2N2222A

75 Volts
0.8 Amps
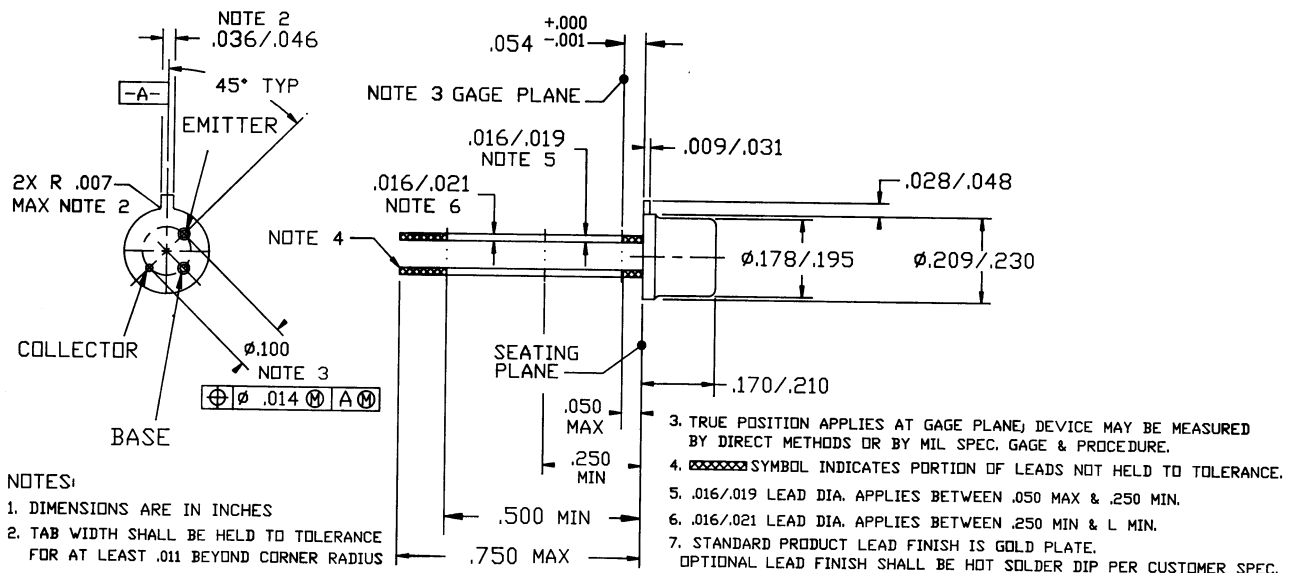
NPN
BIPOLAR
TRANSISTOR

Features

- Meets MIL-S-19500/255
- Collector-Base Voltage 75
- Collector Current: 800mA
- Fast Switching 335 nS

Maximum Ratings

RATING	SYMBOL	MAX.	UNIT
Collector-Emitter Voltage	V_{CEO}		Vdc
Collector-Base Voltage	V_{CBO}	75	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current	I_C	800	mAdc
Total Device Dissipation @ $T_A = 25^oC$ Derate above 25^oC	P_D	0.5 2.85	Watt mW/^oC
Total Device Dissipation @ $T_C = 25^oC$ Derate above 25^oC	P_D	1.8 10.3	Watt mW/^oC
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	350	^oC/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	97	^oC/W
Operating Temperature Range	T_J	-65 to + 200	^oC
Storage Temperature Range	T_{STG}	-65 to + 200	^oC

Mechanical Outline

NOTE 2
.036/.046

45° TYP

-A-

EMITTER

2X R .007
MAX NOTE 2

NOTE 4

COLLECTOR

Ø.100
NOTE 3

⊕ Ø .014 Ⓜ A Ⓜ

BASE

NOTES:
1. DIMENSIONS ARE IN INCHES
2. TAB WIDTH SHALL BE HELD TO TOLERANCE
   FOR AT LEAST .011 BEYOND CORNER RADIUS

+.000
.054 -.001

NOTE 3 GAGE PLANE

.016/.019
NOTE 5

.016/.021
NOTE 6

.009/.031

.028/.048

Ø.178/.195   Ø.209/.230

SEATING
PLANE

.170/.210

.050
MAX

.250
MIN

.500 MIN

.750 MAX

3. TRUE POSITION APPLIES AT GAGE PLANE, DEVICE MAY BE MEASURED
   BY DIRECT METHODS OR BY MIL SPEC. GAGE & PROCEDURE.
4. ▨▨▨▨ SYMBOL INDICATES PORTION OF LEADS NOT HELD TO TOLERANCE.
5. .016/.019 LEAD DIA. APPLIES BETWEEN .050 MAX & .250 MIN.
6. .016/.021 LEAD DIA. APPLIES BETWEEN .250 MIN & L MIN.
7. STANDARD PRODUCT LEAD FINISH IS GOLD PLATE.
   OPTIONAL LEAD FINISH SHALL BE HOT SOLDER DIP PER CUSTOMER SPEC.

Electrical Parameters (T_A @ 25°C unless otherwise specified)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Off Characteristics					
Collector-Emitter Breakdown Voltage (I_C = 10 mAdc, I_B = 0)	BV_{CE0}	50		--	Vdc
Collector-Emitter Breakdown Voltage (I_C = 10 µAdc, I_E = 0)	BV_{CBO}	75		--	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 µAdc, I_C = 0)	BV_{EBO}	6.0		--	Vdc
Collector to emitter Cutoff Current (V_{CE} = 30 Vdc)	I_{CES}	--		50	nAdc
Collector to base Cutoff Current (V_{CE} = 60 Vdc)	I	--		10	nAdc
D.C. Current Gain (I_C = 0.1 mAdc, V_{CE} = 10 Vdc) (I_C = 1.0 mAdc, V_{CE} = 10 Vdc) (I_C = 10 mAdc, V_{CE} = 10 Vdc)(1) (I_C = 10 mAdc, V_{CE} = 10 Vdc, T_A = -55°C)(1) (I_C = 150 mAdc, V_{CE} = 10 Vdc)(1) (I_C = 500 mAdc, V_{CE} = 10 Vdc)(1)	h_{FE}	 50 75 100 35 100 30		 -- 325 -- -- 300 --	
Collector-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc) (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(Sat)}$	 -- --		 0.3 1.0	Vdc
Base-Emitter Saturation Voltage(1) (I_C = 150 mAdc, I_B = 15 mAdc) (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{BE(Sat)}$	 0.6 --		 1.2 2.0	Vdc
Current Gain-Bandwidth Product(2) (I_C = 20 mAdc, V_{CE} = 20 Vdc, f = 100MHz)	f_T	250		--	Mhz
Output Capacitance(3) (V_{CB} = 10 Vdc, I_E = 0, 100kHz $\leq$ f $\leq$ 1MHz	C_{OBO}	--		8.0	pf
Input Capacitance (V_{EB} = 0.5 Vdc, I_C = 0, 100kHz $\leq$ f $\leq$ 1MHz)	C_{IBO}	--		25	pf

Switching Characteristics
  Delay Time: (V_{CC} = 30 Vdc, $V_{BE(off)}$ = -0.5 Vdc,
  Rise Time: I_C = 150 mAdc, I_{B1} = 15 mAdc)(Figure 12)
 	
  Storage Time: (V_{CC} = 30 Vdc, I_C = 150 mAdc,
  Fall Time: I_{B1} = I_{B2} = 15 mAdc)
	t_{ON}
	t_d
	t_r
	t_{off}
	t_S
	t_f
		
		--
		--
		
		--
		--
				
				10
				25
				
				225
				60
					ns