

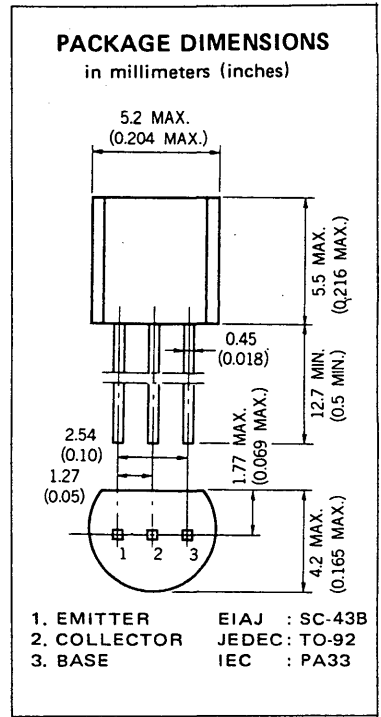
**DESCRIPTION** The 2SC2001 is designed for use in output stage of portable RADIO and cassette type tape recorder, general purpose applications.

**FEATURES**

- High total power dissipation.  
 $P_T$  : 600 mW
- High  $h_{FE}$  and low  $V_{CE(sat)}$   
 $h_{FE}$  ( $I_C = 100$  mA) : 200 TYP.  
 $V_{CE(sat)}$  (700 mA) : 0.20 V TYP.

**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 ..... 600 mW
- Maximum Voltages and Currents ( $T_a = 25$  °C)
- $V_{CBO}$  Collector to Base Voltage ..... 30 V
  - $V_{CEO}$  Collector to Emitter Voltage ..... 25 V
  - $V_{EBO}$  Emitter to Base Voltage ..... 5.0 V
  - $I_C$  Collector Current ..... 700 mA
  - $I_B$  Base Current ..... 150 mA



**ELECTRICAL CHARACTERISTICS ( $T_a = 25$  °C)**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}^*$	DC Current Gain	90	200	400	-	$V_{CE} = 1.0$ V, $I_C = 100$ mA
$h_{FE2}^*$	DC Current Gain	50	140		-	$V_{CE} = 1.0$ V, $I_C = 700$ mA
$C_{ob}$	Collector to Base Capacitance		13	25	pF	$V_{CB} = 6.0$ V, $I_E = 0$ $f = 1.0$ MHz
$f_T$	Gain Bandwidth Product	50	170		MHz	$V_{CE} = 6.0$ V, $I_E = -10$ mA
$V_{BE}^*$	Base to Emitter Voltage	600	640	700	mV	$V_{CE} = 6.0$ V, $I_C = 10$ mA
$V_{CE(sat)}^*$	Collector Saturation Voltage		0.2	0.6	V	$I_C = 700$ mA, $I_B = 70$ mA
$V_{BE(sat)}^*$	Base Saturation Voltage		0.95	1.2	V	$I_C = 700$ mA, $I_B = 70$ mA
$I_{CBO}$	Collector Cutoff Current			100	nA	$V_{CB} = 30$ V, $I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$

\* Pulsed PW  $\leq 350$   $\mu$ s, duty cycle  $\leq 2.0$  %

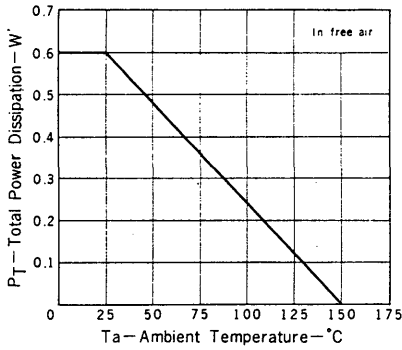
Classification of  $h_{FE1}$

Rank	M	L	K
Range	90 - 180	135 - 270	200 - 400

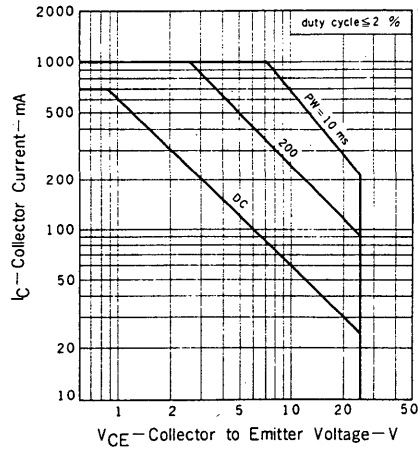
$h_{FE}$  Test Conditions :  $V_{CE} = 1.0$  V,  $I_C = 100$  mA

