

**DESCRIPTION** The 2SB733 is designed for use in driver and output stages of audio frequency amplifiers.

- FEATURES**
- High Total Power Dissipation  $P_T : 1.0 \text{ W}$  ( $T_a = 25^\circ \text{C}$ )
  - High D.C. Current Gain  $h_{FE} : 300 \text{ TYP.}$  ( $I_C = -100 \text{ mA}$ )
  - Low Collector Saturation Voltage  
 $V_{CE(sat)} : -0.27 \text{ V TYP.}$  ( $I_C = -1.0 \text{ A}$ )
  - Complementary to the NEC 2SD773 NPN Transistor.

## ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature . . . . .  $-55$  to  $+150^\circ \text{C}$

Junction Temperature . . . . .  $150^\circ \text{C}$  Maximum

Maximum Power Dissipation ( $T_a = 25^\circ \text{C}$ )

Total Power Dissipation . . . . .  $1.0 \text{ W}$

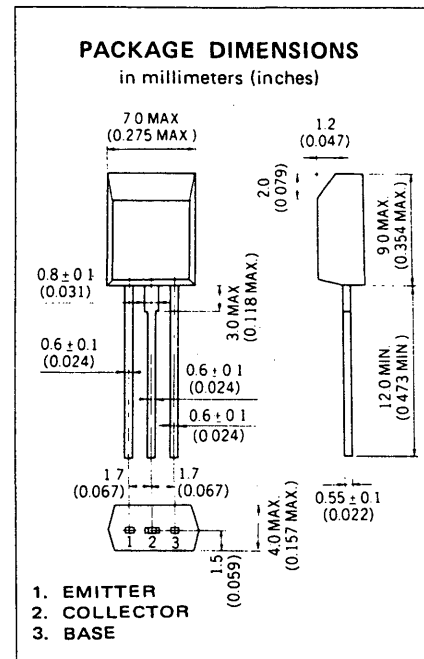
Maximum Voltages and Current ( $T_a = 25^\circ \text{C}$ )

$V_{CBO}$  Collector to Base Voltage . . . . .  $-20 \text{ V}$

$V_{CEO}$  Collector to Emitter Voltage . . . . .  $-16 \text{ V}$

$V_{EBO}$  Emitter to Base Voltage . . . . .  $-6.0 \text{ V}$

$I_C$  Collector Current . . . . .  $-1.0 \text{ A}$



## ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ \text{C}$ )

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}$	DC Current Gain	135	300	600	—	$V_{CE} = -2.0 \text{ V}, I_C = -100 \text{ mA}$
$h_{FE2}$	DC Current Gain	100			—	$V_{CE} = -1.0 \text{ V}, I_C = -1.0 \text{ A}$
$f_T$	Gain Bandwidth Product	50			MHz	$V_{CE} = -2.0 \text{ V}, I_E = 10 \text{ mA}$
$C_{ob}$	Output Capacitance		27	60	pF	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$
$I_{CBO}$	Collector Cutoff Current			-100	nA	$V_{CB} = -16 \text{ V}, I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			-100	nA	$V_{EB} = -6.0 \text{ V}, I_C = 0$
$V_{BE}$	Base to Emitter Voltage	-0.55	-0.60	-0.65	V	$V_{CE} = -6.0 \text{ V}, I_C = -5.0 \text{ mA}$
$V_{CE(sat)}$	Collector Saturation Voltage		-0.27	-0.40	V	$I_C = -1.0 \text{ A}, I_B = -50 \text{ mA}$
$V_{BE(sat)}$	Base Saturation Voltage		-0.94	-1.20	V	$I_C = -1.0 \text{ A}, I_B = -50 \text{ mA}$

## Classification of $h_{FE1}$

Rank	L <sub>2</sub>	K <sub>3</sub>	K <sub>4</sub>	U <sub>4</sub>	U <sub>5</sub>
Range	135 — 270	200 — 320	250 — 400	300 — 480	360 — 600

Test Conditions :  $V_{CE} = -2.0 \text{ V}, I_C = -100 \text{ mA}$

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

