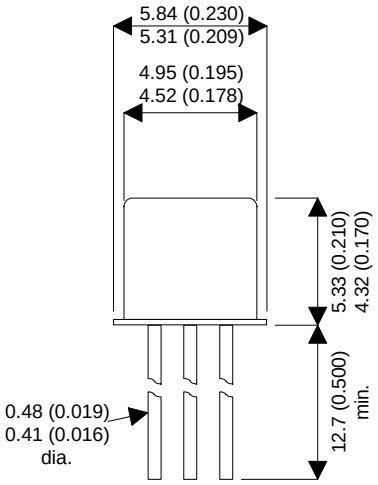
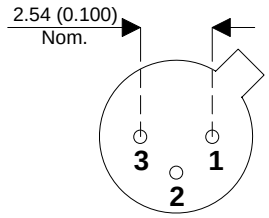
SEME LAB

2N2907A

MECHANICAL DATA

Dimensions in mm (inches)





TO–18 METAL PACKAGE

Underside View

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

HIGH SPEED MEDIUM POWER PNP SWITCHING TRANSISTOR

FEATURES

- **SILICON PLANAR EPITAXIAL PNP TRANSISTOR**
- **HIGH SPEED SATURATED SWITCHING**
- **ALSO AVAILABLE IN CERAMIC SURFACE MOUNT PACKAGE**

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V_{CBO}	Collector - Base Voltage	–60V
V_{CEO}	Collector - Emitter Voltage	–60V
V_{EBO}	Emitter - Base Voltage	–5V
I_C	Collector Current	600mA
P_D	Total Device Dissipation @ T_A = 25°C	400mW
	Derate above 25°C	2.28mW / °C
P_D	Total Device Dissipation @ T_C = 25°C	1.8W
	Derate above 25°C	10.3mW / °C
T_J , T_{STG}	Operating and Storage Junction Temperature Range	–65 to +200°C

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
	OFF CHARACTERISTICS					
$V_{(BR)CEO}$ [1]	Collector – Emitter Breakdown Voltage	I_C = 10mA I_B = 0	60			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 10µA I_E = 0	60			V
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 10µA I_C = 0	5			V
I_{CEX}	Collector Cut-off Current	V_{CE} = 30V V_{BE} = 0.5V			50	nA
I_{CBO}	Collector Cut-off Current	I_E = 0 V_{CB} = 50V			0.01	µA
		T_A = 150°C			10	
I_B	Base Current	V_{CE} = 60V V_{BE} = 0.5V			50	nA
	ON CHARACTERISTICS					
$V_{CE(sat)}$ [1]	Collector – Emitter Saturation Voltage	I_C = 150mA I_B = 15mA			0.4	V
		I_C = 500mA I_B = 50mA			1.6	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = 150mA I_B = 15mA [1]	0.6		1.3	V
		I_C = 500mA I_C = 50mA			2.6	
h_{FE}	DC Current Gain	I_C = 0.1mA V_{CE} = 10V	75			—
		I_C = 1mA V_{CE} = 10V	100			
		I_C = 10mA V_{CE} = 10V	100			
		I_C = 150mA V_{CE} = 10V [1]	100		300	
		I_C = 500mA V_{CE} = 10V [1]	50			
	SMALL SIGNAL CHARACTERISTICS					
f_T	Transition Frequency [2]	I_C = 50mA V_{CE} = 20V f = 100MHz	200			MHz
C_{ob}	Output Capacitance	V_{CB} = 10V I_E = 0 f = 100kHz			8	pF
C_{ib}	Input Capacitance	V_{BE} = 2V I_C = 0 f = 100kHz			30	pF
	SWITCHING CHARACTERISTICS					
t_{on}	Turn–On Time	V_{CC} = 30V		26	45	ns
t_d	Delay Time	I_C = 150mA		6	10	
t_r	Rise Time	I_{B1} = 15mA		20	40	
t_{off}	Turn–Off Time	V_{CC} = 6V		70	100	ns
t_s	Storage Time	I_C = 150mA		50	80	
t_f	Fall Time	I_{B1} = I_{B2} = 15mA		20	30	

NOTES:

1) Pulse test: $t_p \leq 300\mu s$, $\delta \leq 2\%$

2) f_T is defined as the frequency at which h_{FE} extrapolates to unity.