

2N2905A

**60 Volts
600 mAmps**

**PNP
BIPOLAR
TRANSISTOR**

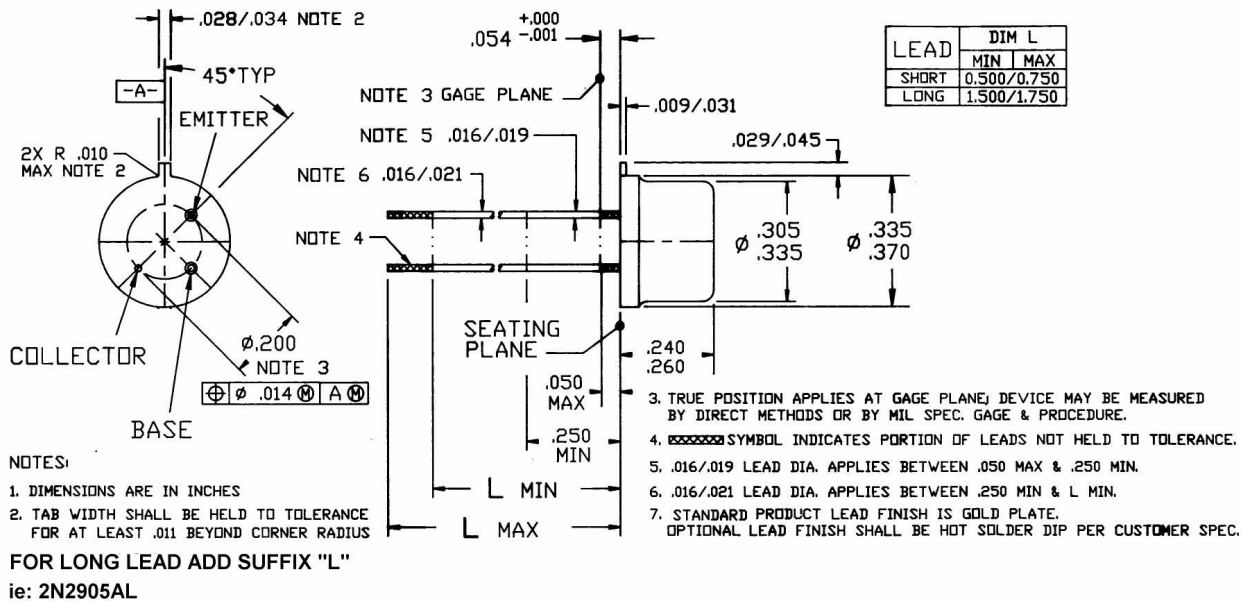
Features

- Meets MIL-S-19500/290
- Collector-Base Voltage 60V
- Collector Current: 600 mA
- Fast Switching 345 nS

Maximum Ratings

RATING	SYMBOL	MAX.	UNIT
Collector-Emitter Voltage	V_{CEO}	-60	Vdc
Collector-Base Voltage	V_{CBO}	-60	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current--Continuous	I_C	-600	mA
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	600 3.43	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	3.0 17.2	W mW/ $^\circ\text{C}$
Operating Temperature Range	T_J	-65 to + 200	$^\circ\text{C}$
Storage Temperature Range	T_S	-65 to + 200	$^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	292	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	58	$^\circ\text{C}/\text{W}$

Mechanical Outline



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

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Off Characteristics					
Collector-Emitter Breakdown Voltage(1) (I _C = -10 mAdc, I _B = 0)	BV_{CEO}	-60	--	--	Vdc
Collector-Base Breakdown Voltage (I _C = -10 μAdc, I _C = 0)	BV_{CBO}	-60	--	--	Vdc
Emitter-Base Breakdown Voltage (I _E = -10 uAdc, I _C = 0)	BV_{EBO}	-5.0	--	--	Vdc
Collector to Emitter Cutoff Current (V _{CE} = -30 Vdc, V _{EB} = -0.5 Vdc)	I_{CES}	--	--	-1	uAdc
Collector-Base Cutoff Current (V _{CB} = -50 Vdc, I _E = 0) (V _{CB} = -50 Vdc, I _E = 0, T _A = 150°C)	I_{CBO}	--	--	-0.01 -10	μAdc
Emitter to Base Cutoff Current (V _{EB} = -3.5 Vdc)	I_{EBO}	--	--	-50	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 = -1.0 mAdc, V _{CE} = -10Vdc) @ -55C (I _C = -10 mAdc, V _{CE} = -10 Vdc) (I _C = -150 mAdc, V _{CE} = -10 Vdc)(1) (I _C = -500 mAdc, V _{CE} = -10 Vdc)(1)	h_{FE}	75 100 50 100 100 50	-- -- -- -- --	-- 450 -- -- 300	--
Collector-Emitter Saturation Voltage (I _C = -150 mAdc, I _B = -15 Vdc) (I _C = -500 mAdc, I _B = -50 Vdc)	V_{CE(Sat)}	--	--	-0.4 -1.6	Vdc
Base-Emitter Saturation Voltage (I _C = -150 mAdc, I _B = -15 Vdc)(1) (I _C = -500 mAdc, I _B = -50 Vdc)(1)	V_{BE(Sat)}	--	--	-1.3 -2.6	Vdc
Small- signal short-circuit forward current transfer ratio (I _C = 1mAdc, V _{CE} = 10V, f = 1 kHz) (I _C = -50 mAdc, V _{CE} = -20 Vdc, f = 100MHz)	h_{fe}	100 --	-- --	-- 2	
Output Capacitance (V _{CB} = -10 Vdc, I _E = 0, 100kHz ≤ f ≤ 1MHz)	C_{OB}	--	--	8.0	pf
Input Capacitance (V _{EB} = -2.0 Vdc, I _C = 0, 100kHz < f < 1MHz)	C_{IB}	--	--	30	pf
Switching Speeds, Turn-on Time Turn-on Time (V _{CC} = -30 Vdc, I _C = -150 mAdc, I _{B1} = -15mAdc)	t_{ON}	--	--	45	ns
Turn-off Time (V _{CC} = -6.0 Vdc, I _C = -150 mAdc, I _{B1} = I _{B2} = -15 mAdc)	t_{off}	--	--	300	ns

(1) Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2.0%.



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