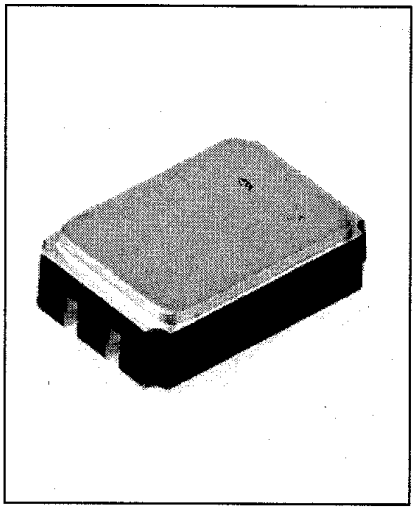
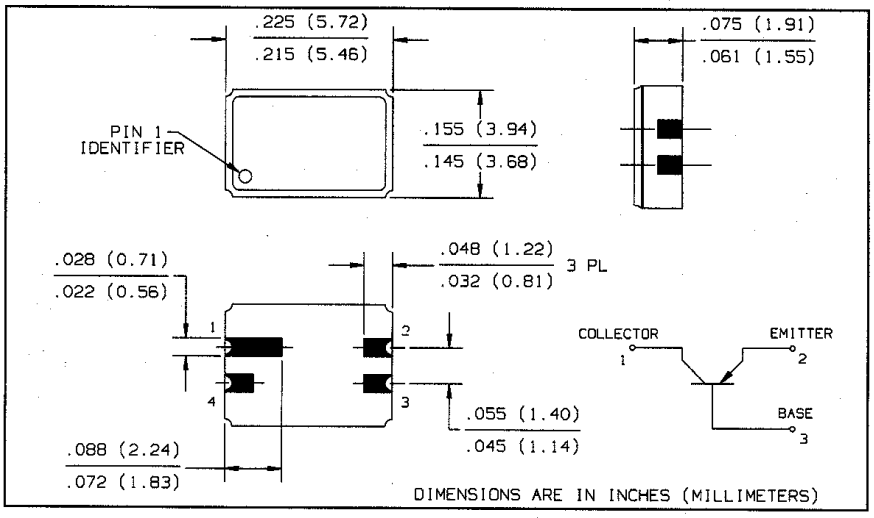
Surface Mount PNP General Purpose Transistor
Type TX, TXV, 2N2907AUA





Features

- Ceramic surface mount package
- Miniature package to minimize circuit board area
- Hermetically sealed
- Qualification per MIL-PRF-19500/291

Description

The TX/TXV2N2907AUA is a hermetically sealed ceramic surface mount general purpose switching transistor. The miniature four pin ceramic package is ideal for designs where board space and device weight are important design considerations. The "UA" suffix denotes the 4 terminal leadless chip carrier package, type "A" 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 = 400 mW, T_A = 25° 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° 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° C
Storage Junction Temperature (T_{stg})	-65° C to +200° C
Power Dissipation @ T_A = 25° C	0.4 W
Power Dissipation @ T_C = 25° 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/° C above 25° C.

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Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNIT	TEST CONDITIONS
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}	Small Signal Forward Current Transfer Ratio	100		-	V_{CE} = 10 V, I_C = 1.0 mA, f = 1.0 kHz
$\|h_{fe}\|$	Small Signal 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 Capacitance)		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 ≤ 300 µs, Duty Cycle ≤ 2.0%

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