

Pb Free Plating Product

MUR4020CR thru MUR40120CR



40.0 Ampere Heatsink Dual Doubler Polarity Ultra Fast Recovery Rectifiers

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| <p><b>Features</b></p> <ul style="list-style-type: none"> <li>ThinkiSemi latest&amp;matured process FRD/FRED</li> <li>Low forward voltage drop</li> <li>High current capability</li> <li>Low reverse leakage current</li> <li>High surge current capability</li> </ul> <p><b>Application</b></p> <ul style="list-style-type: none"> <li>Automotive Inverters and Solar Inverters</li> <li>Car Audio Amplifiers and Sound Device Systems</li> <li>Plating Power Supply, Motor Control, UPS and SMPS etc.</li> </ul> <p><b>Mechanical Data</b></p> <ul style="list-style-type: none"> <li>Case: Heatsink open metal TO-220AB/TO-220-3L package</li> <li>Epoxy: UL 94V-0 rate flame retardant</li> <li>Terminals: Solderable per MIL-STD-202 method 208</li> <li>Polarity: As marked on diode body</li> <li>Mounting position: Any</li> <li>Weight: 2.0 gram approximately</li> </ul> | <p>TO-220AB/TO-220-3L <span style="float: right;">Unit: inch(mm)</span></p> <p>① → ② Case<br/>③ → ④ Case</p> <p>① → ② Case<br/>③ → ④ Case</p> <p>① → ② Case<br/>③ → ④ Case</p> <p>① → ② Case<br/>③ → ④ Case</p> |
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**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| PARAMETER  | SYMBOL       | MUR4020CR   | MUR4030CR<br>MUR4040CR | MUR4060CR | MUR4080CR | MUR40100CR | MUR40120CR | UNIT     |
|--|--------------|-------------|------------------------|-----------|-----------|------------|------------|----------|
| Maximum Recurrent Peak Reverse Voltage   | VRRM         | 200         | 400                    | 600       | 800       | 1000       | 1200       | V        |
| Maximum RMS Voltage  | VRMS         | 140         | 280                    | 420       | 560       | 700        | 840        | V        |
| Maximum DC Blocking Voltage  | VDC          | 200         | 400                    | 600       | 800       | 1000       | 1200       | V        |
| Maximum Average Forward Rectified Current TC=125°C (Total Device 2x20.0A=40.0A)                                      | IF(AV)       | 40.0        |                        |           |           |            |            | A        |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg) | IFSM         | 400         |                        |           |           |            |            | A        |
| Maximum Instantaneous Forward Voltage @20.0A(Per Diode/Per Leg)  | VF (Typical) | 0.90-1.10   | 1.10-1.40              | 1.40-1.80 | 1.40-1.80 |            |            | V        |
| Maximum DC Reverse Current @TJ=25°C At Rated DC Blocking Voltage @TJ=125°C   | IR           | 5.0<br>500  |                        |           |           |            |            | µA<br>µA |
| Maximum Reverse Recovery Time (Note1)  | Trr          | 35-50       |                        |           | 50-75     |            |            | nS       |
| Typical Junction Capacitance (Note 2)  | CJ           | 200         |                        |           |           |            |            | pF       |
| Typical Thermal Resistance (Note 3)  | RθJC         | 1.5         |                        |           |           |            |            | °C/W     |
| Operating Junction and Storage Temperature Range   | TJ,TSTG      | -55 to +175 |                        |           |           |            |            | °C       |

Note:(1)Reverse recovery test conditions IF = 0.5A, IR = 1.0A, Irr = 0.25A.  
Note:(2)Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.  
Note:(3)Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

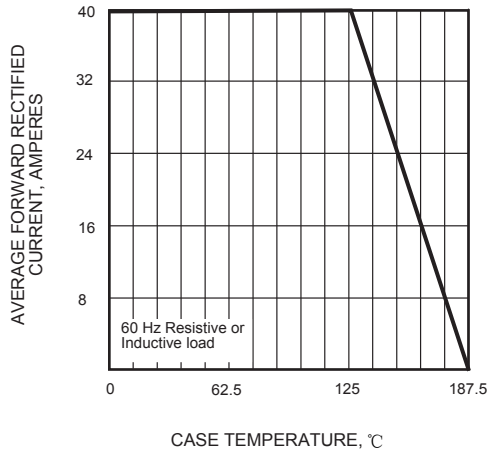


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

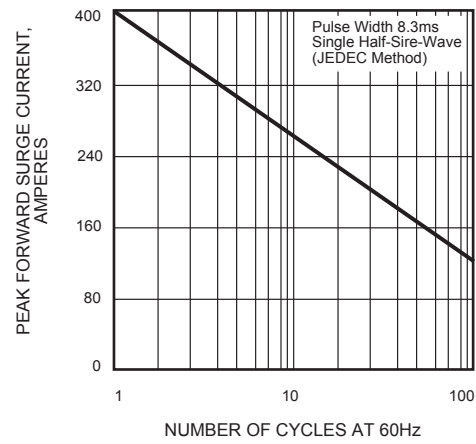


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

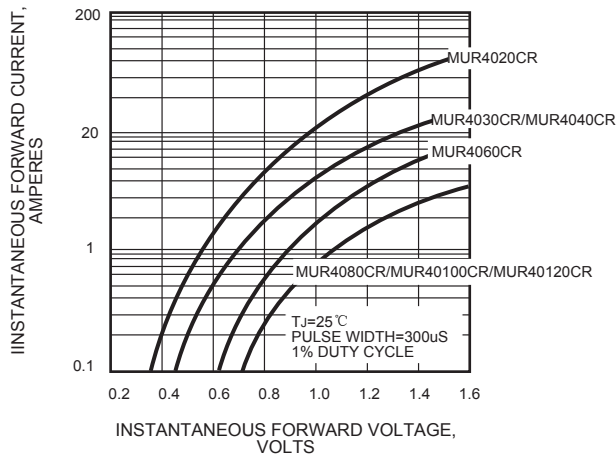


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

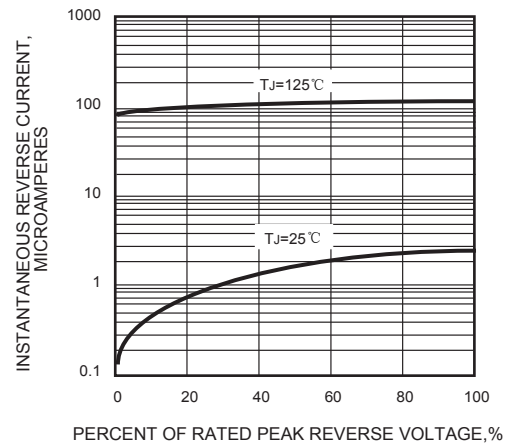


FIG.5 - TYPICAL JUNCTION CAPACITANCE

