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 RECTIFIERS

Qualified per MIL-PRF-19500/228

DEVICES

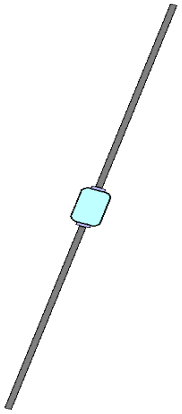
1N3611 thru 1N3613
***1N3614 and 1N3957**

LEVELS

JAN, JANTX
*** JAN, TX, TXV**

DESCRIPTION

"A" Package



This "standard recovery" rectifier diode series is military qualified to MIL-PRF-19500/228 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 1N3611 thru 1N3614 and 1N3597 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 (also see 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: 38°C/W junction to lead at 3/8 inch (10 mm) lead length from body
- Average Rectified Forward Current (I_O): 1.0 Amps @ T_A = 100ºC and 0.30 Amps at 150ºC
- Forward Surge Current: 30 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: 500 mg (approx)
- 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 (NOTE 2) I_O		MAXIMUM FORWARD VOLTAGE V_F @ 1 A (PULSED)	MAXIMUM REVERSE CURRENT I_R @ V_{RWM}		MAXIMUM SURGE CURRENT (NOTE1) I_{FSM}
	VOLTS	VOLTS	AMPS		VOLTS	µA		AMPS
			100°C	150°C		25°C	150°C	
JAN1N3611	200	240	1.0	0.30	1.1	1.0	300	30
JAN1N3612	400	480	1.0	0.30	1.1	1.0	300	30
JAN1N3613	600	720	1.0	0.30	1.1	1.0	300	30
JAN1N3614	800	920	1.0	0.30	1.1	1.0	300	30
JAN1N3957	1000	1150	1.0	0.30	1.1	1.0	300	30

NOTE 1: T_A = 25°C, I_O = 1.0 A, 10 surges of 8.3 ms @ 1 minute intervals
NOTE 2: Linearly derate at 13.3 mA/°C between T_A=100°C and 175°C

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.

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GRAPHS

FIGURE 1
TYPICAL FORWARD CONDUCTANCE CURVE

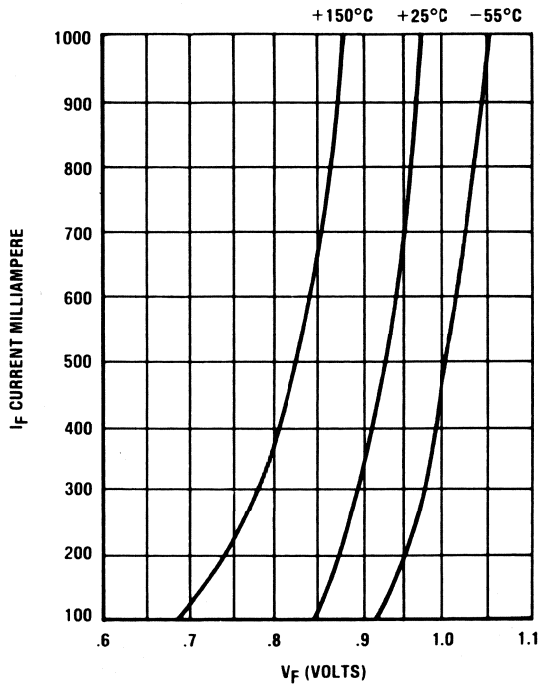

FIGURE 2
ALLOWABLE PEAK SURGE vs DURATION

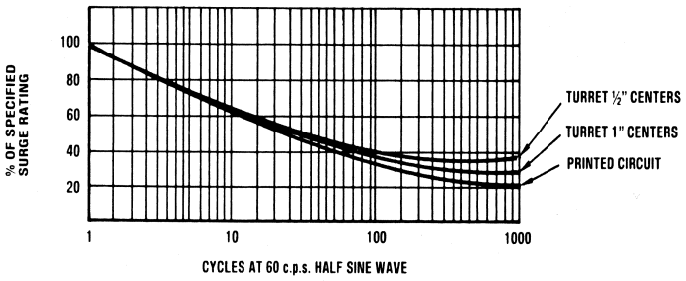

FIGURE 3
SURGE DURATION vs PULSE CURRENT
Square Pulse Current vs Duration for Non-Repetitive Pulse