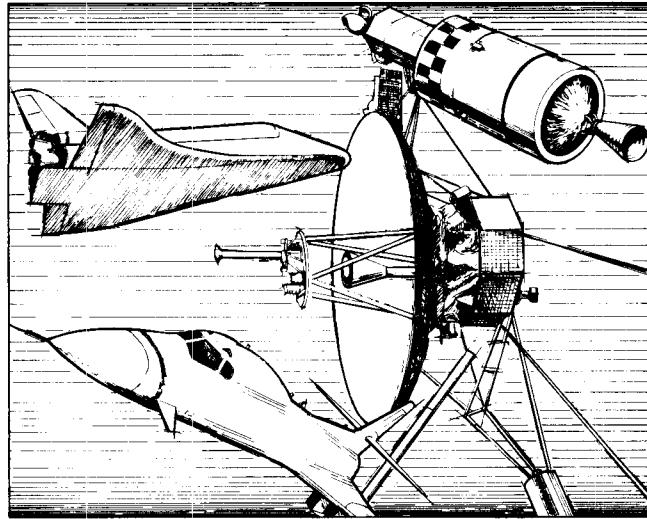


## Features

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 $T_{CASE} = 25^\circ\text{C}$

Operating and Storage Temperature

Range ..... -65°C to 200°C

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

Reverse Voltage (Working) ..... 50 V (peak)

Power Dissipation ..... 250 mW

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

## Electrical Specifications at $T_A = 25^\circ\text{C}$ (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	$I_R = 10\mu\text{A}$
Forward Voltage	$V_{F1}$	—	.41	V	$I_{F1} = 1\text{mA}$
Forward Voltage	$V_{F2}$	—	1.0	V	$I_{F2} = 15\text{mA}$
Reverse Leakage Current	$I_R$	—	200	nA	$V_R = 50\text{V}$
Reverse Leakage Current	$I_R$	—	200	$\mu\text{A}$	$V_R = 50\text{V}, T_A = +150^\circ\text{C}$
Capacitance	$C_{T(\text{a})}$	—	2.0	pF	$V_R = 0\text{V}$ and $f = 1\text{MHz}$
Effective Minority Carrier Lifetime	$\tau$	—	100	pS	$I_F = 5\text{mA}$ 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.

<b>Group B Sample Acceptance Tests **</b>		<b>Method MIL-STD-750</b>	<b>Group C Sample Acceptance Tests **</b>		<b>Method MIL-STD-750</b>
Physical Dimensions		2066	Low Temp. Operation (-65°C)		
Solderability		2026	Forward Voltage	4011	
Temperature Cycling		1051C	Breakdown Voltage	4021	
Thermal Shock (Strain)		1056A	Salt Atmosphere	1041	
Terminal Strength: Tension		2036A	Resistance to Solvents	*	
Gross Leak Test		1071E	Temperature Cycling	1051C	
Moisture Resistance		1021	TX Screening (100%)		
Mechanical Shock		2016	High Temp. Storage (200°C, 48 hrs.)	1032	
Vibration, Variable Frequency		2056	Thermal Shock	1051C	
Constant Acceleration		2006	Constant Acceleration	2006	
Terminal Strength: Lead Fatigue		2036E	Fine Leak	1071G or H	
Temperature Storage (200°C, 1K hrs.)		1031	Gross Leak	1071E	
Operating Life $I_o = 33\text{mA}_{\text{dc}}$ , $V_r = 50\text{V}$ [pk] ( $f = 60\text{Hz}$ , $T_A = 25^\circ\text{C}$ , $t = 1\text{K hrs.}$ )		1026	Burn-In $I_o = 33\text{mA}_{\text{dc}}$ , $V = 50\text{V}$ [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

