

# 1N3889 THRU 1N3893

## 12 AMP

### FAST RECOVERY RECTIFIER

## 50-400 VOLTS



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#### CASE STYLE



#### FEATURES

- FAST RECOVERY 100 NSEC MAX.
  - PIV TO 400 VOLTS
  - LOW REVERSE LEAKAGE
  - HERMETICALLY SEALED
  - SINGLE CHIP CONSTRUCTION
  - HIGH SURGE RATING 200 AMPS
  - LOW THERMAL RESISTANCE
- FOR REVERSE POLARITY ADD "R" TO PART NUMBER

#### MAXIMUM RATINGS

| Rating                                                                                                                      | Symbol                  | Value       | Unit       |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------|------------|
| Peak Repetitive Reverse Voltage Per Leg<br>and<br>DC Blocking Voltage Per Leg                                               | $V_{RM} (rep)$<br>$V_R$ |             | Volts      |
| 1N3889                                                                                                                      |                         | 50          |            |
| 1N3890                                                                                                                      |                         | 100         |            |
| 1N3891                                                                                                                      |                         | 200         |            |
| 1N3892                                                                                                                      |                         | 300         |            |
| 1N3893                                                                                                                      |                         | 400         |            |
| RMS Reverse Voltage Per Leg                                                                                                 | $V_r$                   |             | Volts      |
| 1N3889                                                                                                                      |                         | 35          |            |
| 1N3890                                                                                                                      |                         | 70          |            |
| 1N3891                                                                                                                      |                         | 140         |            |
| 1N3892                                                                                                                      |                         | 210         |            |
| 1N3893                                                                                                                      |                         | 280         |            |
| Half Wave Rectified Forward Current, Averaged Over Full Cycle<br>(Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ C$ )     | $I_O$                   | 12          | Amps       |
| Peak Repetitive Forward Current<br>( $T_C = 55^\circ C$ , 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses) | $I_{FM} (rep)$          | 60          | Amps       |
| Peak Surge Current<br>( $T_C = 55^\circ C$ , Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)                  | $I_{FM} (surge)$        | 200         | Amps       |
| Operating and Storage Temperature                                                                                           | $T_J, T_{stg}$          | -65 to +175 | $^\circ C$ |

#### THERMAL CHARACTERISTICS

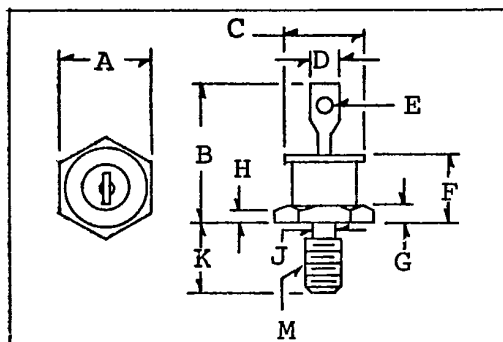
| Characteristics                      | Symbol          | Max | Unit         |
|--------------------------------------|-----------------|-----|--------------|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 2   | $^\circ C/W$ |

| Characteristics                                                                                                                                                                           | Symbol      | Value      | Unit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle, Per Leg<br>( $I_O$ (Max), 60 Hz. Square Wave, $T_C = 55^\circ\text{C}$ )                                                   | $V_{F(AV)}$ | ---        | Vdc  |
| Max Instantaneous Forward Drop Per Leg<br>( $I_F = 12$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)<br>( $I_F = 38$ Adc, $T_C = 150^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse) | $V_F$       | 1.4<br>1.5 | Vdc  |
| Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle, Per Leg<br>(Rated $V_R$ , 60Hz, Square Wave, $T_C = 100^\circ\text{C}$ )                                                | $I_{R(AV)}$ | 3          | mA   |
| Max Reverse Leakage Current Per Leg<br>(Rated $V_R$ , $T_C = 25^\circ\text{C}$ )                                                                                                          | $I_R$       | .025       | mA   |
| Max Junction Capacitance Per Leg.<br>( $V_R = 10$ V, $T_C = 25^\circ\text{C}$ )                                                                                                           | $C_J$       | 100        | pf   |

## REVERSE RECOVERY CHARACTERISTICS

| Characteristics                                                | Symbol   | Min | Typ | Max | Unit |
|----------------------------------------------------------------|----------|-----|-----|-----|------|
| Reverse Recovery Time<br>( $I_F = 1.0$ Amp to $V_R = 30$ Vdc.) | $t_{rr}$ | --- | 100 | 200 | ns   |

## PHYSICAL DIMENSIONS



### KEY TO DIMENSIONS:

(Inches)

- A = .424 - .437
- B = .800 MAX.
- C = .424 MAX.
- D = .250 MAX.
- E = .060 MIN.
- F = .405 MAX.
- G = .075 - .175
- H = .060 MIN.
- J = .163 - .189
- K = .422 - .453
- M = 10-32 UNF-2A

## TYPICAL OPERATING CURVES

