

**DESCRIPTION** The 2SC2002 is designed for use in driver stage of high voltage audio equipments.

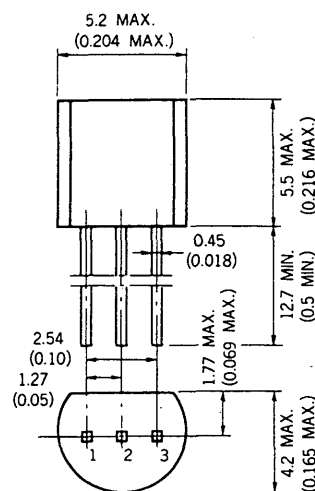
- FEATURES**
- High total power dissipation.  
 $P_T$  : 600 mW
  - High  $h_{FE}$  and high voltage.  
 $h_{FE}$  ( $I_C = 50$  mA) : 200 TYP.  
 $V_{CEO}$  : 60 V

### ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures		
Storage Temperature	-55 to +150 °C	
Junction Temperature	+150 °C Maximum	
Maximum Power Dissipation (Ta= 25 °C)		
Total Power Dissipation	600	mW
Maximum Voltages and Currents (Ta= 25 °C)		
VCBO	Collector to Base Voltage	60 V
VCEO	Collector to Emitter Voltage	60 V
VEBO	Emitter to Base Voltage	5.0 V
IC	Collector Current	300 mA
IB	Base Current	60 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, $I_C = 50$ 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	$V_{CB} = 60$ V, $I_E = 0$
$I_{EBO}$	Emitter Cutoff Current	—	—	100	nA	$V_{EB} = 5.0$ V, $I_E = 0$

\* 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,  $I_C = 50$  mA

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

