

**2N4261JAN, JTX, JTXV**  
Processed per MIL-S-19500/511  
**PNP Silicon**  
**Small-Signal Transistor**

... designed for general-purpose switching applications.

CRYSTALONCS  
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MAXIMUM RATINGS			
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CE0}$	15	Vdc
Collector-Base Voltage	$V_{CBO}$	15	Vdc
Emitter-Base Voltage	$V_{EBO}$	4.5	Vdc
Collector Current	$I_C$	30	mA dc
Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_T$	200 1.14	mW mW/°C
Storage and Operating Temperature Range	$T_{stg}, T_{op}$	-65 to 200	°C



ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage <sup>(1)</sup> ( $I_C = 10\text{ mA dc}$ )	$V_{(BR)CEO}$	15	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 10\text{ }\mu\text{A dc}$ )	$V_{(BR)CBO}$	15	—	Vdc
Collector Cutoff Current ( $V_{CE} = 10\text{ Vdc}, V_{EB} = 0.4\text{ Vdc}$ ) ( $V_{CE} = 10\text{ Vdc}, V_{BE}(\text{off}) = 2.0\text{ Vdc}$ ) ( $V_{CE} = 10\text{ Vdc}, V_{EB}(\text{off}) = 2.0\text{ Vdc}, T_A = 150^\circ\text{C}$ )	$I_{CEX}$	—	50 5.0 5.0	nA dc nA dc $\mu\text{A dc}$
Base-Emitter Cutoff Current ( $V_{CE} = 10\text{ Vdc}, V_{EB}(\text{off}) = 2.0\text{ Vdc}$ )	$I_{BEX}$	—	5.0	nA dc
Emitter Cutoff Current ( $V_{EB} = 4.5\text{ Vdc}$ )	$I_{EBO}$	—	10	$\mu\text{A dc}$

ELECTRICAL CHARACTERISTICS — continued ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)				
Characteristic	Symbol	Min	Max	Unit
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 1.0\text{ mAdc}$ , $V_{CE} = 1.0\text{ Vdc}$ ) ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 1.0\text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 30\text{ mAdc}$ , $V_{CE} = 1.0\text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 1.0\text{ Vdc}$ , $T_A = -65^\circ\text{C}$ ) <sup>(1)</sup>	$h_{FE}$	25 30 20 15	— 150 — —	—
Base-Emitter Voltage ( $V_{CE} = 1.0\text{ Vdc}$ , $I_C = 1.0\text{ mAdc}$ ) ( $V_{CE} = 1.0\text{ Vdc}$ , $I_C = 10\text{ mAdc}$ )	$V_{BE}$	— —	0.8 1.0	Vdc
Collector-Emitter Saturation Voltage ( $I_C = 1.0\text{ mAdc}$ , $I_B = 0.1\text{ mAdc}$ ) ( $I_C = 10\text{ mAdc}$ , $I_B = 1.0\text{ mAdc}$ ) <sup>(1)</sup>	$V_{CE(sat)}$	— —	0.15 0.35	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Small-Signal Current Transfer Ratio, Magnitude ( $I_C = 5.0\text{ mAdc}$ , $V_{CE} = 4.0\text{ Vdc}$ , $f = 100\text{ MHz}$ ) ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ , $f = 100\text{ MHz}$ )	$ h_{fe} $	15 20	— —	—
Output Capacitance ( $V_{CB} = 4.0\text{ Vdc}$ , $I_E = 0.1$ to $1.0\text{ MHz}$ )	$C_{ob0}$	—	2.5	pF
Input Capacitance ( $V_{EB} = 0.5\text{ Vdc}$ , $I_E = 0.1$ to $1.0\text{ MHz}$ )	$C_{ib0}$	—	2.5	pF
Collector-Base Time Constant (See Figure) ( $I_C = 5.0\text{ mAdc}$ , $V_{CE} = 4.0\text{ Vdc}$ , $f = 31.8\text{ MHz}$ ) ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 4.0\text{ Vdc}$ , $f = 31.8\text{ MHz}$ )	$\tau_b C_C$	— —	60 50	ps
<b>SWITCHING CHARACTERISTICS</b> (See Figure 35) ( $I_C = 10\text{ mAdc}$ )				
Turn-On Time	$t_{on}$	—	2.5	ns
Turn-Off Time	$t_{off}$	—	3.5	ns

**ASSURANCE TESTING (Pre/Post Burn-In)**

Burn-In Conditions:  $T_A = 25 \pm 3^\circ\text{C}$ ,  $V_{CB} = 10\text{ Vdc}$   
 $P_T = 200\text{ mW}$

Characteristics Tested	Symbol	Initial and End Point Limits		Unit
		Min	Max	
Collector Cutoff Current ( $V_{CE} = 10\text{ Vdc}$ , $V_{BE(off)} = 2.0\text{ Vdc}$ )	$I_{CEX}$	—	5.0	nAdc
DC Current Gain <sup>(1)</sup> ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 1.0\text{ Vdc}$ )	$h_{FE}$	30	150	—
<b>Delta from Pre-Burn-In Measured Values</b>				
Delta Collector Cutoff Current	$\Delta I_{CEX}$	—	$\pm 100$ or $\pm 2.0$ whichever is greater	% of Initial Value nAdc
Delta DC Current Gain <sup>(1)</sup>	$\Delta h_{FE}$	—	$\pm 15$	% of Initial Value