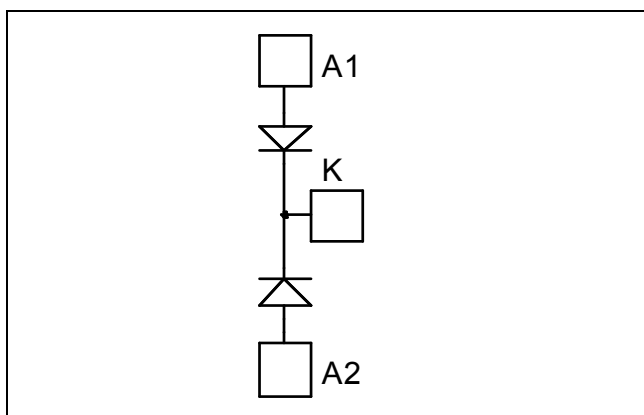


Dual Common Cathode diodes Power Module

$V_{RRM} = 1000V$
 $I_C = 400A @ T_c = 70^\circ C$



Application

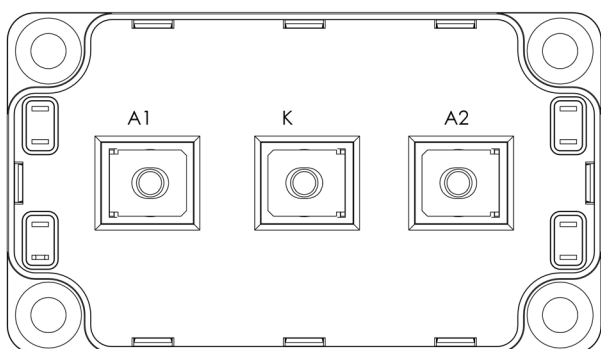
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers

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



Absolute maximum ratings

| <i>Symbol</i> | <i>Parameter</i> | | | | <i>Max ratings</i> | <i>Unit</i> |
|---------------------|---|------------------|-----------------------|------|--------------------|-------------|
| V _R | Maximum DC reverse Voltage | | | | 1000 | V |
| V _{RRM} | Maximum Peak Repetitive Reverse Voltage | | | | | |
| I _{F(AV)} | Maximum Average Forward Current | Duty cycle = 50% | T _C = 25°C | 500 | A | |
| | | | T _C = 70°C | 400 | | |
| I _{F(RMS)} | RMS Forward Current | Duty cycle = 50% | T _C = 45°C | 500 | | |
| I _{FSM} | Non-Repetitive Forward Surge Current | 8.3ms | T _C = 45°C | 3000 | | |

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

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

Electrical Characteristics

| Symbol | Characteristic | Test Conditions | | Min | Typ | Max | Unit |
|----------|---------------------------------|----------------------|---------------------------|-----|-----|------|---------------|
| V_F | Diode Forward Voltage | $I_F = 400\text{A}$ | | | 2.1 | 2.7 | V |
| | | $I_F = 600\text{A}$ | | | 2.3 | | |
| | | $I_F = 400\text{A}$ | $T_j = 125^\circ\text{C}$ | | 1.7 | | |
| I_{RM} | Maximum Reverse Leakage Current | $V_R = 1000\text{V}$ | $T_j = 25^\circ\text{C}$ | | | 250 | μA |
| | | | $T_j = 125^\circ\text{C}$ | | | 1000 | |
| C_T | Junction Capacitance | $V_R = 1000\text{V}$ | | | 480 | | pF |

