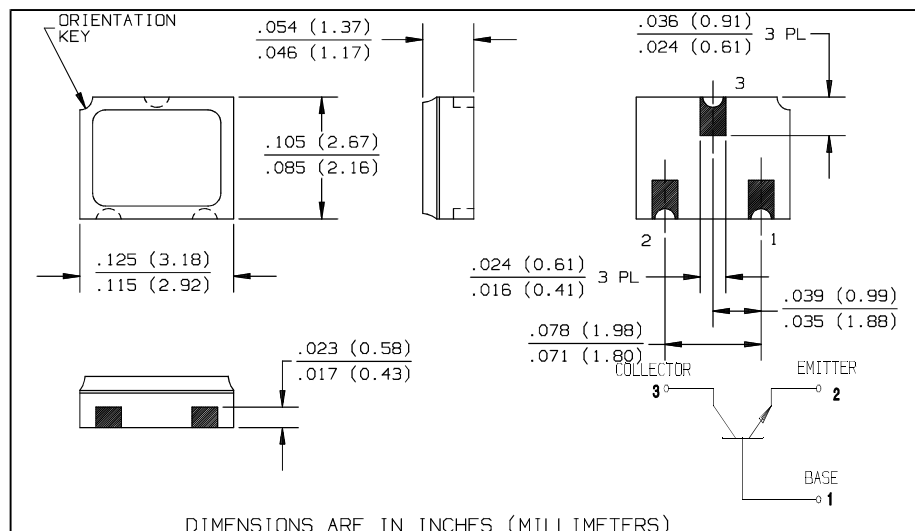


Surface Mount NPN General Purpose Transistor Type JANTX, JANTXV, 2N2222AUB



Feature

- Ceramic surface mount package
- Miniature package to minimize circuit board area
- Hermetically sealed
- Qualification per MIL-S-19500/255
- Same footprint and pin-out as many SOT-23 package transistors

Description

The JANTX/TXV2N2222AUB 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-19500/255.

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-19500/255 for complete requirements. In addition, the TX and TXV versions are 100% thermal response tested.

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	75 V
Collector-Emitter Voltage	50 V
Emitter-Base Voltage	6.0 V
Collector Current-Continuous	800 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 $^\circ$ C
Soldering Temperature (heated collet for 5 sec.)	260 $^\circ$ C

Notes:

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

Types JANTX, JANTXV-2N2222AUB

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	75		V	IC = 10 μA, IE = 0
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	50		V	IC = 10 mA, IB = 0
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	6.0		V	IE = 10 μA, IC = 0
ICBO	Collector-Base Cutoff Current		10	nA	V _{CB} = 60 V, IE = 0
			10	μA	V _{CB} = 60 V, IE = 0, TA = 150° C
IEBO	Emitter-Base Cutoff Current		10	nA	VEB = 4 V, IC = 0
ICES	Collector-Emitter Cutoff Current		50	nA	VCE = 50 V
On Characteristics					
hFE	Forward-Current Transfer Ratio	50		-	VCE = 10 V, IC = 0.1 mA
		75	325	-	VCE = 10 V, IC = 1.0 mA
		100		-	VCE = 10 V, IC = 10 mA
		100	300	-	VCE = 10 V, IC = 150 mA ⁽²⁾
		30		-	VCE = 10 V, IC = 500 mA ⁽²⁾
		35		-	VCE = 10 V, IC = 10 mA, TA = -55° C
VCE(SAT)	Collector-Emitter Saturation Voltage		0.30	V	IC = 150 mA, IB = 15 mA ⁽²⁾
			1.0	V	IC = 500 mA, IB = 15 mA ⁽²⁾
VBE(SAT)	Base-Emitter Saturation Voltage	0.60	1.20	V	IC = 150 mA, IB = 15 mA ⁽²⁾
			2.0	V	IC = 500 mA, IB = 15 mA ⁽²⁾
Small-Signal Characteristics					
hfe	Small Signal Forward Current Transfer Ratio	50		-	VCE = 10 V, IC = 1.0 mA, f = 1.0 kHz
IhfeI	Small Signal Forward Current Transfer Ratio	2.5		-	VCE = 20 V, IC = 20 mA, f = 100 MHz
Cobo	Open Circuit Output Capacitance		8.0	pF	VCB = 10 V, 100 kHz ≤ f ≤ 1.0 MHz
Cibo	Input Capacitance (Output Open)		25	pF	VEB = 0.5 V, 100 kHz ≤ f ≤ 1.0 MHz
Switching Characteristics					
ton	Turn-On Time		35	ns	VCC = 30 V, IC = 150 mA, IB1 = 15 mA
toff	Turn-Off Time		300	ns	VCC = 30 V, IC = 150 mA, IB1 = IB2 = 15 mA

HI-REL
SURFACE
MOUNT

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

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