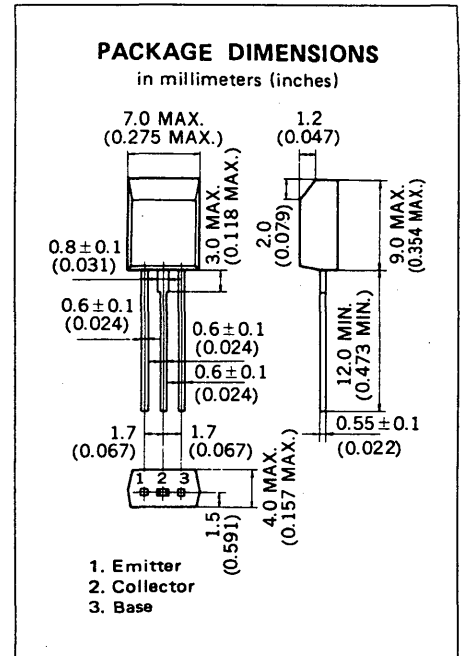


**DESCRIPTION** The 2SA1460 is designed for power amplifier and high speed switching applications.

- FEATURES**
- High speed, high voltage switching.
  - Low Collector Saturation Voltage.
  - Complementary to the NEC 2SC3733 NPN transistor.

**ABSOLUTE MAXIMUM RATINGS**

- Maximum Temperatures**
- Storage Temperature . . . . . -55 to +150 °C
  - Junction Temperature . . . . . 150 °C Maximum
- Maximum Power Dissipation (T<sub>a</sub> = 25 °C)**
- Total Power Dissipation . . . . . 1.0 W
- Maximum Voltages and Currents (T<sub>a</sub> = 25 °C)**
- V<sub>CB0</sub> Collector to Base Voltage . . . . . -60 V
  - V<sub>CEO</sub> Collector to Emitter Voltage . . . . -45 V
  - V<sub>EB0</sub> Emitter Base Voltage . . . . . -5.0 V
  - I<sub>C(DC)</sub> Collector Current (DC) . . . . . -1.0 A
  - I<sub>C(pulse)</sub> Collector Current (pulse)\*. . . . -2.0 A
- \* PW ≤ 10 ms, Duty Cycle ≤ 50 %



**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
t <sub>on</sub>	Turn-on Time		25	40	ns	V <sub>CC</sub> = -10 V I <sub>C</sub> = -500 mA I <sub>B1</sub> = -I <sub>B2</sub> = -50 mA
t <sub>stg</sub>	Storage Time		46	70	ns	
t <sub>off</sub>	Turn-off Time		62	100	ns	
f <sub>T</sub>	Gain Bandwidth Product	300	400		MHz	V <sub>CE</sub> = -10 V, I <sub>E</sub> = 100 mA
C <sub>ob</sub>	Output Capacitance		11	25	pF	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz
h <sub>FE1</sub> *	DC Current Gain	60	120	200	-	V <sub>CE</sub> = -10 V, I <sub>C</sub> = -50 mA
h <sub>FE2</sub> *	DC Current Gain	60	150		-	V <sub>CE</sub> = -10 V, I <sub>C</sub> = -500 mA
V <sub>CE(sat)</sub> *	Collector Saturation Voltage		-0.26	-0.60	V	I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA
V <sub>BE(sat)</sub> *	Base Saturation Voltage		-0.98	-1.20	V	I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA
I <sub>CES</sub>	Collector Cutoff Current			-0.5	μA	V <sub>CB</sub> = -45 V, R <sub>BE</sub> = 0
I <sub>EBO</sub>	Emitter Cutoff Current			-0.5	μA	V <sub>EB</sub> = -4.0 V, I <sub>C</sub> = 0

