

PNP SILICON POWER TRANSISTOR

2SA1142

DESCRIPTION The 2SA1142 is designed for use in Audio frequency power amplifier.

- FEATURES**
- High voltage. $V_{CEO} > -180$ V
 - Low C_{ob} , High f_T
 $f_T = 180$ MHz, $C_{ob} = 4.5$ pF
 - Complementary to the NEC 2SC2682 NPN Transistor.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150$ °C

Junction Temperature 150 °C Maximum

Maximum Power Dissipations

Total Power Dissipation ($T_a = 25$ °C) 1.2 W

Total Power Dissipation ($T_c = 25$ °C) 10 W

Maximum Voltages and Current ($T_a = 25$ °C)

V_{CBO} Collector to Base Voltage -180 V

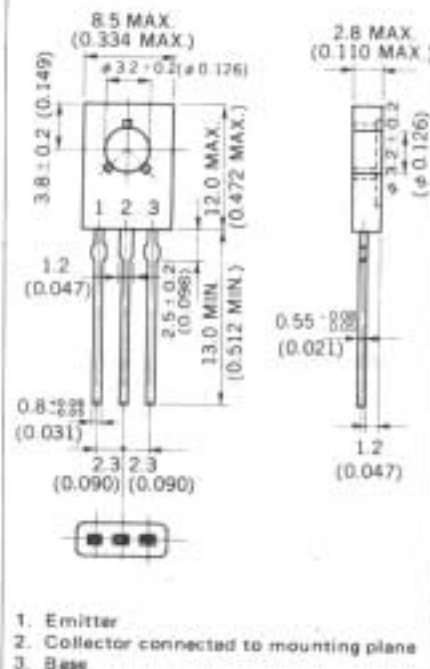
V_{CEO} Collector to Emitter Voltage -180 V

V_{EBO} Emitter to Base Voltage -5.0 V

I_C Collector Current -100 mA

PACKAGE DIMENSIONS

in millimeters (inches)



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	90	200			$V_{CE} = -5.0$ V, $I_C = -1.0$ mA*
h_{FE2}	DC Current Gain	100	200	320		$V_{CE} = -5.0$ V, $I_C = -10$ mA*
f_T	Gain Bandwidth Product		180		MHz	$V_{CE} = -10$ V, $I_C = -20$ mA
C_{ob}	Output Capacitance		4.5	7.0	pF	$V_{CB} = -10$ V, $I_E = 0$, $f = 1.0$ MHz
NF	Noise Figure		4.0		dB	$V_{CE} = -10$ V, $I_C = -1.0$ mA, $R_g = 10$ k Ω , $f = 1.0$ kHz
I_{CBO}	Collector Cutoff Current			-1.0	μ A	$V_{CB} = -180$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			-1.0	μ A	$V_{EB} = -3.0$ V, $I_C = 0$
$V_{CE(sat)}$	Collector Saturation Voltage	-0.15	-0.5		V	$I_C = -50$ mA, $I_B = -5.0$ mA*
$V_{BE(sat)}$	Base Saturation Voltage	-0.8	-1.5		V	$I_C = -50$ mA, $I_B = -5.0$ mA*

*Pulse Test : $PW \leq 350$ μ s, Duty Cycle ≤ 2 %

Classification of h_{FE2}

Rank	Q	P
Range	100 to 200	160 to 320

Test Conditions : $V_{CE} = -5.0$ V, $I_C = -10$ mA