

2N2222A

**75 Volts
0.8 Amps**

**NPN
BIPOLAR
TRANSISTOR**

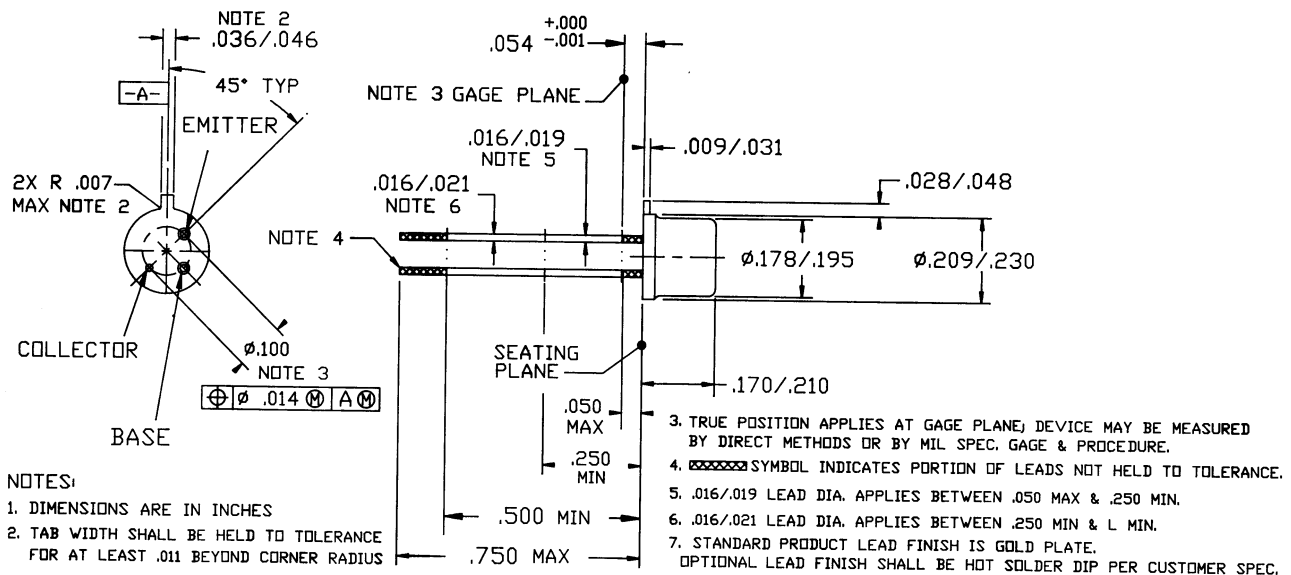
Features

- 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 @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.5 2.85	Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.8 10.3	Watt mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	350	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	97	$^\circ\text{C}/\text{W}$
Operating Temperature Range	T_J	-65 to + 200	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to + 200	$^\circ\text{C}$

Mechanical Outline



2N2222A

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

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Off Characteristics					
Collector-Emitter Breakdown Voltage ($I_C = 10 \text{ mAdc}, I_B = 0$)	BV_{CE0}	50		--	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 10 \text{ } \mu\text{Adc}, I_E = 0$)	BV_{CBO}	75		--	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \text{ } \mu\text{Adc}, I_C = 0$)	BV_{EBO}	6.0		--	Vdc
Collector to emitter Cutoff Current ($V_{CE} = 30 \text{ Vdc}$)	I_{CES}	--		50	nAdc
Collector to base Cutoff Current ($V_{CE} = 60 \text{ Vdc}$)	I	--		10	nAdc
D.C. Current Gain ($I_C = 0.1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$) ($I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$) ($I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)(1) ($I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, T_A = -55^\circ\text{C}$)(1) ($I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)(1) ($I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$)(1)	h_{FE}	50 75 100 35 100 30		-- 325 -- -- 300 --	
Collector-Emitter Saturation Voltage(1) ($I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$) ($I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$)	$V_{CE(Sat)}$	-- --		0.3 1.0	Vdc
Base-Emitter Saturation Voltage(1) ($I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$) ($I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$)	$V_{BE(Sat)}$	0.6 --		1.2 2.0	Vdc
Current Gain-Bandwidth Product(2) ($I_C = 20 \text{ mAdc}, V_{CE} = 20 \text{ Vdc}, f = 100\text{MHz}$)	f_T	250		--	Mhz
Output Capacitance(3) ($V_{CB} = 10 \text{ Vdc}, I_E = 0, 100\text{kHz} \leq f \leq 1\text{MHz}$)	C_{OBO}	--		8.0	pf
Input Capacitance ($V_{EB} = 0.5 \text{ Vdc}, I_C = 0, 100\text{kHz} \leq f \leq 1\text{MHz}$)	C_{IBO}	--		25	pf
Switching Characteristics Delay Time: ($V_{CC} = 30 \text{ Vdc}, V_{BE(off)} = -0.5 \text{ Vdc}$, Rise Time: $I_C = 150 \text{ mAdc}, I_{B1} = 15 \text{ mAdc}$)(Figure 12) Storage Time: ($V_{CC} = 30 \text{ Vdc}, I_C = 150 \text{ mAdc}$, Fall Time: $I_{B1} = I_{B2} = 15 \text{ mAdc}$)	t_{ON} t_d t_r t_{off} t_s t_f	-- -- -- -- -- --		10 25 -- 225 60	ns