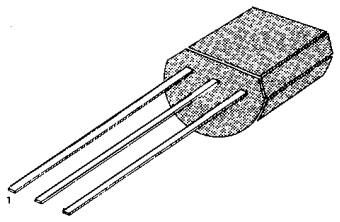
GENERAL PURPOSE TRANSISTOR

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

TO-92



1. Emitter 2. Base 3. Collector

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

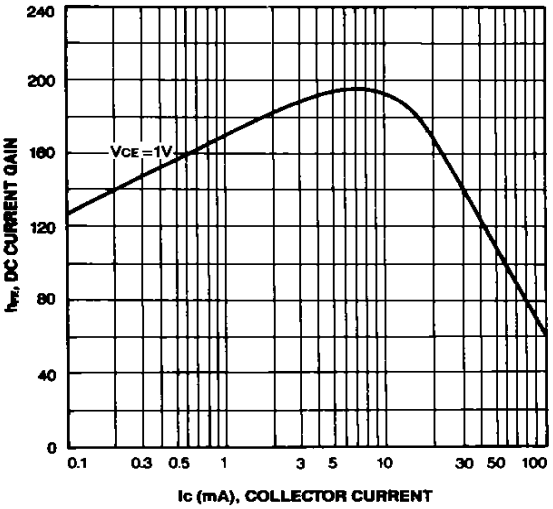
Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature	Tstg	−55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C)

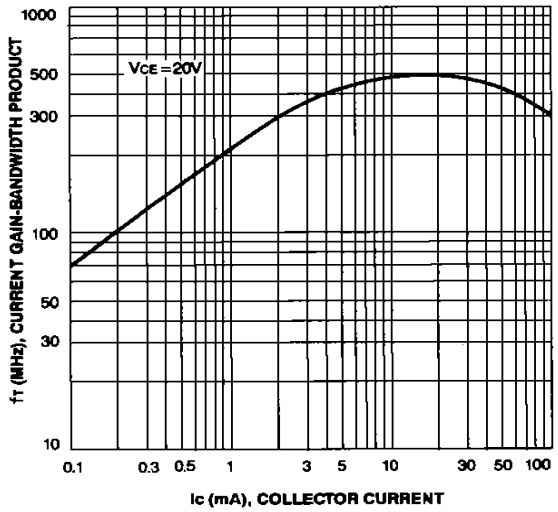
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=10μA, I_E=0	60			V
*Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA, I_C=0	6			V
Collector Cut-off Current	I_{CEX}	V_{CE}=30V, V_{EB}=3V			50	nA
Base Cut-off Current	I_{BL}	V_{CE}=30V, V_{EB}=3V			50	nA
*DC Current Gain	h_{FE}					
:2N3903		V_{CE}=1V, I_C=0.1mA	20			
2N3904			40			
2N3903		V_{CE}=1V, I_C=1mA	35			
2N3904			70			
2N3903		V_{CE}=1V, I_C=10mA	50		150	
2N3904			100		300	
2N3903		V_{CE}=1V, I_C=50mA	30			
2N3904			60			
2N3903		V_{CE}=1V, I_C=100mA	15			
2N3904			30			
*Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=10mA, I_B=1mA			0.2	V
		I_C=50mA, I_B=5mA			0.3	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 f=1MHz			4	pF
Current Gain Bandwidth Product	f_T	V_{CE}=20V, I_C=10mA				
:2N3903		f=100MHz	250			MHz
2N3904			300			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				
:2N3903		I_{B1}=I_{B2}=1mA			225	ns
2N3904					250	ns

*Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

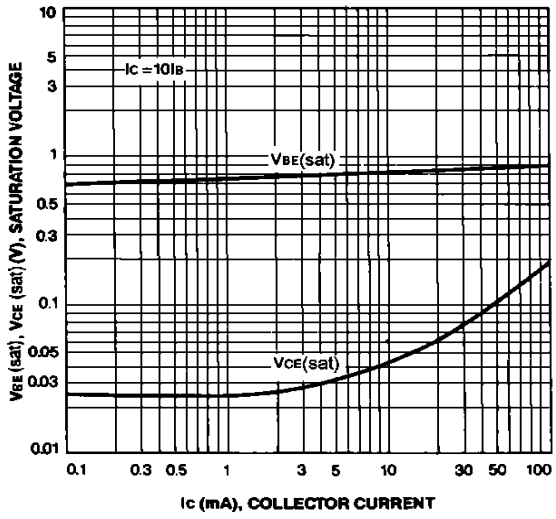
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE