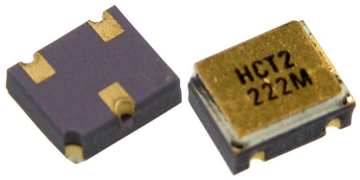
Surface Mount NPN General Purpose Transistor

2N2222AUB



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

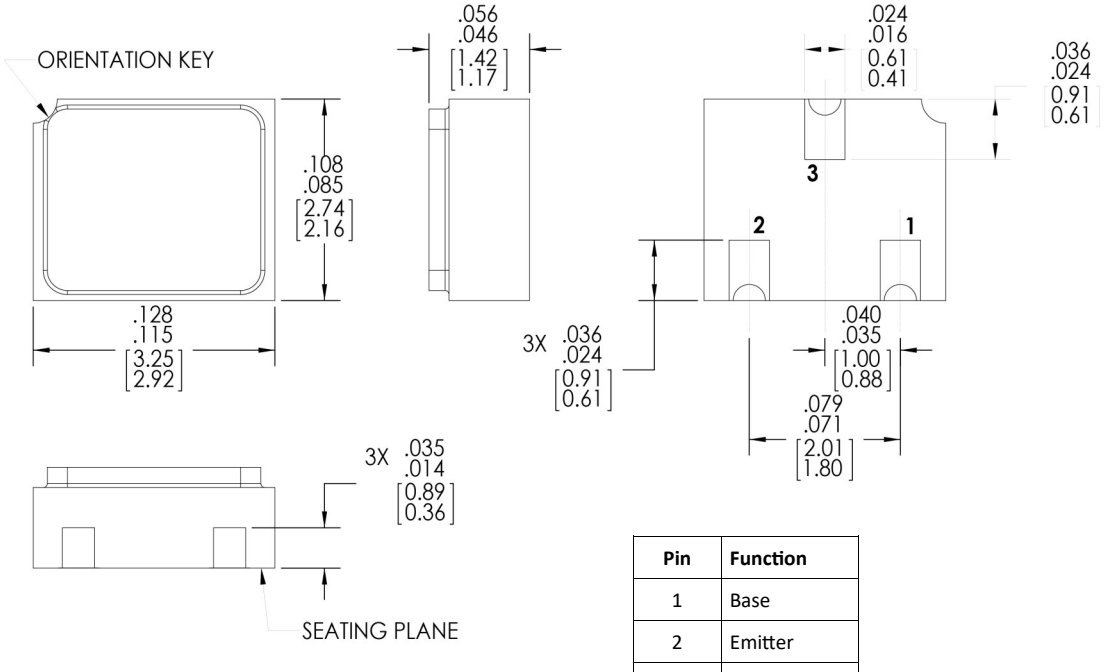
Description:

The 2N2222AUB 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. Refer to MIL-PRF-19500/255 for complete requirements.

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	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° C	0.3 W
Power Dissipation @ T_C = 25° C (1)	1.00 W
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	75	-	V	I_C = 10 µA, I_E = 0
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	50	-	V	I_C = 10 mA, I_B = 0
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	6.0	-	V	I_E = 10 µA, I_C = 0
I_{CBO}	Collector-Base Cutoff Current	-	10	nA	V_{CB} = 60 V, I_E = 0
		-	10	µA	V_{CB} = 60 V, I_E = 0, T_A = 150° C
I_{EBO}	Emitter-Base Cutoff Current	-	10	nA	V_{EB} = 4 V, I_C = 0
I_{CES}	Collector Emitter Cutoff Current	-	50	nA	V_{CE} = 50 V
ON CHARACTERISTICS					
h_{FE}	Forward-Current Transfer Ratio	50	-	-	V_{CE} = 10 V, I_C = 0.1 mA
		75	325	-	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)
		30	-	-	V_{CE} = 10 V, I_C = 500 mA (2)
		35	-	-	V_{CE} = 10 V, I_C = 10 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 %

Electrical Specifications

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
ON CHARACTERISTICS					
$V_{CE(SAT)}$ (2)	Collector-Emitter Saturation Voltage	-	0.3	V	I_C = 150 mA, I_B = 15 mA
		-	1.0	V	I_C = 500 mA, I_B = 50 mA
$V_{BE(SAT)}$ (2)	Base-Emitter Saturation Voltage	0.6	1.2	V	I_C = 150 mA, I_B = 15 mA
		-	2.0	V	I_C = 500 mA, I_B = 50 mA
SMALL-SIGNAL CHARACTERISTICS					
$\lvert h_{fe} \rvert$	Small Signal Forward Current Transfer Ratio	50	-	-	V_{CE} = 10 V, I_C = 1.0 mA, f = 1.0 kHz
$\lvert h_{fe} \rvert$	Small Signal Forward Current Transfer Ratio	2.5	-	-	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)	-	25	pF	V_{EB} = 0.5 V, 100 kHz ≤ f ≤ 1.0 MHz
SWITCHING CHARACTERISTICS					
t_{on}	Turn-On Time	-	35	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