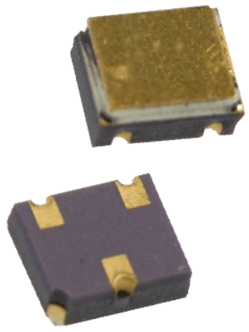
Surface Mount NP General Purpose Transistor

2N2907AUB (TX, TXV)



Features:

- Ceramic 3 pin surface mount package (UBN)
- Miniature package to minimize circuit board area
- Hermetically sealed
- Footprint and pin-out matches SOT-23 package transistors
- Processed per MIL-PRF-19500/291

Description:

The 2N2907AUB, 2N2907AUBTX and 2N2907AUBTXV are miniature, hermetically sealed, ceramic surface mount general purpose switching transistors. 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.

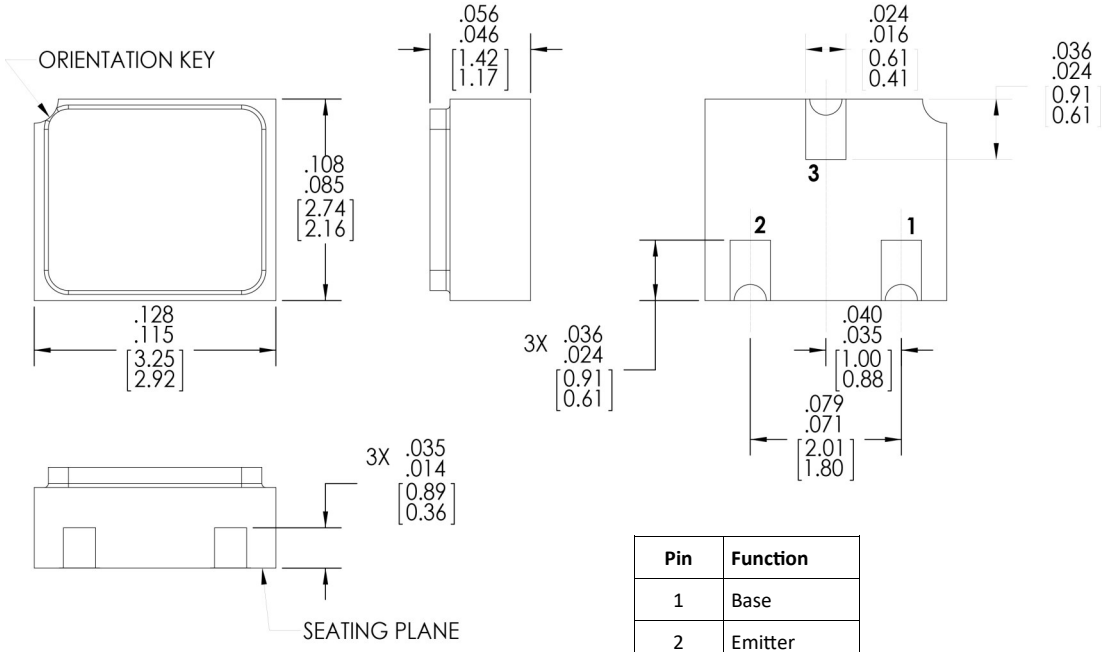
Typical screening and lot acceptance tests per MIL-PRF-19500/291.

The burn-in condition is V_{CB} = 30 V, P_D = 200 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.

Applications:

- General switching
- Amplification
- Signal processing
- Radio transmission
- Logic gates



Pin	Function
1	Base
2	Emitter
3	Collector

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Collector-Base Voltage	60V
Collector-Emitter Voltage	60V
Emitter-Base Voltage	5.0V
Collector Current-Continuous	600mA
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	0.5 W
Power Dissipation @ Tc = 25° C	1.00 W(1)
Soldering Temperature (vapor phase reflow for 30 seconds)	215° C
Soldering Temperature (heated collet for 5 seconds)	260° C

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	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	µA	V_{CB} = 50 V, I_E = 0
			10	µA	V_{CB} = 50 V, I_E = 0, T_A = 150° C
I_{EBO}	Emitter-Base Cutoff Current		10	µA	V_{CE} = 4.0 V, I_C = 0
I_{CES}	Collector Emitter Cutoff Current		10	nA	V_{EB} = 50 V
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

Note:
1. Derate linearly 6.6 mW/°C above 25° C
2. Pulse Width ≤300 µs, Duty Cycle ≤ 2.0%

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Electrical Characteristics (T_A = 25° C unless otherwise noted)					
SYMBOL	**PARAMETER**	**MIN**	**MAX**	**UNITS**	**TEST CONDITIONS**
ON CHARACTERISTICS					
$V_{CE\ (SAT)}$	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					
$\lvert h_{fe} \rvert$	Small Signal Forward Current Transfer Ratio	100		-	V_{CE} = 10 V, I_C = 1.0 mA, f = 1.0 kHz
$\lvert h_{fe} \rvert$	Small Signal Forward Current Transfer Ratio	2.0		-	V_{CE} = 20 V, I_C = 20 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

Note:
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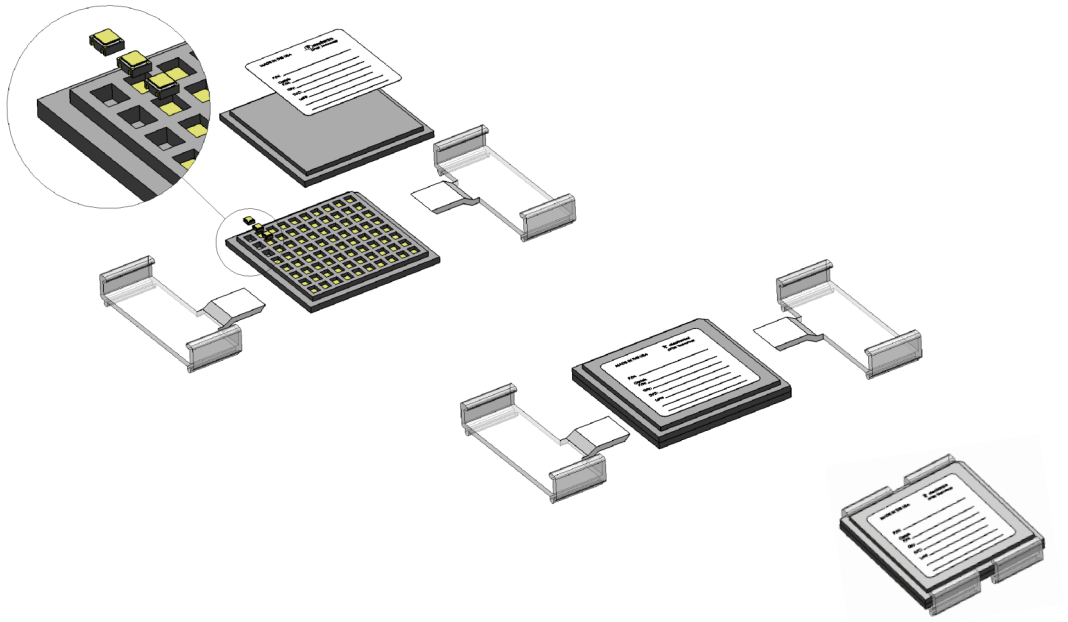
Standard Packaging:

Waffle Pack



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