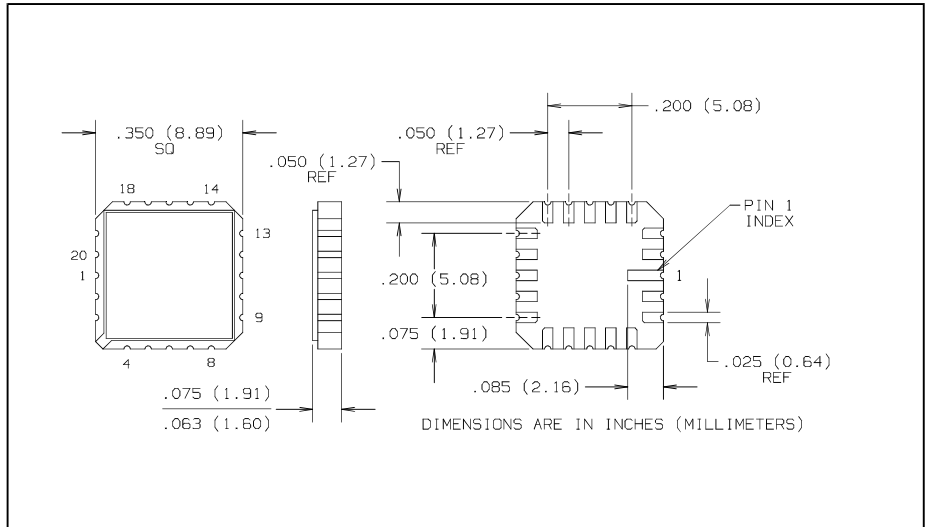


# Surface Mount Quad PNP Transistor Type JANTX, JANTXV, 2N6987U



## Features

- Ceramic surface mount package
- Hermetically sealed
- Small package minimizes circuit board area required
- Electrical performance similar to a 2N2907
- Qualification per MIL-PRF-19500/558

## Description

The JANTX2N6987U is a hermetically sealed, ceramic surface-mount device, consisting of 4 silicon PNP transistors. The 20 pin ceramic package is ideal for designs where board space and device weight are important design considerations.

Typical screening and lot acceptance tests are provided on page 13-4. The burn-in condition is  $V_{CB} = 30\text{ V}$ ,  $P_D = 250\text{ mW}$  each transistor,  $T_A = 25^\circ\text{ C}$ . Refer to MIL-PRF-19500/558 for complete requirements.

When ordering parts without processing, do not use a JAN prefix.

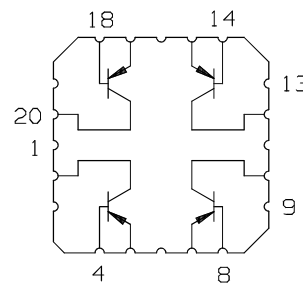
## Absolute Maximum Ratings ( $T_A = 25^\circ\text{ C}$ unless otherwise noted)

Collector-Emitter Voltage	60 V
Collector-Base Voltage	60 V
Emitter-Base Voltage	5 V
Collector Current Continuous	600 mA
Operating and Storage ( $T_J, T_{stg}$ )	$-65^\circ\text{ C}$ to $+200^\circ\text{ C}$
Power Dissipation (single transistor, no heat sink)	0.5 W
Power Dissipation (total device)	1 W <sup>(1)</sup>
Isolation Voltage	500 V

### Notes:

(1) Derate linearly 8.57 mW/ $^\circ\text{ C}$  above  $T_A = 25^\circ\text{ C}$ .

## Schematic



TOP VIEW

# Type JANTX, JANTXV, 2N6987U

Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
<b>Off Characteristics</b>					
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	60		V	$I_C = 10\text{ mA}$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	60		V	$I_C = 10\text{ mA}^{(2)}$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5		V	$I_E = 10\text{ }\mu\text{A}$
$I_{CBO1}$	Collector-Base Cutoff Current		10	nA	$V_{CB} = 50\text{ V}$
$I_{CBO2}$	Collector-Base Cutoff Current		10	$\mu\text{A}$	$V_{CB} = 50\text{ V}, T_A = 150^\circ\text{C}$
$I_{EBO}$	Emitter-Base Cutoff Current		50	nA	$V_{EB} = 3.5\text{ V}$
<b>On Characteristics</b>					
$h_{FE1}$	Forward Current Transfer Ratio	75			$V_{CE} = 10\text{ V}, I_C = 0.1\text{ mA}$
$h_{FE2}$	Forward Current Transfer Ratio	100	450		$V_{CE} = 10\text{ V}, I_C = 1.0\text{ mA}$
$h_{FE3}$	Forward Current Transfer Ratio	100			$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}^{(2)}$
$h_{FE4}$	Forward Current Transfer Ratio	100	300		$V_{CE} = 10\text{ V}, I_C = 150\text{ mA}^{(2)}$
$h_{FE5}$	Forward Current Transfer Ratio	50			$V_{CE} = 10\text{ V}, I_C = 500\text{ mA}^{(2)}$
$h_{FE6}$	Forward Current Transfer Ratio	50			$V_{CE} = 10\text{ V}, I_C = 1\text{ mA}, T_A = -55^\circ\text{C}^{(2)}$
$V_{CE(SAT)1}$	Collector-Emitter Saturation Voltage		0.4	V	$I_C = 150\text{ mA}, I_B = 15\text{ mA}^{(2)}$
$V_{CE(SAT)2}$	Collector-Emitter Saturation Voltage		1.6	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}^{(2)}$
$V_{BE(SAT)1}$	Base-Emitter Saturation Voltage		1.3	V	$I_C = 150\text{ mA}, I_B = 15\text{ mA}^{(2)}$
$V_{BE(SAT)2}$	Base-Emitter Saturation Voltage		2.6	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}^{(2)}$
<b>Small-Signal Characteristics</b>					
$ h_{fe} $	Magnitude of Small-Signal Short-Circuit Forward Current Transfer Ratio	2	8		$V_{CE} = 20\text{ V}, I_C = 50\text{ mA}, f = 100\text{ MHz}$
$h_{fe}$	Small-Signal Short Circuit Forward Current Transfer Ratio	100			$V_{CE} = 10\text{ V}, I_C = 1\text{ mA}, f = 1\text{ kHz}$
$C_{obo}$	Open Circuit Output Capacitance		8	pF	$V_{CB} = 10\text{ V}, I_E = 0, 100\text{ kHz} \leq f \leq 1\text{ MHz}$
$C_{ibo}$	Input Capacitance		30	pF	$V_{EB} = 2\text{ V}, I_C = 0, 100\text{ kHz} \leq f \leq 1\text{ MHz}$
<b>Switching Characteristics</b>					
$t_{on}$	Turn-On Time		45	ns	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_B = 15\text{ mA}$
$t_{off}$	Turn-Off Time		300	ns	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = I_{B2} = 15\text{ mA}$
<b>Transistor to Transistor Isolation</b>					
$R_{t-t}$	Isolation Resistance		10k	$M\Omega$	$V_{t-t} = 500\text{ V}$

(2) Pulsed Test: Pulse Width =  $300\text{ }\mu\text{s} \pm 50$ , 1-2 % Duty Cycle.

HI-REL  
SURFACE  
MOUNT