteristic</i> | <i>Test Conditions</i> | | <i>Min</i> | <i>Typ</i> | <i>Max</i> | <i>Unit</i> |
|-----------------|---------------------------------|------------------------|------------------------|------------|------------|------------|-------------|
| V _F | Diode Forward Voltage | I _F = 200A | | | 1.6 | 2.0 | V |
| | | I _F = 400A | | | 2.0 | | |
| | | I _F = 200A | T _j = 125°C | | 1.3 | | |
| I _{RM} | Maximum Reverse Leakage Current | V _R = 600V | T _j = 25°C | | | 350 | μA |
| | | | T _j = 125°C | | | 600 | |
| C _T | Junction Capacitance | V _R = 600V | | | 380 | | pF |

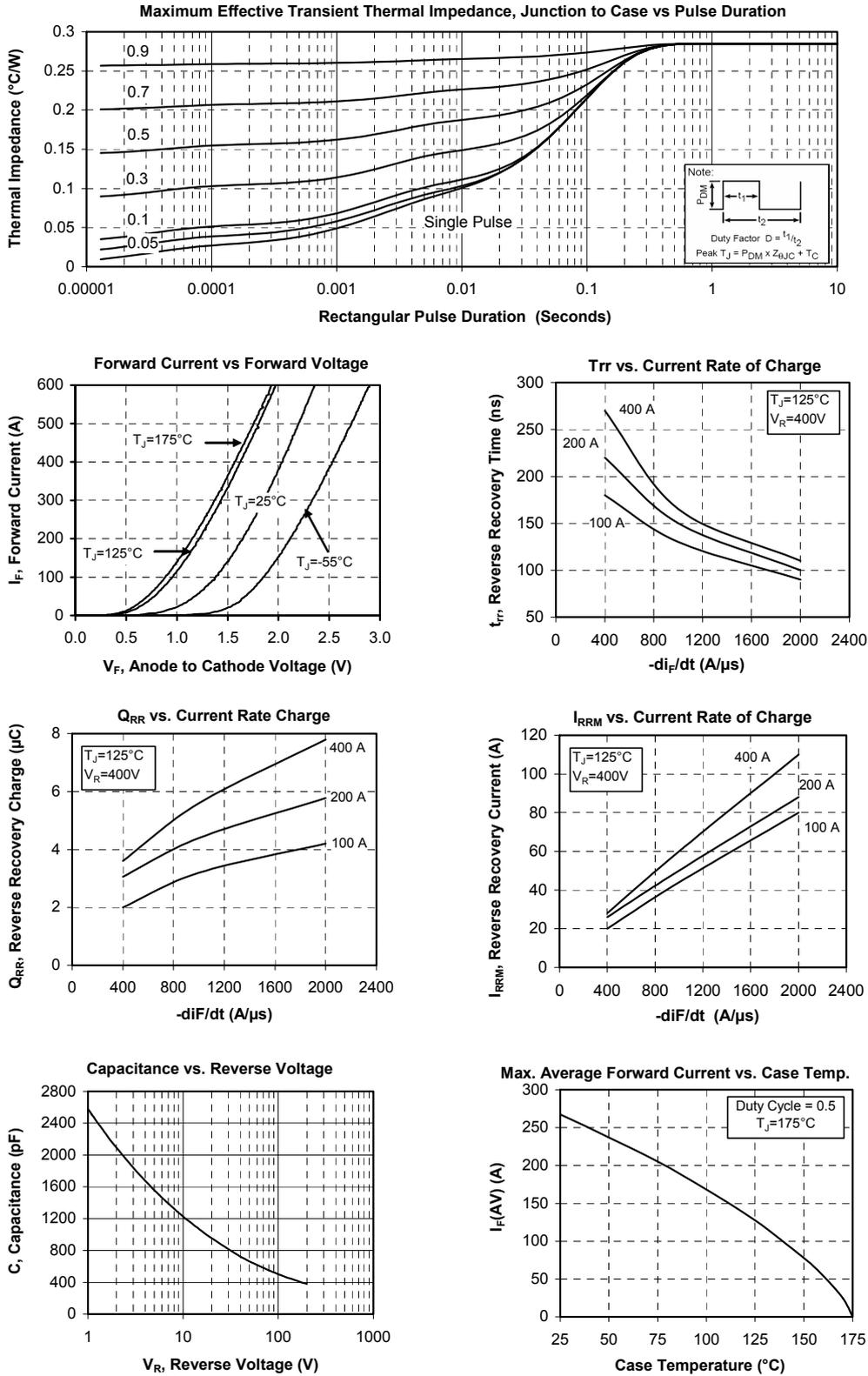
Dynamic Characteristics

| <i>Symbol</i> | <i>Characteristic</i> | <i>Test Conditions</i> | | <i>Min</i> | <i>Typ</i> | <i>Max</i> | <i>Unit</i> |
|-------------------|--------------------------|--|------------------------|------------|------------|------------|-------------|
| t _{rr} | Reverse Recovery Time | I _F =1A, V _R =30V | T _j = 25°C | | 34 | | ns |
| t _{rr} | Reverse Recovery Time | I _F = 200A V _R = 400V di/dt = 400A/μs | T _j = 25°C | | 160 | | ns |
| | | | T _j = 125°C | | 220 | | |
| Q _{rr} | Reverse Recovery Charge | | T _j = 25°C | | 580 | | nC |
| | | | T _j = 125°C | | 3060 | | |
| I _R RM | Reverse Recovery Current | | T _j = 25°C | | 10 | | A |
| | | | T _j = 125°C | | 26 | | |
| t _{rr} | Reverse Recovery Time | I _F = 200A V _R = 400V di/dt = 2000A/μs | T _j = 125°C | | 100 | | ns |
| Q _{rr} | Reverse Recovery Charge | | | | 5.78 | | μC |
| I _R RM | Reverse Recovery Current | | | | 88 | | A |

Thermal and package characteristics

| <i>Symbol</i> | <i>Characteristic</i> | <i>Min</i> | <i>Typ</i> | <i>Max</i> | <i>Unit</i> | |
|-------------------|---|---------------|------------|------------|-------------|-----|
| R _{thJC} | Junction to Case Thermal Resistance | | | 0.285 | °C/W | |
| V _{ISOL} | RMS Isolation Voltage, any terminal to case t =1 min, 50/60Hz | 4000 | | | V | |
| T _J | Operating junction temperature range | -40 | | 175 | °C | |
| T _{STG} | Storage Temperature Range | -40 | | 125 | | |
| T _C | Operating Case Temperature | -40 | | 100 | | |
| Torque | Mounting torque | To heatsink | M6 | 3 | 5 | N.m |
| | | For terminals | M5 | 2 | 3.5 | |
| Wt | Package Weight | | | 300 | g | |

Typical Performance Curve



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