

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

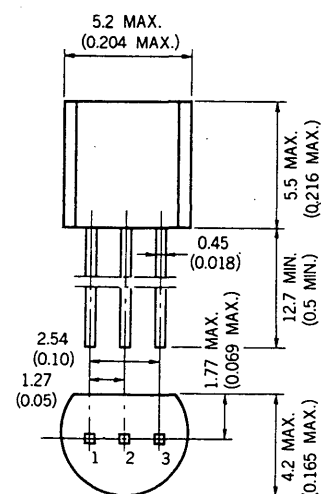
V_{EBO} Emitter to Base Voltage 5.0 V

I_C Collector Current 700 mA

I_B Base Current 150 mA

PACKAGE DIMENSIONS

in millimeters (inches)



1. EMITTER EIAJ : SC-43B
 2. COLLECTOR JEDEC : TO-92
 3. BASE IEC : PA33

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 ≤ 350 μ s, duty cycle ≤ 2.0 %

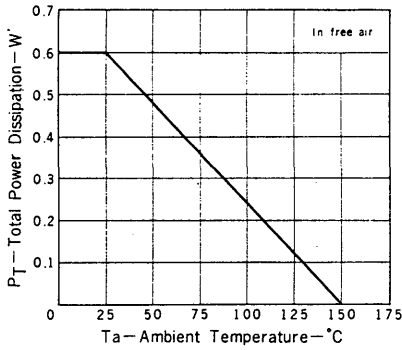
Classification of h_{FE1}

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

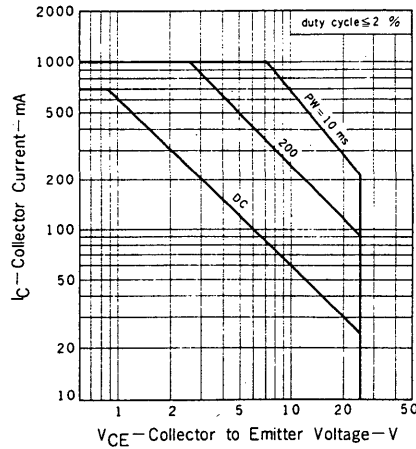
h_{FE} Test Conditions : $V_{CE} = 1.0$ V, $I_C = 100$ mA

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

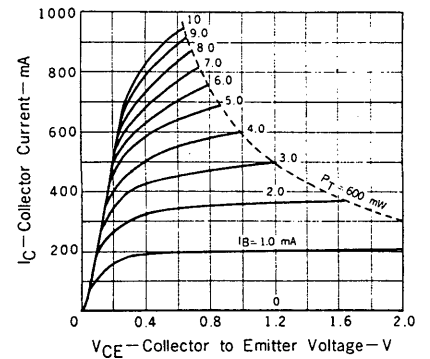
TOTAL POWER DISSIPATION
vs. AMBIENT TEMPERATURE



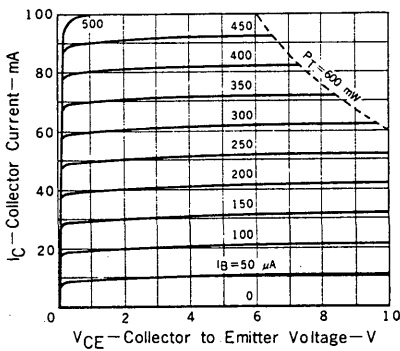
SAFE OPERATING AREAS
(TRANSIENT THERMAL RESISTANCE)



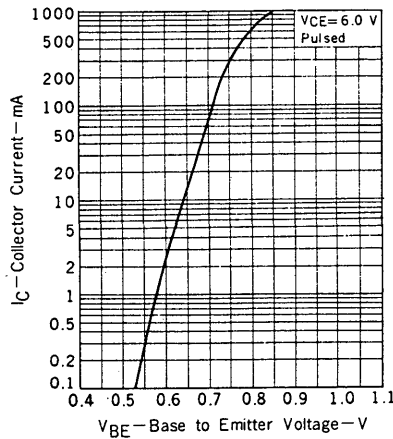
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



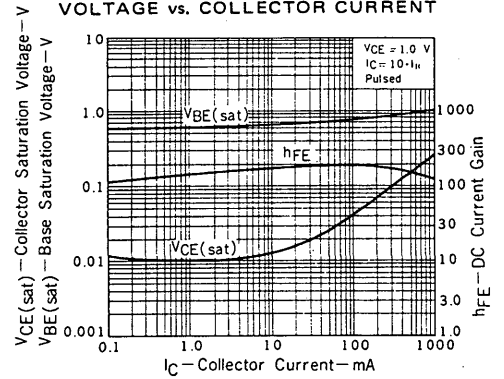
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



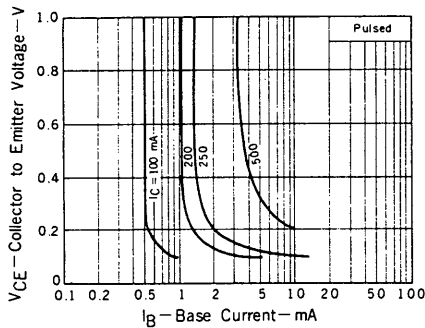
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



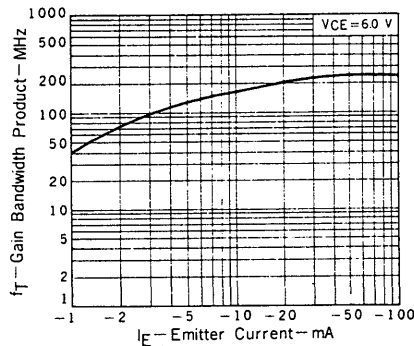
DC CURRENT GAIN,
BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR TO EMITTER VOLTAGE
vs. BASE CURRENT



GAIN BANDWIDTH PRODUCT
vs. EMITTER CURRENT



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