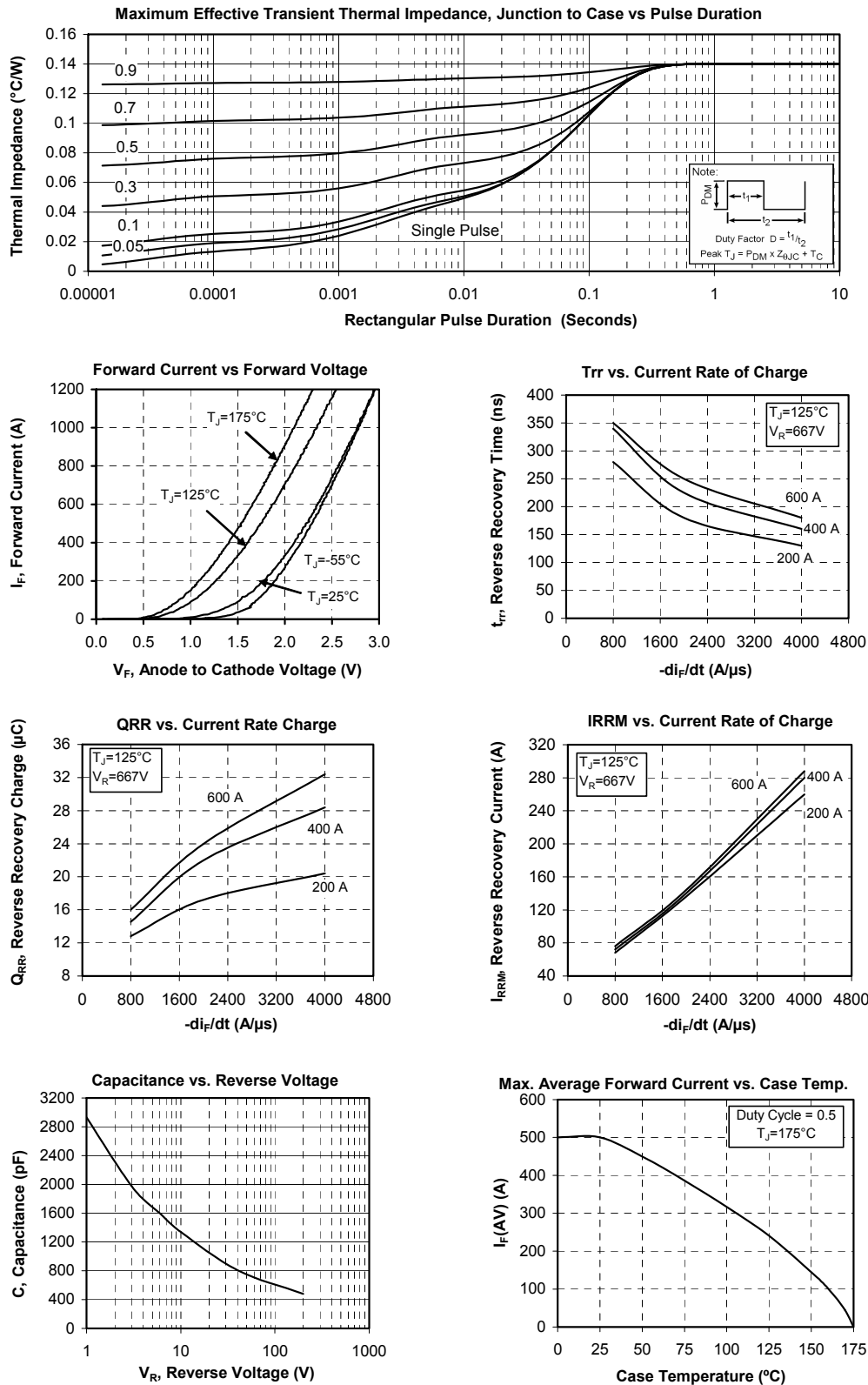
Dynamic Characteristics

| Symbol | Characteristic | Test Conditions | | Min | Typ | Max | Unit |
|------------------|--------------------------|--|------------------------|-----|------|-----|------|
| t _{rr} | Reverse Recovery Time | I _F =1A, V _R =30V di/dt = 400A/μs | T _j = 25°C | | 45 | | ns |
| t _{rr} | Reverse Recovery Time | I _F = 400A V _R = 667V di/dt = 800A/μs | T _j = 25°C | | 290 | | ns |
| | | | T _j = 125°C | | 340 | | |
| Q _{rr} | Reverse Recovery Charge | | T _j = 25°C | | 2.7 | | μC |
| | | | T _j = 125°C | | 14.6 | | |
| I _{RRM} | Reverse Recovery Current | | T _j = 25°C | | 24 | | A |
| | | T _j = 125°C | | 72 | | | |
| t _{rr} | Reverse Recovery Time | I _F = 400A V _R = 667V di/dt = 4000A/μs | T _j = 125°C | | 160 | | ns |
| Q _{rr} | Reverse Recovery Charge | | | | 28.4 | | μC |
| I _{RRM} | Reverse Recovery Current | | | | 280 | | A |

Thermal and package characteristics

| Symbol | Characteristic | Min | | Typ | Max | Unit |
|------------|--|---------------|----|-----|------|---------------------------|
| R_{thJC} | Junction to Case | | | | 0.14 | $^\circ\text{C}/\text{W}$ |
| V_{ISOL} | RMS Isolation Voltage, any terminal to case $t = 1\text{ min}$, 50/60Hz | 4000 | | | | V |
| T_J | Operating junction temperature range | -40 | | | 175 | $^\circ\text{C}$ |
| 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



[illegible]

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