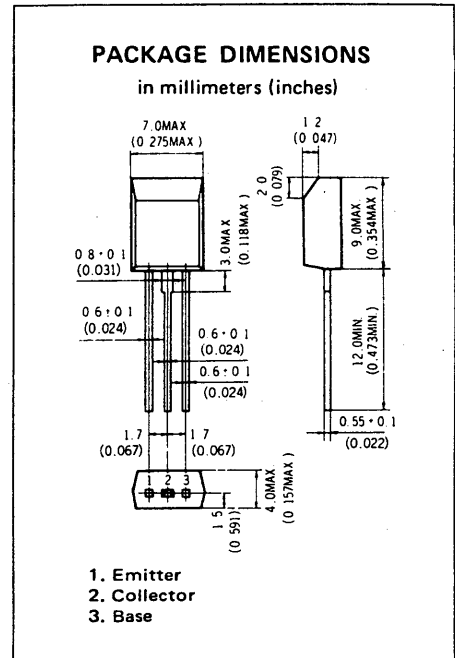


DESCRIPTION The 2SC3733 is designed for power amplifier and high speed switching applications.

- FEATURES**
- High speed, high voltage switching.
 - Low Collector Saturation Voltage.
 - Complementary to the NEC 2SA1460 PNP transistor.

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
 Storage Temperature -55 to +150 °C
 Junction Temperature 150 °C Maximum
 Maximum Power Dissipation (T_a = 25 °C)
 Total Power Dissipation 1.0 W
 Maximum Voltages and Currents (T_a = 25 °C)
 V_{CBO} Collector to Base Voltage . . . 80 V
 V_{CEO} Collector to Emitter Voltage . . 45 V
 V_{EBO} Emitter to Base Voltage 5.0 V
 I_{C(DC)} Collector Current (DC) 1.0 A
 I_{C(pulse)} Collector Current (pulse)* . . 2.0 A
 * PW ≤ 10 ms, Duty Cycle ≤ 50 %



ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
t _{on}	Turn-on Time		20	40	ns	V _{CC} = 10 V I _C = 500 mA I _{B1} = -I _{B2} = 50 mA
t _{off}	Turn-off Time		72	110	ns	
t _{stg}	Storage Time		55	80	ns	
f _T	Gain Bandwidth Product	300	380		MHz	V _{CE} = 10 V, I _E = -100 mA
C _{ob}	Output Capacitance		1.8	10	pF	V _{CB} = 10 V, I _E = 0, f = 1 MHz
h _{FE1} **	DC Current Gain	60	120	200	-	V _{CE} = 10 V, I _C = 50 mA
h _{FE2} **	DC Current Gain	60	150		-	V _{CE} = 10 V, I _C = 500 mA
V _{CE(sat)} **	Collector Saturation Voltage		0.17	0.40	V	I _C = 500 mA, I _B = 50 mA
V _{BE(sat)} **	Base Saturation Voltage		0.90	1.20	V	I _C = 500 mA, I _B = 50 mA
I _{CES}	Collector Cutoff Current			0.1	μA	V _{CE} = 45 V, R _{BE} = 0
I _{EBO}	Emitter Cutoff Current			0.1	μA	V _{EB} = 4.0 V, I _C = 0

