

Pb Free Plating Product

## MURF3020CS thru MURF30120CS



30.0 Ampere Insulated Dual Series Connection Ultra Fast Recovery Rectifiers

| Features                                                                                                                                                                                                                                                           | ITO-220AB/TO-220F-3L Unit:inch(mm) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| ※ ThinkSemi latest&matured process FRD/FRED<br>※ Low forward voltage drop<br>※ High current capability<br>※ Low reverse leakage current<br>※ High surge current capability                                                                                         |                                    |
| Application                                                                                                                                                                                                                                                        |                                    |
| ※ Automotive Inverters and Solar Inverters<br>※ Car Audio Amplifiers and Sound Device Systems<br>※ Plating Power Supply, Motor Control, UPS and SMPS etc.                                                                                                          |                                    |
| Mechanical Data                                                                                                                                                                                                                                                    |                                    |
| ※ Case: Isolated fully plastic ITO-220AB/TO-220F-3L package<br>※ Epoxy: UL 94V-0 rate flame retardant<br>※ Terminals: Solderable per MIL-STD-202 method 208<br>※ Polarity: As marked on diode body<br>※ Mounting position: Any<br>※ Weight: 2.0 gram approximately |                                    |

## 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          | MURF3020CS  | MURF3030CS<br>MURF3040CS | MURF3060CS | MURF3080CS | MURF30100CS | MURF30120CS | 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℃<br>(Total Device 2x15.0A=30.0A)                                    | IF(AV)          | 30.0        |                          |            |            |             |             | A        |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg) | IFSM            | 300         |                          |            |            |             |             | A        |
| Maximum Instantaneous Forward Voltage @15.0A(Per Diode/Per Leg)                                                      | VF<br>(Typical) | 0.90-1.10   | 1.10-1.40                | 1.40-1.80  | 1.40-1.80  |             |             | V        |
| Maximum DC Reverse Current @TJ=25℃<br>At Rated DC Blocking Voltage @TJ=125℃                                          | 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              | 150         |                          |            |            |             |             | pF       |
| Typical Thermal Resistance (Note 3)                                                                                  | RθJC            | 3.0         |                          |            |            |             |             | ℃/W      |
| Operating Junction and Storage Temperature Range                                                                     | TJ,TSTG         | -55 to +175 |                          |            |            |             |             | ℃        |

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

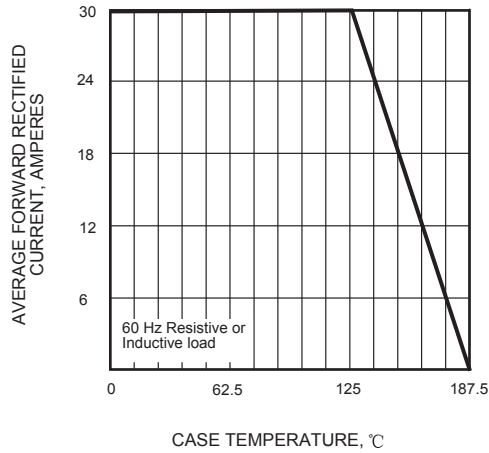


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

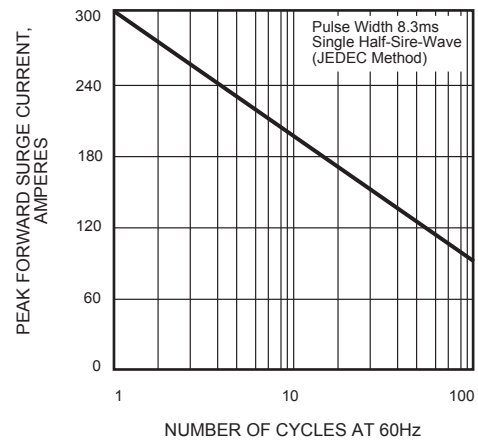


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

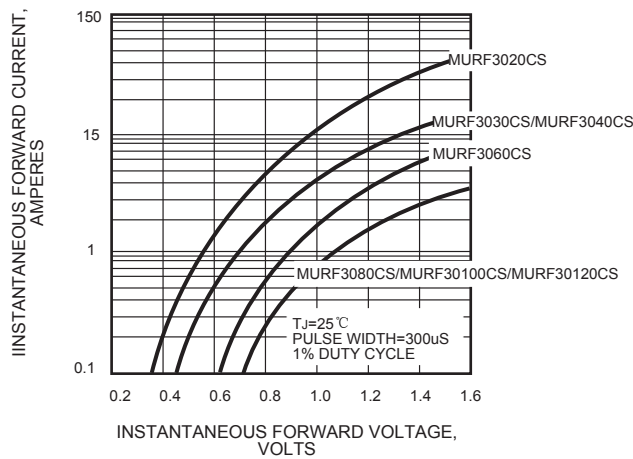


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

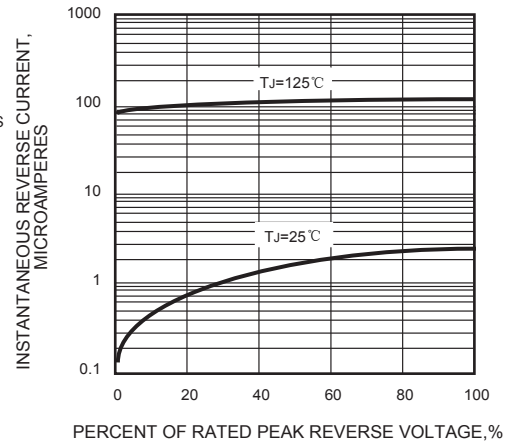


FIG.5 - TYPICAL JUNCTION CAPACITANCE

