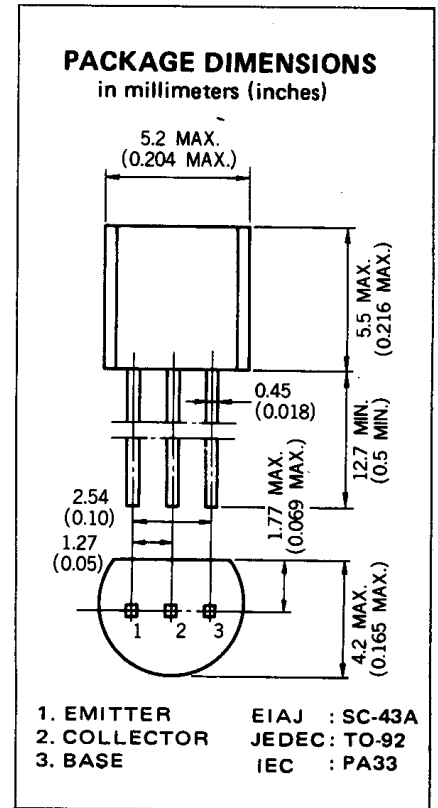


**DESCRIPTION** The 2SC2000 is designed for use in AM/RF stage of CAR RADIO and general purpose applications.

- FEATURES**
- High Electrostatic-Discharge-Resistant (E-B reverse bias)
    - ESDR 1: TYP. 500 V (C=1 000 pF)
    - ESDR 2: TYP. 1 600 V (C=100 pF)
  - Low  $f_T$ ,  $C_c \cdot r_{b'b}$  and NF.
    - $f_T$ : TYP. 70 MHz ( $V_{CE}=6.0$  V,  $I_E=-1.0$  mA)
    - $C_c \cdot r_{b'b}$ : TYP. 6.0 ps ( $V_{CB}=6.0$  V,  $I_E=-10$  mA,  $f=31.9$  MHz)
    - NF: TYP. 3.0 dB ( $V_{CE}=6.0$  V,  $I_C=1.0$  mA,  $f=1.0$  MHz,  $R_G=500 \Omega$ )

**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	60 V
$V_{CEO}$ Collector to Emitter Voltage	50 V
$V_{EBO}$ Emitter to Base Voltage	5.0 V
$I_C$ Collector Current	200 mA
$I_B$ Base Current	20 mA



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

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE}$	DC Current Gain	40	90	180	-	$V_{CE}=6.0$ V, $I_C=1.0$ mA
$C_{ob}$	Output Capacitance		3.7	4.5	pF	$V_{CB}=6.0$ V, $I_E=0$ , $f=1.0$ MHz
$f_T$	Gain Bandwidth Product	40	70		MHz	$V_{CE}=6.0$ V, $I_E=-1.0$ mA
NF	Noise Figure		3.0		dB	$V_{CE}=6.0$ V, $I_C=1.0$ mA
ESDR	Electrostatic-Discharge-Resistant		500		V	$R_G=500 \Omega$ , $f=1.0$ MHz See Test Circuit
$I_{CBO}$	Collector Cutoff Current			100	nA	$V_{CB}=60$ V, $I_E=0$
$I_{EBO}$	Emitter Cutoff Current			100	nA	$V_{EB}=5.0$ V, $I_C=0$
$V_{BE}$	Base to Emitter Voltage	600	650	700	mV	$V_{CE}=6.0$ V, $I_C=1.0$ mA
$V_{CE(sat)}$	Collector Saturation Voltage		110	300	mV	$I_C=100$ mA, $I_B=10$ mA
$V_{BE(sat)}$	Base Saturation Voltage		0.85	1.5	V	$I_C=100$ mA, $I_B=10$ mA
$C_c \cdot r_{b'b}$	Collector to Base Time Constant		6.0	15	ps	$V_{CB}=6.0$ V, $I_E=-10$ mA $f=31.9$ MHz

**Classification of  $h_{FE}$**

Rank	M	L	K
Range	40 - 80	60 - 120	90 - 180

$h_{FE}$  Test Conditions :  $V_{CE}=6.0$  V,  $I_C=1.0$  mA