

XI'AN IR-PERI



PRELIMINARY

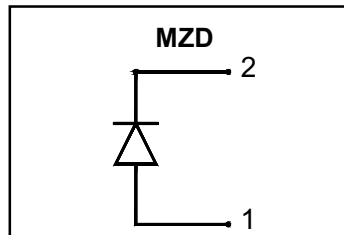
MZD450DD120S

Fast Recovery Epitaxial Diode DOUBLE INT -A -PAK

Soft-Fast™ Speed FRED

Features

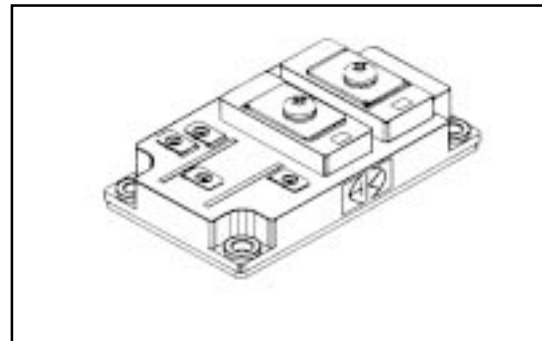
- International standard package
With DBC ceramic base plate
- Planar passivated chips
- Short recovery time
- Low switching losses
- Ultra-soft recovery behaviour
- Industry standard package
- UL recognition pending



V_{RRM} = 1200V
I_{FAVM} = 450A
t_{rr} = 550ns

Benefits

- Antiparallel diode for high frequency switching devices
- Increased operating efficiency
- Direct mounting to heatsink
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders
- Low voltage peaks for reduced protection circuits



Absolute Maximum Ratings

| Symbol | Test Conditions | Max. | Units |
|-------------------------------------|--|-------------|------------------|
| V _{RSM} & V _{RRM} | | 1200 | V |
| I _{FRMS} | T _C =75°C | 700 | A |
| I _{FAVM} | T _C =75°C; rectangular, d=0.5 | 500 | A |
| I _{FRM} | t _p <10μs; rep. rating, pulse width limited by T _{VJM} | 3000 | A |
| I _{FSM} | T _{VJ} =45°C; t=10ms (50 Hz),sine | 6000 | A |
| | t=8.3ms (60 Hz),sine | 7000 | A |
| | T _{VJ} =150°C; t=10ms (50 Hz),sine | 5500 | A |
| | t=8.3ms (60 Hz),sine | 6000 | A |
| I ² t | T _{VJ} =45°C; t=10ms (50 Hz),sine | 180000 | A ² s |
| | t=8.3ms (60 Hz),sine | 245000 | A ² s |
| | T _{VJ} =150°C; t=10ms (50 Hz),sine | 152000 | A ² s |
| | t=8.3ms (60 Hz),sine | 180000 | A ² s |
| V _{ISOL} | RMS Isolation Voltage, Any Terminal To Case, t=1 min | 2500 | V |
| P _D | T _C =25°C | 1800 | W |
| T _J | Operating Junction Temperature Range | -40 to +150 | °C |
| T _{STG} | Storage Temperature Range | -40 to +125 | |

Thermal / Mechanical Characteristics

| | Parameter | Typ. | Max. | Units |
|---------------|---|------|------|-------|
| R θ JS | Thermal Resistance, Junction-to- Sink DC | - | 0.06 | |
| R θ JC | Thermal Resistance, Junction-to- Case DC | - | 0.05 | °C/W |
| R θ CS | Thermal Resistance, Case-to- Sink- Module | 0.05 | - | |
| | Mouting Torque, Case-to-Heatsink | - | 4.0 | N.m |
| | Mouting Torque, Case-to-Terminal 1,2 & 3 | - | 3.0 | |
| | Weight of Module | 400 | - | g |

Electrical Characteristics (unless otherwise specified)

| | Parameter | Min. | Typ. | Max. | Units | Conditions |
|--|----------------------------------|------|------|------|-------|---|
| VRRM | Reverse Breakdown Voltage | 1200 | - | - | V | I _R =20mA |
| I _R | Diode Leaking Current | - | - | 20 | mA | T _{VJ} =25 °C V _R =VRRM |
| | | - | - | 5 | mA | T _{VJ} =25 °C V _R =0.8VRRM |
| | | - | - | 120 | mA | T _{VJ} =125 °C V _R =0.8VRRM |
| V _F | Diode Forward Voltage | - | - | 1.60 | V | I _F =500A; T _{VJ} =125 °C |
| | | - | - | 1.87 | V | T _{VJ} = 25 °C |
| | | - | - | 1.90 | V | I _F =650A; T _{VJ} =125 °C |
| | | - | - | 2.24 | V | T _{VJ} = 25 °C |
| V _{TO} | For power-loss calculations only | - | - | 1.18 | V | |
| r _T | | - | - | 1.15 | mΩ | |
| trr@T _{VJ} =100 °C | Diode Reverse Recovery Time | - | 550 | 600 | ns | I _F =650A |
| I _{RM} @T _{VJ} = 25 °C | Diode Peak Reverse Current | - | - | 110 | A | V _R =600V |
| I _{RM} @T _{VJ} =100 °C | Diode Peak Reverse Current | - | - | 165 | A | -di/dt=800A/μs |

Case Outline - Double int-a-pak

