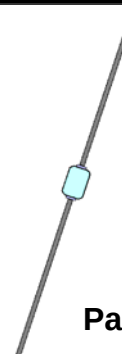


DESCRIPTION

This "fast recovery" rectifier diode series is military qualified to MIL-PRF-19500/424 and is ideal for high-reliability applications where a failure cannot be tolerated. These industry-recognized 3.0 Amp rated rectifiers for working peak reverse voltages from 100 to 600 volts are hermetically sealed with voidless-glass construction using an internal "Category I" metallurgical bond. These devices are also available in surface mount MELF package configurations by adding a "US" suffix. Microsemi also offers numerous other rectifier products to meet higher and lower current ratings with various recovery time speed requirements including fast and ultrafast device types in both through-hole and surface mount packages.

APPEARANCE

Package E

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

FEATURES

- Popular JEDEC registered 1N5186 to 1N5190 series
- Voidless hermetically sealed glass package
- Triple-Layer Passivation
- Internal "Category I" Metallurgical bonds
- Working Peak Reverse Voltage 100 to 600 Volts.
- JAN, JANTX, and JANTXV available per MIL-PRF-19500/424
- Surface mount equivalents also available in a square end-cap MELF configuration with "US" suffix

APPLICATIONS / BENEFITS

- Fast recovery 3 Amp rectifiers 100 to 600 V
- Military and other high-reliability applications
- General rectifier applications including bridges, half-bridges, catch diodes, etc.
- High forward surge current capability
- Extremely robust construction
- Low thermal resistance
- Controlled avalanche with peak reverse power capability
- Inherently radiation hard as described in Microsemi MicroNote 050

MAXIMUM RATINGS

- Junction & Storage Temperature: -65°C to +175°C
- Thermal Resistance: 20°C/W junction to lead at 3/8 inch (10 mm) lead length from body
- Thermal Impedance: 1.5°C/W @ 10 ms heating time
- Average Rectified Forward Current (I_O): 3.0 Amps @ $T_A = 25^\circ\text{C}$ and 0.700 Amps at $T_A = 150^\circ\text{C}$
- Forward Surge Current: 80 Amps @ 8.3 ms half-sine
- Solder Temperatures: 260°C for 10 s (maximum)

MECHANICAL AND PACKAGING

- CASE: Hermetically sealed voidless hard glass with Tungsten slugs
- TERMINATIONS: Axial-leads are Tin/Lead (Sn/Pb) over Copper
- MARKING: Body paint and part number, etc.
- POLARITY: Cathode band
- TAPE & REEL option: Standard per EIA-296
- WEIGHT: 750 mg
- See package dimensions on last page

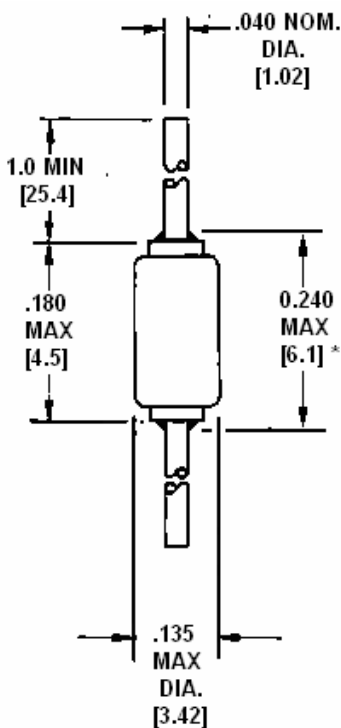
ELECTRICAL CHARACTERISTICS

TYPE	WORKING PEAK REVERSE VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	FORWARD VOLTAGE		MAXIMUM REVERSE CURRENT		MAXIMUM REVERSE RECOVERY TIME	AVERAGE RECTIFIED CURRENT AMPS	
	V_{RWM}	$V_{BR} @ 50\mu\text{A}$	$V_F @ 9\text{A (pulsed)}$		$I_R @ V_{RWM}$		t_{rr}	I_O	
	VOLTS	VOLTS	MIN VOLTS	MAX VOLTS	25°C μA	100°C μA	ns	25°C AMPS	150°C AMPS
1N5186	100V	120V	0.9V	1.5V	2.0	100	150	3.0	0.7
1N5187	200V	240V					200	3.0	0.7
1N5188	400V	480V					250	3.0	0.7
1N5189	500V	550V					300	3.0	0.7
1N5190	600V	660V					400	3.0	0.7

SYMBOLS & DEFINITIONS

Symbol	Definition
V_{BR}	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current.
V_{RWM}	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range.
V_F	Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.
I_R	Maximum Leakage Current: The maximum leakage current that will flow at the specified voltage and temperature.
t_{rr}	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.

PACKAGE DIMENSIONS



Lead Tolerance = + .002 -.003 in

*Includes sections of the lead or fillet over which the lead diameter is uncontrolled.