

Pb Free Plating Product

## HER1002CR thru HER1012CR



## 10.0 Ampere Heatsink Dual Doubler Polarity High Efficiency Rectifiers

| Features                                                                                                                                                                                                                                                      | TO-220AB/TO-220-3L 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: Heatsink open metal TO-220AB/TO-220-3L 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          | HER1002CR   | HER1003CR<br>HER1004CR | HER1006CR | HER1008CR | HER1010CR | HER1012CR | 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 2x5.0A=10.0A)                                     | IF(AV)          | 10.0        |                        |           |           |           |           | A        |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg) | IFSM            | 125         |                        |           |           |           |           | A        |
| Maximum Instantaneous Forward Voltage @5.0A(Per Diode/Per Leg)                                                       | VF<br>(Typical) | 0.85-1.00   | 1.00-1.30              | 1.30-1.70 | 1.30-1.70 |           |           | V        |
| Maximum DC Reverse Current @TJ=25℃<br>At Rated DC Blocking Voltage @TJ=125℃                                          | IR              | 1.0<br>100  |                        |           |           |           |           | μA<br>μA |
| Maximum Reverse Recovery Time (Note1)                                                                                | Trr             | 35-50       |                        |           | 50-75     |           |           | nS       |
| Typical Junction Capacitance (Note 2)                                                                                | CJ              | 50          |                        |           |           |           |           | pF       |
| Typical Thermal Resistance (Note 3)                                                                                  | RθJC            | 1.5         |                        |           |           |           |           | ℃/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

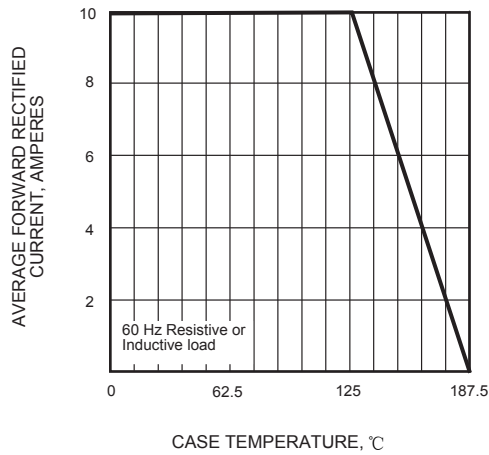


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

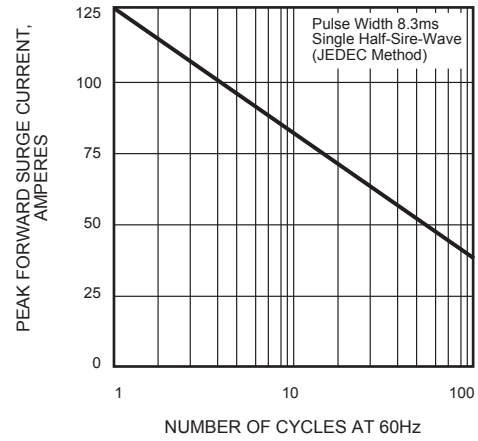


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

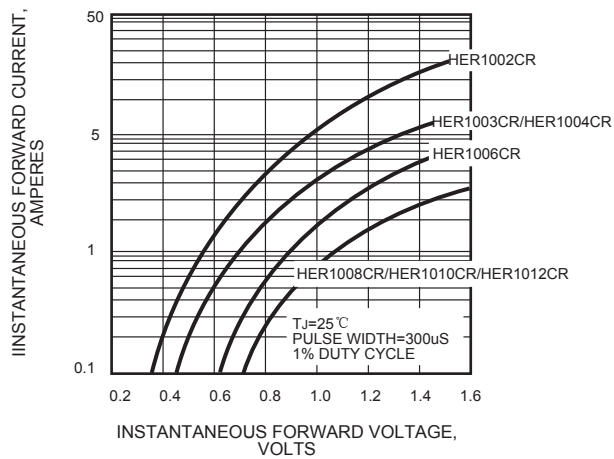


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

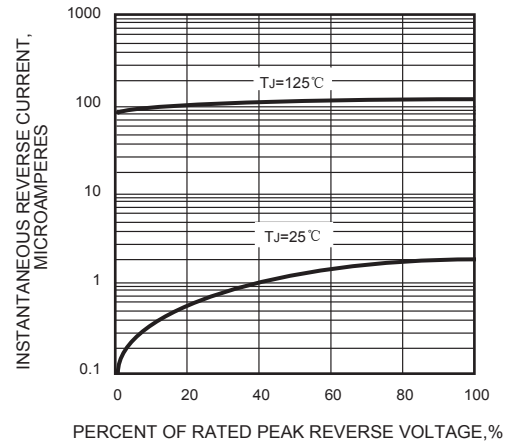


FIG.5 - TYPICAL JUNCTION CAPACITANCE

