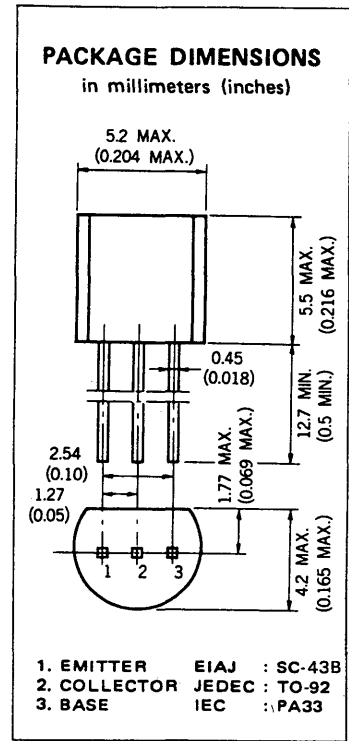


**DESCRIPTION** The 2SA988 is designed for use in driver stage of AF amplifier.

- FEATURES**
- High Voltage.  $V_{CEO} : -120 \text{ V}$
  - Low Output Capacitance.  $C_{ob} : 2.0 \text{ pF TYP. } (V_{CB} = -30 \text{ V})$
  - High  $h_{FE}$ .  $h_{FE} : 500 \text{ TYP. } (V_{CE} = -6.0 \text{ V, } I_C = -1.0 \text{ mA})$

**ABSOLUTE MAXIMUM RATINGS**

- Maximum Temperatures
- Storage Temperature . . . . .  $-55 \text{ to } +125 \text{ }^\circ\text{C}$
  - Junction Temperature . . . . .  $+125 \text{ }^\circ\text{C Maximum}$
- Maximum Power Dissipation ( $T_a = 25 \text{ }^\circ\text{C}$ )
- Total Power Dissipation . . . . .  $500 \text{ mW}$
- Maximum Voltages and Currents ( $T_a = 25 \text{ }^\circ\text{C}$ )
- $V_{CBO}$  Collector to Base Voltage . . . . .  $-120 \text{ V}$
  - $V_{CEO}$  Collector to Emitter Voltage . . . . .  $-120 \text{ V}$
  - $V_{EBO}$  Emitter to Base Voltage . . . . .  $-5.0 \text{ V}$
  - $I_C$  Collector Current . . . . .  $-50 \text{ mA}$
  - $I_B$  Base Current . . . . .  $-10 \text{ mA}$



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

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}$	DC Current Gain	150	500		—	$V_{CE} = -6.0 \text{ V, } I_C = -0.1 \text{ mA}$
$h_{FE2}$	DC Current Gain	200	500	800	—	$V_{CE} = -6.0 \text{ V, } I_C = -1.0 \text{ mA}$
$f_T$	Gain Bandwidth Product	50	100		MHz	$V_{CE} = -6.0 \text{ V, } I_E = 1.0 \text{ mA}$
$C_{ob}$	Output Capacitance		2.0	3.0	pF	$V_{CB} = -30 \text{ V, } I_E = 0, f = 1.0 \text{ MHz}$
$I_{CBO}$	Collector Cutoff Current			-50	nA	$V_{CB} = -120 \text{ V, } I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			-50	nA	$V_{EB} = -5.0 \text{ V, } I_C = 0$
$V_{BE}$	Base to Emitter Voltage	-0.55	-0.61	-0.65	V	$V_{CE} = -6.0 \text{ V, } I_C = -1.0 \text{ mA}$
$V_{CE(sat)}$	Collector Saturation Voltage		-0.09	-0.30	V	$I_C = -10 \text{ mA, } I_B = -1.0 \text{ mA}$

**Classification of  $h_{FE2}$**

Rank	P	F	E
Range	200 - 400	300 - 600	400 - 800

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

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

