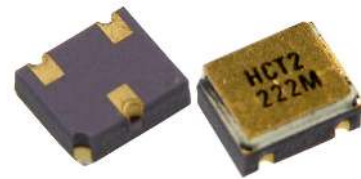


Surface Mount NPN General Purpose Transistor

2N2222AUB

Obsolete (2N2222AUBTX, 2N2222AUBTXV)



Features:

- Ceramic 3 pin surface mount package (UBN)
- Miniature package to minimize circuit board area
- Hermetically sealed
- Processed per MIL-PRF-19500/255
- Same footprint and pin-out as many SOT-23 package transistors

Description:

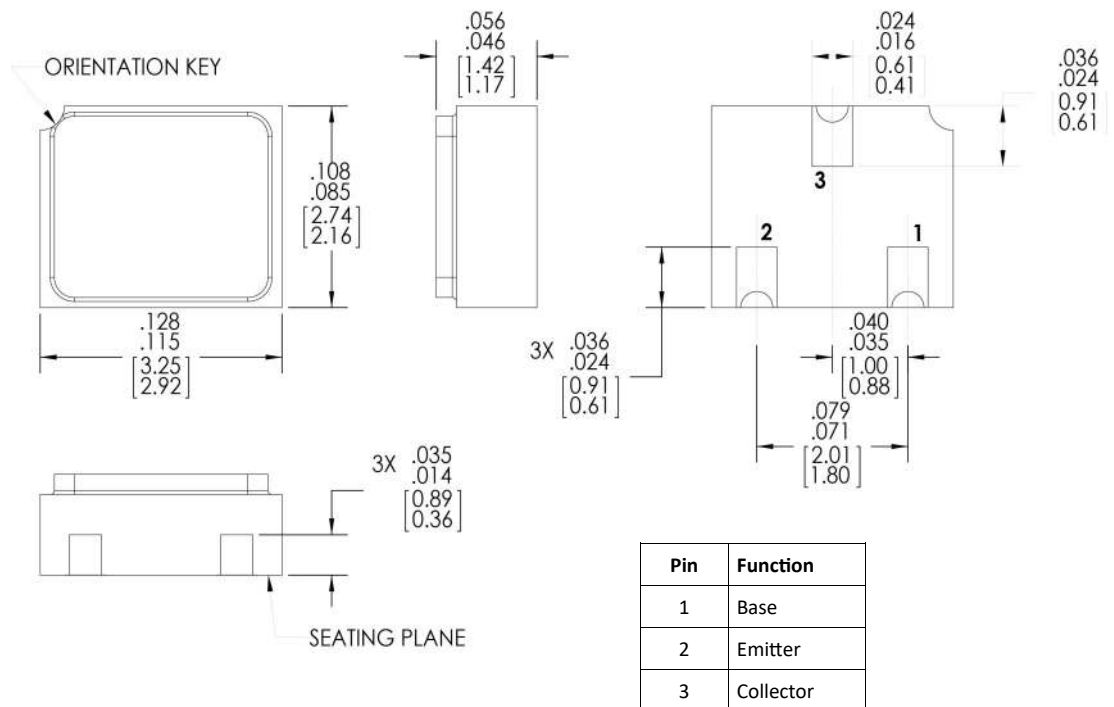
The 2N2222AUB (TX, TXV - **Obsolete**) is a miniature hermetically sealed ceramic surface mount general purpose switching transistor. The miniature three pin ceramic package is ideal for upgrading commercial grade circuits to military reliability levels where plastic SOT-23 devices have been used. The "UB" suffix denotes the 3 terminal chip carrier package.

Typical screening per MIL-PRF-19500/255. The burn-in condition is $V_{CB} = 30\text{ V}$. $P_D = 200\text{ mW}$, $T_A = 25^\circ\text{ C}$, $t = 80\text{ hrs}$. Refer to MIL-PRF-19500/255 for complete requirements. In addition, the TX and TXV versions receive 100 % thermal response testing.