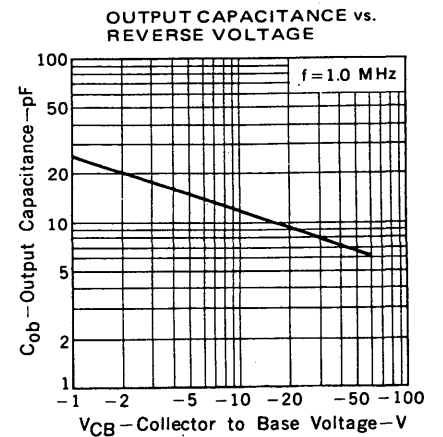
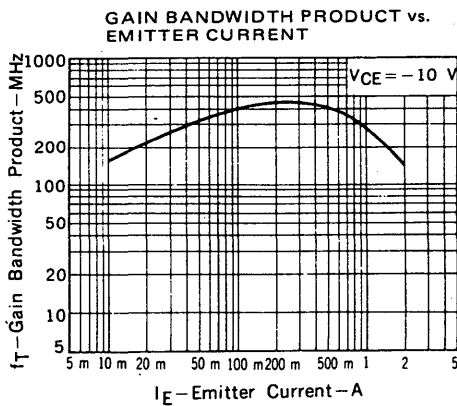
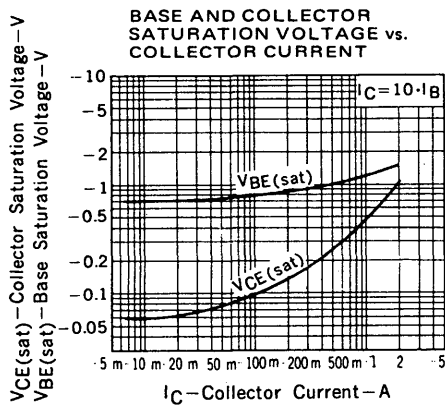
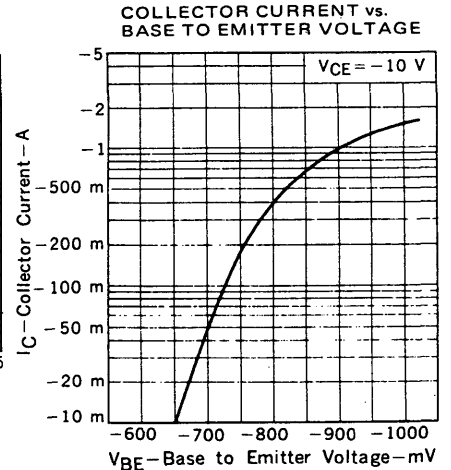
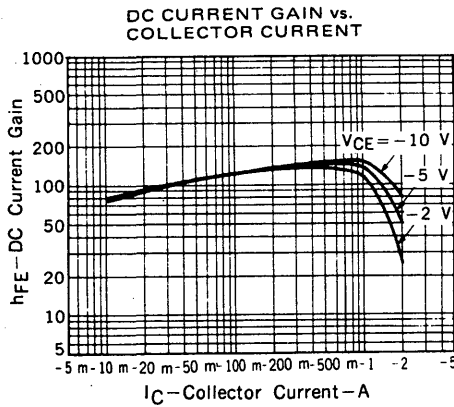
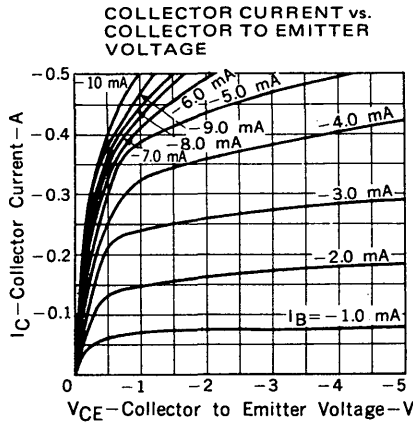
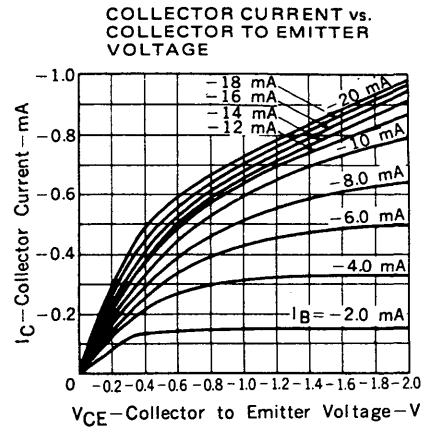
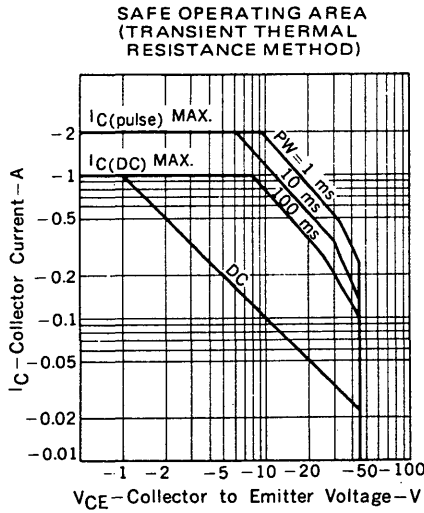
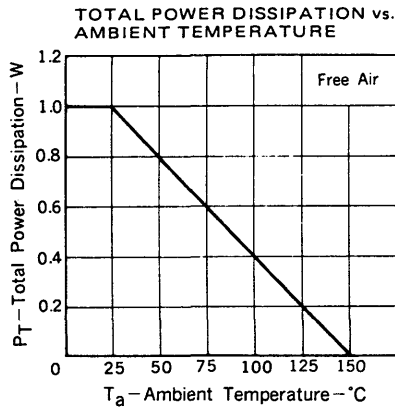
\* Pulsed PW ≤ 350 μs, Duty Cycle ≤ 2 %

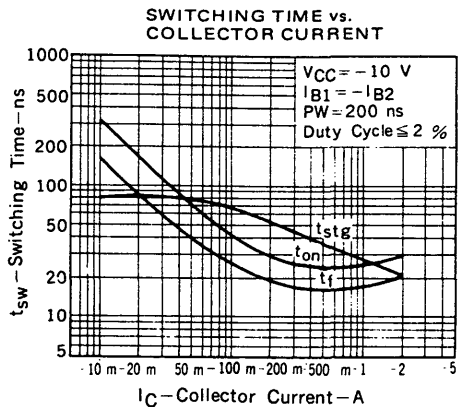
**Classification of h<sub>FE1</sub>**

Rank	L	K
Range	60 to 120	100 to 200

h<sub>FE1</sub> Test Conditions: V<sub>CE</sub> = -10 V, I<sub>C</sub> = -50 mA

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





**SWITCHING TIME TEST CIRCUIT**

