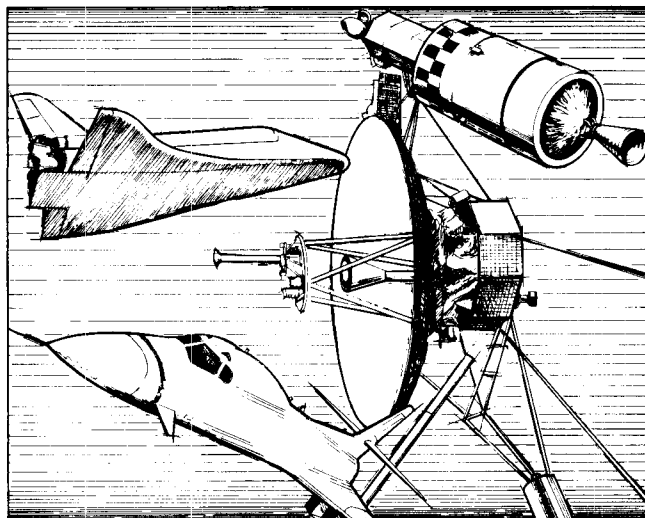


Features

HIGH BREAKDOWN VOLTAGE
PICO-SECOND SWITCHING SPEED
LOW TURN-ON

Description/Applications

The JAN Series 1N5711 is an epitaxial, planar passivated Schottky Barrier Diode designed to have pico-second switching speed. These devices are well suited for high level detecting, mixing, switching, gating and converting, video detecting, frequency discriminating, sampling, and wave shaping applications that require the high reliability of a JAN/JANTX device.



Maximum Ratings at $T_{CASE} = 25^{\circ}C$

Operating and Storage Temperature

Range $-65^{\circ}C$ to $200^{\circ}C$

Operation of these devices within the recommended temperature limits will assure a device Mean Time to Failure (MTTF) of approximately 1×10^7 hours.

Reverse Voltage (Working) 50 V (peak)

Power Dissipation 250 mW

Derate at 1.43 mW/ $^{\circ}C$ for $T_{CASE} = 25^{\circ}C$ to $200^{\circ}C$; assumes an infinite heat sink.

Electrical Specifications at $T_A = 25^{\circ}C$ (Unless Otherwise Specified)

(Per Table I, Group A Testing of MIL-S-19500/444)

Specification	Symbol	Min.	Max.	Units	Test Conditions
Breakdown Voltage	V_{BR}	70	—	V	$I_R = 10 \mu A$
Forward Voltage	V_{F1}	—	.41	V	$I_{F1} = 1 mA$
Forward Voltage	V_{F2}	—	1.0	V	$I_{F2} = 15 mA$
Reverse Leakage Current	I_R	—	200	nA	$V_R = 50 V$
Reverse Leakage Current	I_R	—	200	μA	$V_R = 50 V, T_A = +150^{\circ}C$
Capacitance	$C_{T(o)}$	—	2.0	pF	$V_R = 0 V$ and $f = 1 MHz$
Effective Minority Carrier Lifetime	τ	—	100	pS	$I_F = 5 mA$ Krakauer Method [Note 1]

Note 1: Per DESC drawing C-68001

JAN 1N5711: Samples of each lot are subjected to Group A inspection for parameters listed in Table I, and to Group B and Group C tests listed below. All tests are to the conditions and limits specified by MIL-S-19500/444.

JANTX 1N5711: Devices undergo 100% screening tests as listed below to the conditions and limits specified by MIL-S-19500/444. A sample of the JANTX lot is then subjected to Group A, Group B, and Group C tests as for the JAN 1N5711 above.

JANTXV 1N5711: Devices are subject to 100% visual inspection in accordance with MIL-S-19500/444 prior to being subjected to TX screening.

Group B Sample Acceptance Tests **	Method MIL-STD-750
Physical Dimensions	2066
Solderability	2026
Temperature Cycling	1051C
Thermal Shock (Strain)	1056A
Terminal Strength: Tension	2036A
Gross Leak Test	1071E
Moisture Resistance	1021
Mechanical Shock	2016
Vibration, Variable Frequency	2056
Constant Acceleration	2006
Terminal Strength: Lead Fatigue	2036E
Temperature Storage (200°C, 1K hrs.)	1031
Operating Life $I_o = 33\text{mA}$, $V_r = 50\text{V}$ [pk] ($f = 60\text{Hz}$, $T_A = 25^\circ\text{C}$, $t = 1\text{K hrs.}$)	1026

Group C Sample Acceptance Tests **	Method MIL-STD-750
Low Temp. Operation (-65°C)	
Forward Voltage	4011
Breakdown Voltage	4021
Salt Atmosphere	1041
Resistance to Solvents	*
Temperature Cycling	1051C
TX Screening (100%)	
High Temp. Storage (200°C, 48 hrs.)	1032
Thermal Shock	1051C
Constant Acceleration	2006
Fine Leak	1071G or H
Gross Leak	1071E
Burn-In $I_o = 33\text{mA}$, $V = 50\text{V}$ [pk] ($T_A = 25^\circ\text{C}$, $f = 60\text{Hz}$, $t = 96\text{hrs.}$)	
Evaluation of Drift (I_R , V_F)	

*MIL-STD-202, Method 215

** Endpoint measurements and examinations per MIL-S-19500/444.

Typical Parameters

