

2N3905

PNP EPITAXIAL SILICON TRANSISTOR

T-29-21

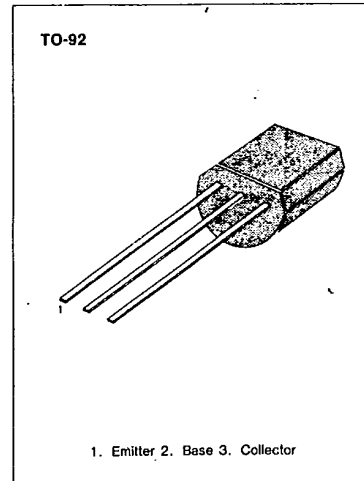
GENERAL PURPOSE TRANSISTOR

- Collector-Emitter Voltage: $V_{CE0} = 40V$
- Collector Dissipation: $P_C (\text{max}) = 625mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	200	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

- Refer to 2N3906 for graphs

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 10\mu A, I_E = 0$	40			V
*Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu A, I_C = 0$	5			V
Base Cut-off Current	I_{BL}	$V_{CE} = 30V, V_{BE} = 3V$			50	nA
Collector Cut-off Current	I_{CEX}	$V_{CE} = 30V, V_{BE} = 3V$			50	nA
*DC Current Gain	h_{FE}	$I_C = 0.1mA, V_{CE} = 1V$	30			
		$I_C = 1mA, V_{CE} = 1V$	40			
		$I_C = 10mA, V_{CE} = 1V$	50		150	
		$I_C = 50mA, V_{CE} = 1V$	30			
		$I_C = 100mA, V_{CE} = 1V$	15			
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$			0.25	V
		$I_C = 50mA, I_B = 5mA$			0.4	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 1mA$	0.65		0.85	V
		$I_C = 50mA, I_B = 5mA$			0.95	V
Current Gain Bandwidth Product	f_T	$I_C = 10mA, V_{CE} = 20V$ $f = 100MHz$	200			MHz
Output Capacitance	C_{ob}	$V_{CB} = 5V, I_E = 0$ $f = 100KHz$			4.5	pF
Turn On Time	t_{on}	$V_{CC} = 3V, V_{BE} = 0.5V$ $I_C = 10mA, I_{B1} = 1mA$			70	ns
Turn Off Time	t_{off}	$V_{CC} = 3V, I_C = 10mA$ $I_B = I_{B2} = 1mA$			260	ns

- * Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