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

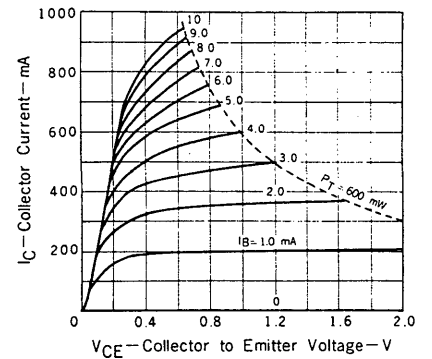
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



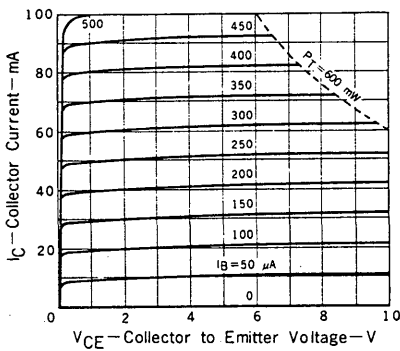
SAFE OPERATING AREAS (TRANSIENT THERMAL RESISTANCE)



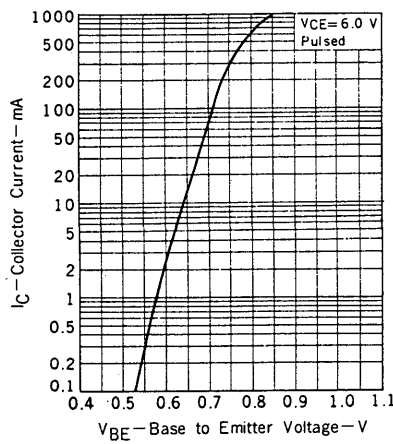
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



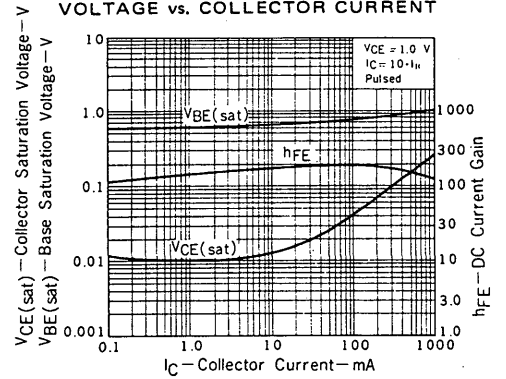
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



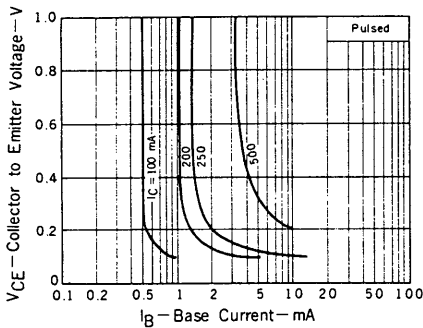
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



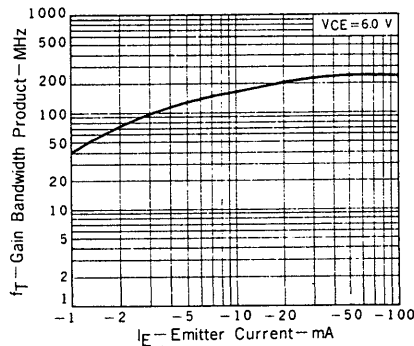
DC CURRENT GAIN, BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR TO EMITTER VOLTAGE vs. BASE CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



EMITTER TO BASE AND COLLECTOR TO BASE CAPACITANCE vs. REVERSE VOLTAGE

