6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http://www.microsemi.com

Gort Road Business Park, Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044 Fax: +353 (0) 65 6822298

TECHNICAL DATA SHEET

VOIDLESS-HERMETICALLY-SEALED STANDARD RECOVERY GLASS

Qualified per MIL-PRF-19500/286

DEVICES

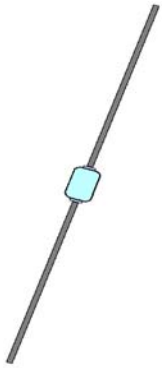
1N4245 thru 1N4249

LEVELS

JAN
JANTX
JANTXV

DESCRIPTION

"A" Package



This "standard recovery" rectifier diode series is military qualified to MIL-PRF-19500/286 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 1N5614 thru 1N5622 series where surface mount MELF package configurations are available by adding a "US" suffix (see separate data sheet for 1N5614US thru 1N5622US). 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.

IMPORTANT: For the most current data, consult *MICROSEMI's* website:

http://www.microsemi.com

FEATURES

- Popular JEDEC registered 1N4245 to 1N4249 series
- Voidless hermetically sealed glass package
- Internal "*Category I*" Metallurgical bonds
- Working Peak Reverse Voltage 200 to 1000 Volts.
- JAN, JANTX, and JANTXV available per MIL-PRF-19500/286 (for JANS, see 1N5614-5622 series)
- Surface mount equivalents also available in a square end-cap MELF configuration with "US" suffix (see separate data sheet for 1N5614US thru 1N5622US)

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APPLICATIONS / BENEFITS

- Standard 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: 42°C/W junction to lead at 3/8 inch (10 mm) lead length from body
- Thermal Impedance: 4.5°C/W @ 10 ms
- Average Rectified Forward Current (I_O): 1.0 Amps @ T_A = 55ºC
- Forward Surge Current: 25 Amps @ 8.3 ms half-sine
- Solder Temperatures: 260ºC 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

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ELECTRICAL CHARACTERISTICS @ 30oC Case Temperature

TYPE	WORKING PEAK REVERSE VOLTAGE V_{RWM}	MINIMUM BREAKDOWN VOLTAGE V_{BR} @ 100µA	AVERAGE RECTIFIED CURRENT I_O @ T_A = 55°C	MAXIMUM FORWARD VOLTAGE V_F @ 3A	MAXIMUM REVERSE CURRENT I_R @ V_{RWM}		MAXIMUM SURGE CURRENT (NOTE 1) I_{FSM}	MAXIMUM REVERSE RECOVERY (NOTE 2) t_{rr}
	VOLTS	VOLTS	AMPS	VOLTS	µA		AMPS	µSec.
			55°C		25°C	150°C		
1N4245	200	240	1.00	1.3	1.0	150	25	5.0
1N4246	400	480	1.00	1.3	1.0	150	25	5.0
1N4247	600	720	1.00	1.3	1.0	150	25	5.0
1N4248	800	960	1.00	1.3	1.0	150	25	5.0
1N4249	1000	1150	1.00	1.3	1.0	150	25	5.0

NOTE 1: I_O = 1A, 8 ms surge
NOTE 2: I_F = 0.5A, I_{RM} = 1A, $I_{R(REC)}$ = .250A

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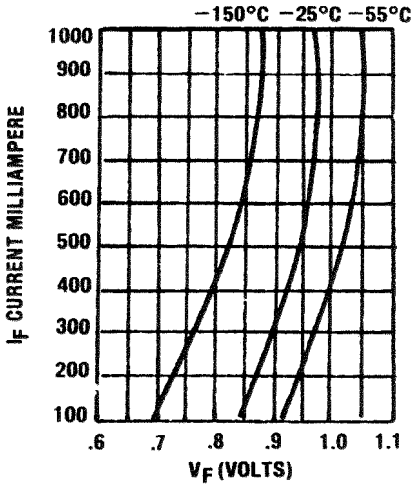
GRAPHS

FIGURE 1
TYPICAL FORWARD CONDUCTANCE CURVE



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 recovery decay point after a peak reverse current is reached.