When ordering parts without processing, do not use the TX or TXV suffix.

Applications:

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



General Note
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Surface Mount NPN General Purpose Transistor

2N2222AUB

Obsolete (2N2222AUBTX, 2N2222AUBTXV)



Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ 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° C
Storage Junction Temperature (T_{stg})	-65° C to +200° C
Power Dissipation @ $T_A = 25^\circ\text{C}$	0.3 W
Power Dissipation @ $T_c = 25^\circ\text{C}$	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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
OFF CHARACTERISTICS					
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	75		V	$I_C = 10\ \mu\text{A}, I_E = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	50		V	$I_C = 10\ \text{mA}, I_B = 0$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	6.0		V	$I_E = 10\ \mu\text{A}, I_C = 0$
I_{CBO}	Collector-Base Cutoff Current		10	nA	$V_{CB} = 60\ \text{V}, I_E = 0$
			10	μA	$V_{CB} = 60\ \text{V}, I_E = 0, T_A = 150^\circ\text{C}$
I_{EBO}	Emitter-Base Cutoff Current		10	nA	$V_{EB} = 4\ \text{V}, I_C = 0$
I_{CES}	Collector Emitter Cutoff Current		50	nA	$V_{CE} = 50\ \text{V}$
ON CHARACTERISTICS					
h_{FE}	Forward-Current Transfer Ratio	50		-	$V_{CE} = 10\ \text{V}, I_C = 0.1\ \text{mA}$
		75	325	-	$V_{CE} = 10\ \text{V}, I_C = 1.0\ \text{mA}$
		100		-	$V_{CE} = 10\ \text{V}, I_C = 10\ \text{mA}$
		100	300	-	$V_{CE} = 10\ \text{V}, I_C = 150\ \text{mA}^{(2)}$
		30		-	$V_{CE} = 10\ \text{V}, I_C = 500\ \text{mA}^{(2)}$
		35		-	$V_{CE} = 10\ \text{V}, I_C = 10\ \text{mA}, T_A = -55^\circ\text{C}$

Note:

- Derate linearly 6.6 mW/° C above 25° C
- Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\ \%$

General Note

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Surface Mount NPN General Purpose Transistor

2N2222AUB

Obsolete (2N2222AUBTX, 2N2222AUBTXV)



Electrical Specifications

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
ON CHARACTERISTICS					
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.3	V	$I_C = 150\text{ mA}, I_B = 15\text{ mA}^{(2)}$
			1.0	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}^{(2)}$
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage	0.6	1.2	V	$I_C = 150\text{ mA}, I_B = 15\text{ mA}^{(2)}$
			2.0	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}^{(2)}$
SMALL-SIGNAL CHARACTERISTICS					
h_{fe}	Small Signal Forward Current Transfer Ratio	50		-	$V_{CE} = 10\text{ V}, I_C = 1.0\text{ mA}, f = 1.0\text{ kHz}$
h_{fe}	Small Signal Forward Current Transfer Ratio	2.5		-	$V_{CE} = 20\text{ V}, I_C = 20\text{ mA}, f = 100\text{ MHz}$
C_{obo}	Open Circuit Output Capacitance		8.0	pF	$V_{CB} = 10\text{ V}, 100\text{ kHz} \leq f \leq 1.0\text{ MHz}$
C_{ibo}	Input Capacitance (Output Open)		25	pF	$V_{EB} = 0.5\text{ V}, 100\text{ kHz} \leq f \leq 1.0\text{ MHz}$
SWITCHING CHARACTERISTICS					
t_{on}	Turn-On Time		35	ns	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = 15\text{ mA}$
t_{off}	Turn-Off Time		300	ns	$V_{CC} = 30\text{ V}, I_C = 150\text{ mA}, I_{B1} = I_{B2} = 15\text{ mA}$

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