

PNP SILICON TRANSISTOR

2SA988

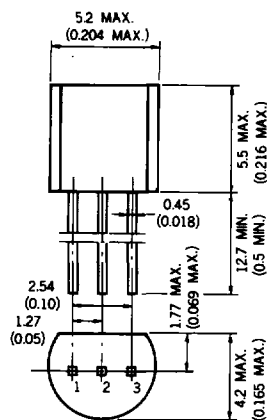
DESCRIPTION The 2SA988 is designed for use in driver stage of AF amplifier.

- FEATURES**
- High Voltage. $V_{CE0} : -120 \text{ V}$
 - 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 to +125 °C
Junction Temperature	+125 °C Maximum
Maximum Power Dissipation ($T_a = 25 \text{ °C}$)	
Total Power Dissipation	500 mW
Maximum Voltages and Currents ($T_a = 25 \text{ °C}$)	
V_{CBO} Collector to Base Voltage	-120 V
V_{CEO} Collector to Emitter Voltage	-120 V
V_{EBO} Emitter to Base Voltage	-5.0 V
I_C Collector Current	-50 mA
I_B Base Current	-10 mA

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER EIAJ : SC-43
2. COLLECTOR JEDEC : TO-92
3. BASE IEC : PA33

ELECTRICAL CHARACTERISTICS ($T_a = 25 \text{ °C}$)

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	$V_{CE} = -6.0 \text{ V, } I_C = -1.0 \text{ mA}$
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_{CEO}	Collector Cutoff Current			-1.0	μA	$V_{CE} = -100 \text{ V, } R_{BE} = \infty$
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	$I_C = -10 \text{ mA, } I_B = -1.0 \text{ mA}$

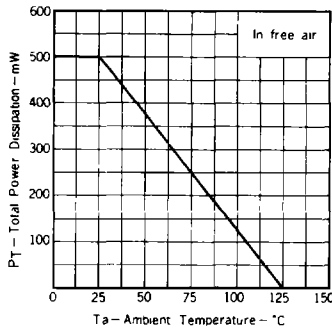
Classification of h_{FE2}

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

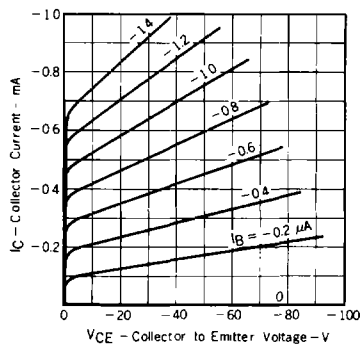
h_{FE} Test Conditions : $V_{CE} = -6.0 \text{ V, } I_C = -1.0 \text{ mA}$

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

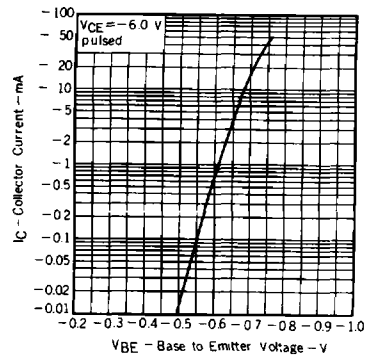
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

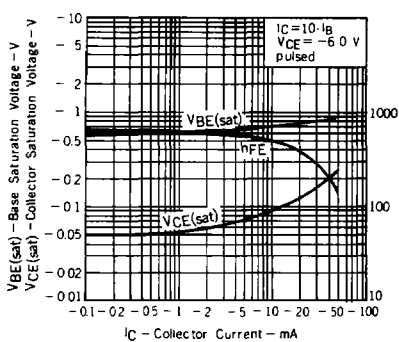


COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE

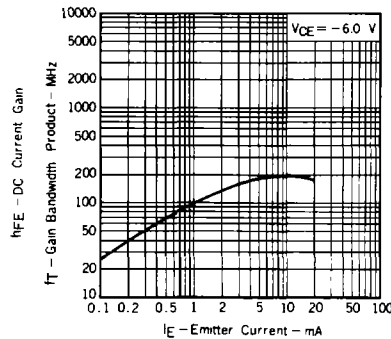


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COLLECTOR AND BASE SATURATION VOLTAGE, DC CURRENT GAIN vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

