

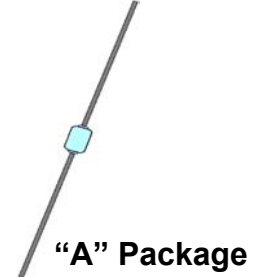
**VOIDLESS-HERMETICALLY SEALED
FAST RECOVERY GLASS RECTIFIERS**



DESCRIPTION

This "fast recovery" rectifier diode series is military qualified to MIL-PRF-19500/359 and is ideal for high-reliability applications where a failure cannot be tolerated. These industry-recognized 1.0 Amp rated rectifiers for working peak reverse voltages from 200 to 1000 volts are hermetically sealed with voidless-glass construction using an internal "Category I" metallurgical bond. These devices are similar in ratings to the 1N5615 thru 1N5623 series where surface mount MELF package configurations are also available by adding a "US" suffix (see separate data sheet for 1N5615US thru 1N5623US). 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



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

FEATURES

- Popular JEDEC registered 1N4942 to 1N4948 series
- Voidless hermetically sealed glass package
- Triple-Layer Passivation
- Internal "Category I" Metallurgical bonds
- Working Peak Reverse Voltage 200 to 1000 Volts.
- JAN, JANTX, and JANTXV available per MIL-PRF-19500/359 (for JANS, see 1N5615 thru 1N5623)
- Surface mount equivalents also available in a square end-cap MELF configuration with "US" suffix (see separate data sheet for 1N5615US thru 1N5623US)

APPLICATIONS / BENEFITS

- Fast recovery 1 Amp rectifiers 200 to 1000 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: 38°C/W junction to lead at 3/8 inch (10 mm) lead length from body
- Thermal Impedance: 4.5°C/W @ 10 ms heating time
- Average Rectified Forward Current (I_O): 1.0 Amps @ $T_A = 55^\circ\text{C}$ and 0.750 Amps at $T_A = 100^\circ\text{C}$
- Forward Surge Current: 15 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 copper with Tin/Lead (Sn/Pb) finish
- MARKING: Body paint and part number, etc.
- POLARITY: Cathode band
- TAPE & REEL option: Standard per EIA-296
- WEIGHT: 340 mg
- See package dimensions on last page

ELECTRICAL CHARACTERISTICS

TYPE	WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	MINIMUM BREAKDOWN VOLTAGE $B_V @ 50\mu\text{A}$ VOLTS	AVERAGE RECTIFIED CURRENT I_O AMPS		MAXIMUM FORWARD VOLTAGE $V_F @ 1\text{A}$ VOLTS	MAXIMUM REVERSE CURRENT $I_R @ V_{RWM}$ μA		Maximum CAPACITANCE $C @ -12\text{V}$ pF	MAXIMUM SURGE CURRENT (NOTE 1) I_{FSM} AMPS	MAXIMUM REVERSE RECOVERY (NOTE 2) t_{rr} ns
			55°C	100°C		25°C	150°C			
			JAN1N4942	200		220	1.00			
JAN1N4944	400	440	1.00	.750	1.3	1.0	200	35	15	150
JAN1N4946	600	660	1.00	.750	1.3	1.0	200	25	15	250
JAN1N4947	800	880	1.00	.750	1.3	1.0	200	20	15	250
JAN1N4948	1000	1100	1.00	.750	1.3	1.0	200	15	15	500

NOTE 1: $T_A = 100^\circ\text{C}$, 8.3 ms surges

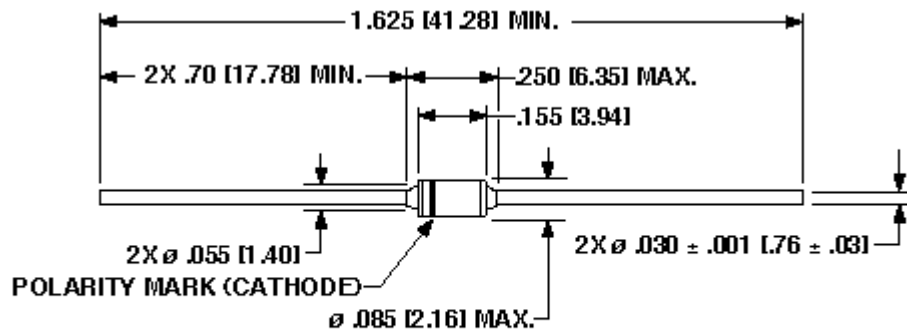
NOTE 2: $I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(REC)} = .250\text{A}$

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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.
C	Capacitance: The capacitance of the TVS as defined @ 12 volts at a frequency of 1 MHz and stated in picofarads.
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 recovery decay point after a peak reverse current is reached.

PACKAGE DIMENSIONS



NOTE: DIMENSIONS IN INCHES [mm]

NOTE: Lead diameter tolerance = +0.003/-0.004 inches