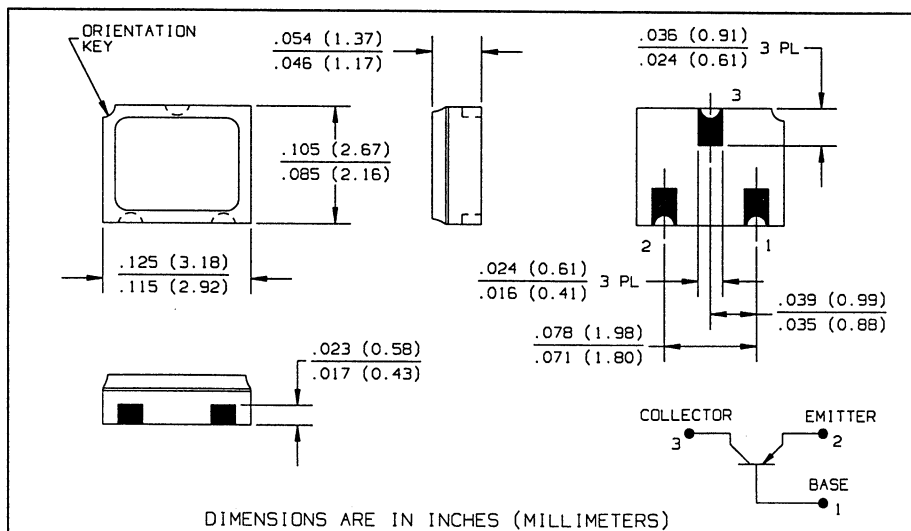


Surface Mount PNP General Purpose Transistor Type JANTX, JANTXV, 2N2907AUB



Features

- Ceramic surface mount package
- Miniature package to minimize circuit board area
- Hermetically sealed
- Footprint and pin-out matches SOT-23 packaged transistors
- Qualification per MIL-PRF-19500/291

Description

The JANTX/TXV2N2907AUB is a miniature, hermetically sealed, ceramic surface mount general purpose switching transistor. The miniature three pin ceramic package is ideal for upgrading commercial grade circuits to military reliability levels where plastic SOT-23 devices have been used. The "UB" suffix denotes the 3 terminal chip carrier package, type "B" per MIL-PRF-19500/291.

Typical screening and lot acceptance tests are provided on page 13-4. The burn-in condition is $V_{CB} = 30$ V, $P_D = 200$ mW, $T_A = 25^\circ$ C, $t = 80$ hrs. Refer to MIL-PRF-19500/291 for complete requirements. In addition, the TX and TXV versions receive 100% thermal response testing.

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

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

Collector-Base Voltage	60 V
Collector-Emitter Voltage	60 V
Emitter-Base Voltage	5.0 V
Collector Current-Continuous	600 mA
Operating Junction Temperature (T_J)	-65° C to $+200^\circ$ C
Storage Junction Temperature (T_{stg})	-65° C to $+200^\circ$ C
Power Dissipation @ $T_A = 25^\circ$ C	0.3 W
Power Dissipation @ $T_C = 25^\circ$ C	1.16 W ⁽¹⁾
Soldering Temperature (vapor phase reflow for 30 sec.)	215° C
Soldering Temperature (heated collet for 5 sec.)	260° C

Notes:

(1) Derate linearly 6.6 mW/ $^\circ$ C above 25° C.

Types JANTX, JANTXV-2N2907AUB

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITION
Off Characteristics					
V _{(BR)CBO}	Collector-Base Breakdown Voltage	60		V	I _C = 10 μA, I _E = 0
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	60		V	I _C = 10 mA, I _B = 0 ⁽²⁾
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	5.0		V	I _E = 10 μA, I _C = 0
I _{CBO}	Collector-Base Cutoff Current		10	nA	V _{CB} = 50 V, I _E = 0
			10	μA	V _{CB} = 50 V, I _E = 0, T _A = 150° C
I _{CES}	Collector-Emitter Cutoff Current		50	nA	V _{CE} = 50 V
I _{EBO}	Emitter-Base Cutoff Current		50	nA	V _{EB} = 4.0 V, I _C = 0
On Characteristics					
h _{FE}	Forward-Current transfer Ratio	75		-	V _{CE} = 10 V, I _C = 0.1 mA
		100	450	-	V _{CE} = 10 V, I _C = 1.0 mA
		100		-	V _{CE} = 10 V, I _C = 10 mA
		100	300	-	V _{CE} = 10 V, I _C = 150 mA ⁽²⁾
		50		-	V _{CE} = 10 V, I _C = 500 mA ⁽²⁾
		50		-	V _{CE} = 10 V, I _C = 1.0 mA, T _A = -55° C
V _{CE(SAT)}	Collector-Emitter Saturation Voltage		0.40	V	I _C = 150 mA, I _B = 15 mA ⁽²⁾
			1.60	V	I _C = 500 mA, I _B = 50 mA ⁽²⁾
V _{BE(SAT)}	Base-Emitter Saturation Voltage		1.30	V	I _C = 150 mA, I _B = 15 mA ⁽²⁾
			2.60	V	I _C = 500 mA, I _B = 50 mA ⁽²⁾
Small-Signal Characteristics					
h _{fe}	Forward-Current Transfer Ratio	100		-	V _{CE} = 10 V, I _C = 1.0 mA, f = 1.0 kHz
h _{fe}	Forward-Current Transfer Ratio	2.0		-	V _{CE} = 20 V, I _C = 50 mA, f = 100 MHz
C _{obo}	Open Circuit Output Capacitance		8.0	pF	V _{CB} = 10 V, 100 kHz ≤ f ≤ 1.0 MHz
C _{ibo}	Input Capacitance (Output Open)		30	pF	V _{EB} = 2.0 V, 100 kHz ≤ f ≤ 1.0 MHz
Switching Characteristics					
t _{on}	Turn-On Time		45	ns	V _{CC} = 30 V, I _C = 150 mA, I _{B1} = 15 mA
t _{off}	Turn-Off Time		300	ns	V _{CC} = 30 V, I _C = 150 mA, I _{B1} = I _{B2} = 15 mA

(2) Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$

HI-REL
SURFACE
MOUNT