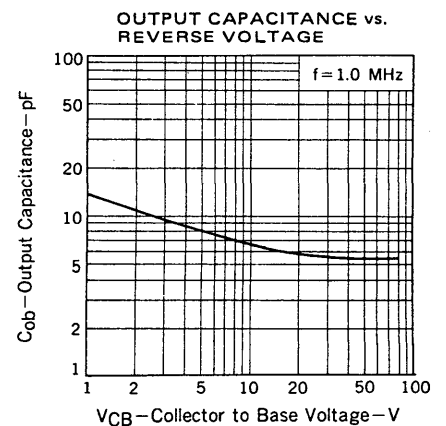
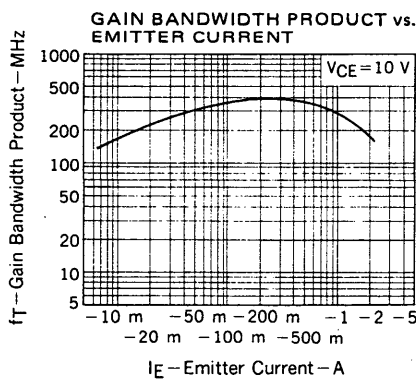
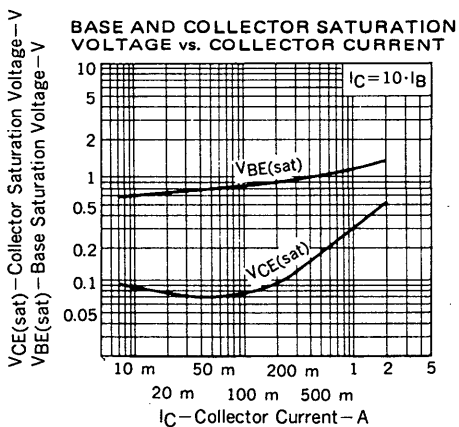
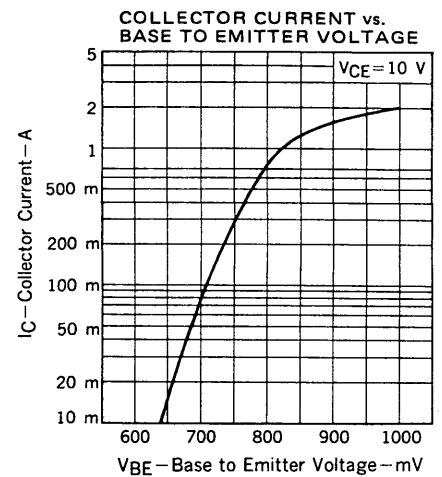
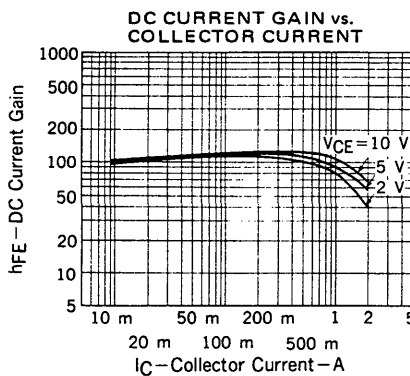
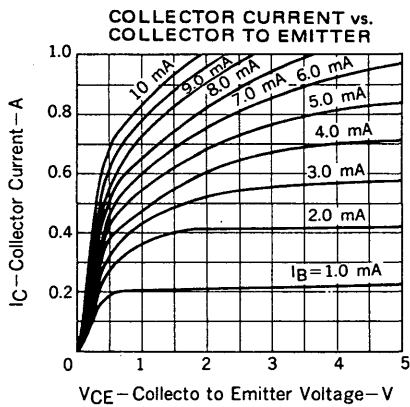
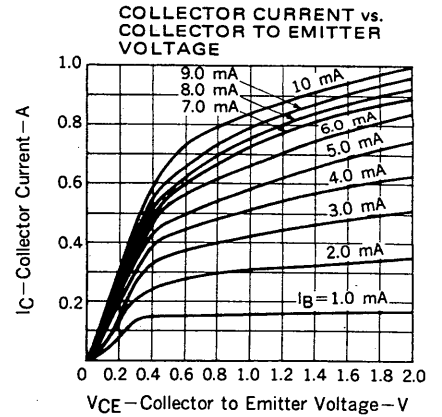
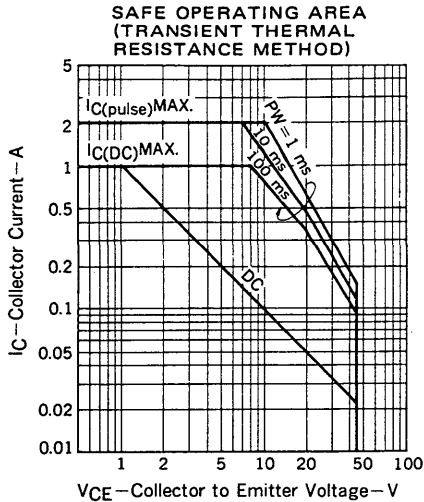
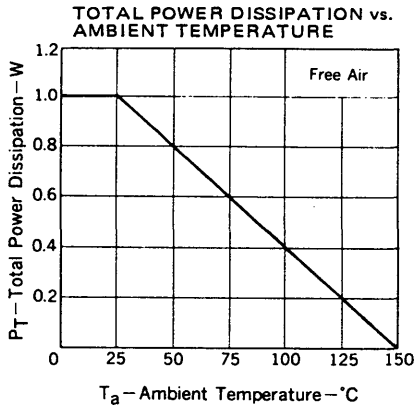
** Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

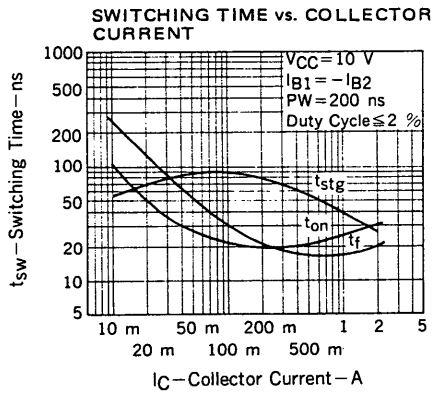
Classification of h_{FE1}

Rank	L	K
Range	60 to 120	100 to 200

Test Conditions : V_{CE} = 10 V, I_C = 50 mA

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)





SWITCHING TIME TEST CIRCUIT

