

Transistors

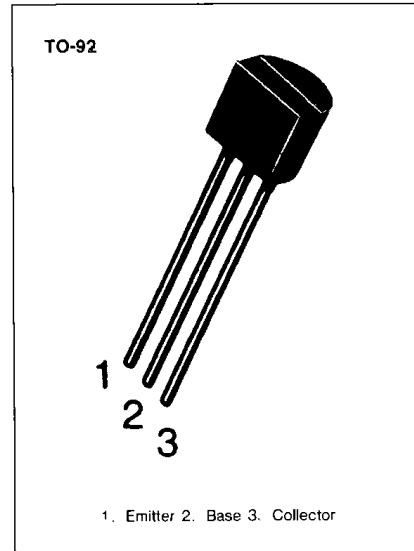
2N3906

GENERAL PURPOSE TRANSISTOR

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

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	$^\circ C$



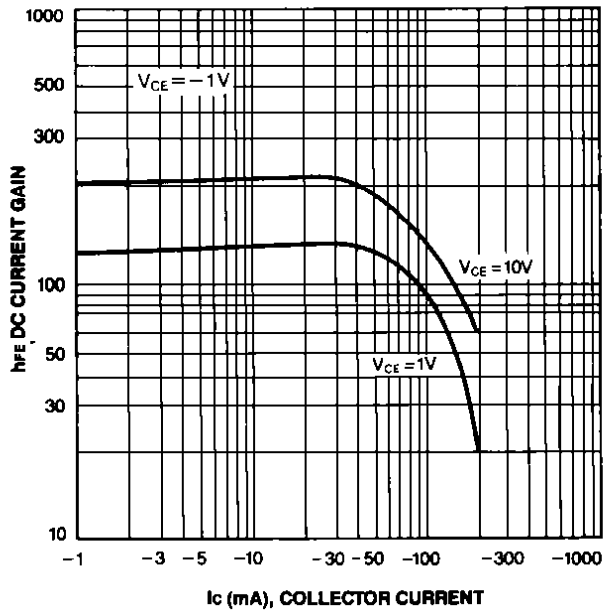
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

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}	$I_E = -10\mu A, I_C = 0$	-6			V
Collector Cut-off Current	I_{CEX}	$V_{CE} = -30V, V_{EB} = -3V$			-50	nA
Base Cut-off Current	I_{BL}	$V_{CE} = -30V, V_{EB} = -3V$			-50	nA
*DC Current Gain	h_{FE}	$V_{CE} = -1V, I_C = -0.1mA$				
		$V_{CE} = -1V, I_C = -1mA$	60			
		$V_{CE} = -1V, I_C = -10mA$	80			
		$V_{CE} = -1V, I_C = -50mA$	100		300	
		$V_{CE} = -1V, I_C = 100mA$	60			
		$V_{CE} = -1V, I_C = -1mA$	30			
*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
Output Capacitance	C_{OB}	$V_{CB} = -5V, I_E = 0$			4.5	pF
Current Gain Bandwidth Product	f_T	$f = 100KHz$				
		$V_{CE} = -20V, I_C = -10mA$				
		$f = 100MHz$	250			MHz
Turn On Time	t_{ON}	$V_{CC} = -3V, V_{BE} = -0.5V$			70	ns
		$I_C = -10mA, I_B1 = -1mA$				
Turn Off Time	t_{OFF}	$V_{CC} = -3V, I_C = -10mA$				
		$I_B1 = I_B2 = 1 - mA$			300	ns

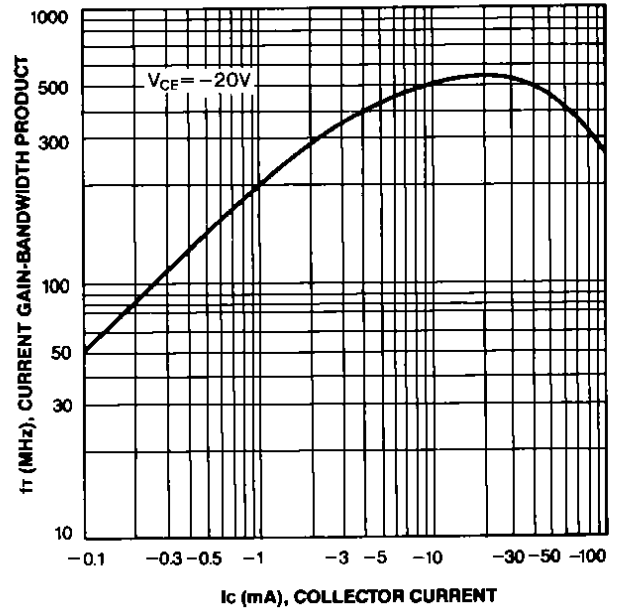
* Pulse Test: Pulse Width $\leq 300\mu s$. Duty Cycle $\leq 2\%$



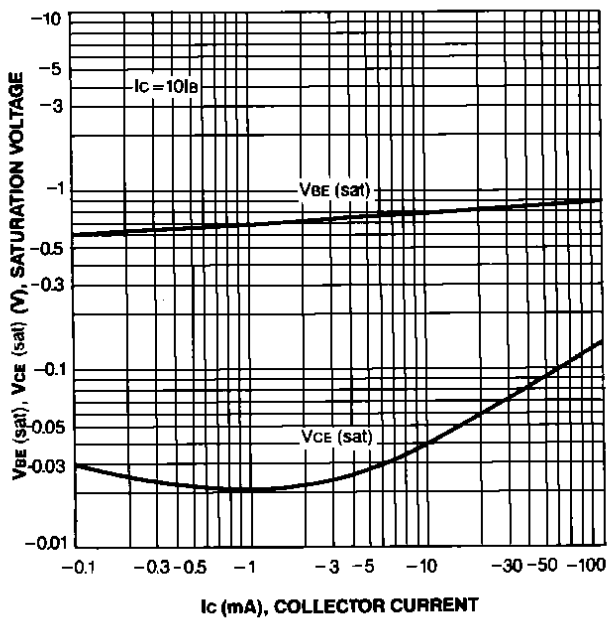
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



OUTPUT CAPACITANCE

