

NPN SILICON TRANSISTOR 2SC2003

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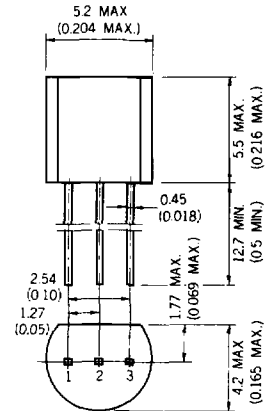
DESCRIPTION The 2SC2003 is designed for use in driver stage of high voltage audio equipments.

- FEATURES**
- High total power dissipation.
 P_T : 600 mW
 - High h_{FE} and high voltage.
 h_{FE} ($I_C = 50$ mA) : 200 TYP.
 V_{CEO} : 80 V

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 80 V
 V_{CEO} Collector to Emitter Voltage 80 V
 V_{EBO} Emitter to Base Voltage 5.0 V
 I_C Collector Current 300 mA
 I_B Base Current 60 mA

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER EIAJ : SC-43
 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, $I_C = 50$ mA
h_{FE2}^*	DC Current Gain	30	80	—	—	$V_{CE} = 2.0$ V, $I_C = 300$ mA
C_{ob}	Collector to Base Capacitance	—	7.0	15	pF	$V_{CB} = 6.0$ V, $I_E = 0$ $f = 1.0$ MHz
f_T	Gain Bandwidth Product	50	140	—	MHz	$V_{CE} = 6.0$ V, $I_E = -10$ mA
V_{BE}^*	Base to Emitter Voltage	600	645	700	mV	$V_{CE} = 6.0$ V, $I_C = 10$ mA
$V_{CE(sat)}^*$	Collector Saturation Voltage	—	0.15	0.6	V	$I_C = 300$ mA, $I_B = 30$ mA
$V_{BE(sat)}^*$	Base Saturation Voltage	—	0.86	1.2	V	$I_C = 300$ mA, $I_B = 30$ mA
I_{CBO}	Collector Cutoff Current	—	—	100	nA	$V_{CB} = 80$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current	—	—	100	nA	$V_{EB} = 5.0$ V, $I_E = 0$

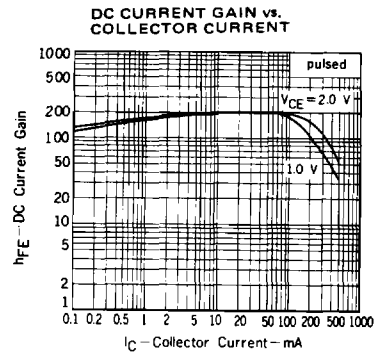
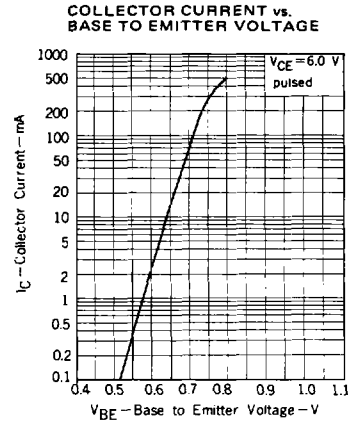
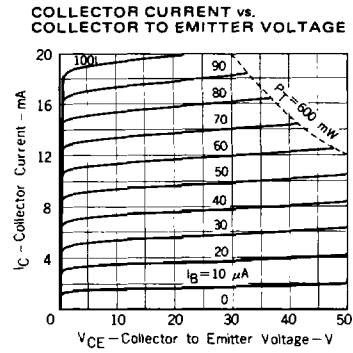
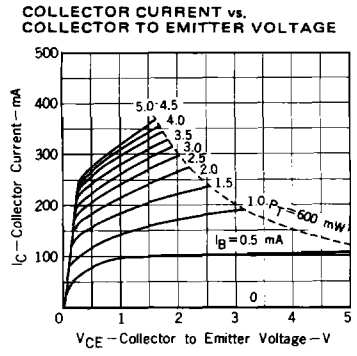
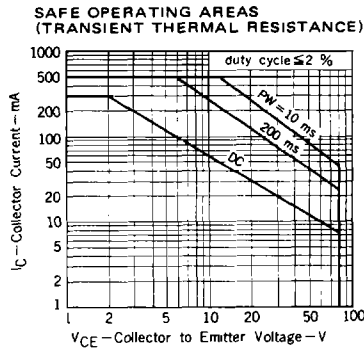
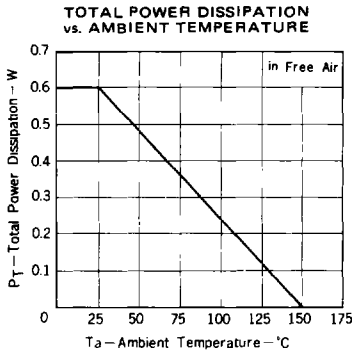
*Pulsed $PW \leq 350$ μ s, duty cycle ≤ 2.0 %.

Classification of h_{FE1}

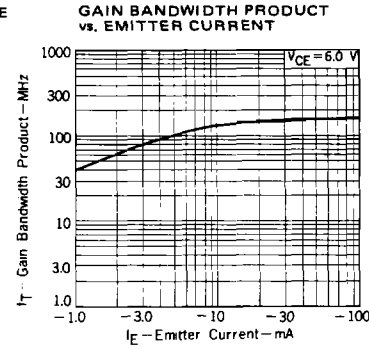
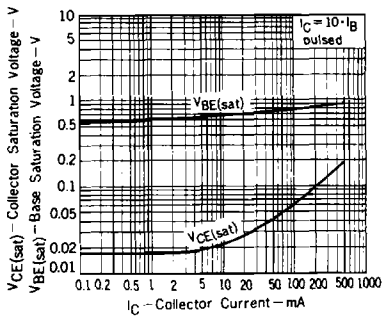
Rank	M	L	K
Range	90 - 180	135 - 270	200 - 400

h_{FE} Test Conditions : $V_{CE} = 1.0$ V, $I_C = 50$ mA

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



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



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

