

# 2SA1530A

FOR LOW FREQUENCY AMPLIFY APPLICATION  
SILICON PNP EPITAXIAL TYPE(Ultra super mini type)

## DESCRIPTION

2SA1530A is a super mini package resin sealed silicon PNP epitaxial transistor, It is designed for low frequency voltage application.

## FEATURE

- Small collector to emitter saturation voltage.  
VCE(sat)=-0.3Vmax (@Ic=-100mA, IB=-10mA)
- Excellent linearity of DC forward gain.
- Super mini package for easy mounting

## APPLICATION

For Hybrid IC,small type machine low frequency voltage Amplify application.

## MAXIMUM RATINGS (Ta=25°C)

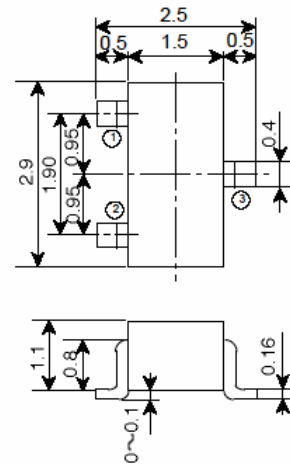
Symbol	Parameter	Ratings	Unit
V <sub>CBO</sub>	Collector to Base voltage	-60	V
V <sub>CEO</sub>	Collector to Emitter voltage	-50	V
V <sub>EBO</sub>	Emitter to Base voltage	-6	V
I <sub>O</sub>	Collector current	-150	mA
P <sub>c</sub>	Collector dissipation	200	mW
T <sub>j</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55~+150	°C

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to E break down voltage	V(BR) <sub>CEO</sub>	I <sub>C</sub> = -100 μA, R <sub>BE</sub> = ∞	-50	-	-	V
Collector cut off current	I <sub>CBO</sub>	V <sub>CB</sub> = -60V, I <sub>E</sub> = 0mA	-	-	-0.1	μA
Emitter cut off current	I <sub>EBO</sub>	V <sub>EB</sub> = -4V, I <sub>C</sub> = 0mA	-	-	-0.1	μA
DC forward current gain	hFE	V <sub>CE</sub> = -6V, I <sub>C</sub> = -1mA	120	-	560	-
DC forward current gain	hFE	V <sub>CE</sub> = -6V, I <sub>C</sub> = -0.1mA	70	-	-	-
C to E Saturation Voltage	VCE(sat)	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA	-	-	-0.3	V
Gain bandwidth product	fT	V <sub>CE</sub> = -6V, I <sub>E</sub> = 10mA	-	200	-	MHz
Collector output capacitance	Cob	V <sub>CB</sub> = -6V, I <sub>E</sub> = 0mA, f=1MHz	-	4	-	pF
Noise figure	NF	V <sub>CE</sub> = -6V, I <sub>E</sub> = 0.3mA, f=100Hz, R <sub>G</sub> =10k Ω	-	-	20	dB

## OUTLINE DRAWING

Unit: mm



JEITA: SC-59

## TERMINAL CONNECTER

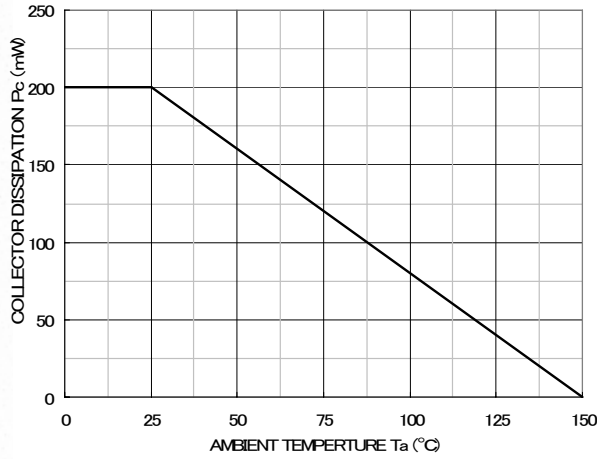
- ①: BASE
- ②: EMITTER
- ③: COLLECTOR

※) It shows hFE classification in below table.

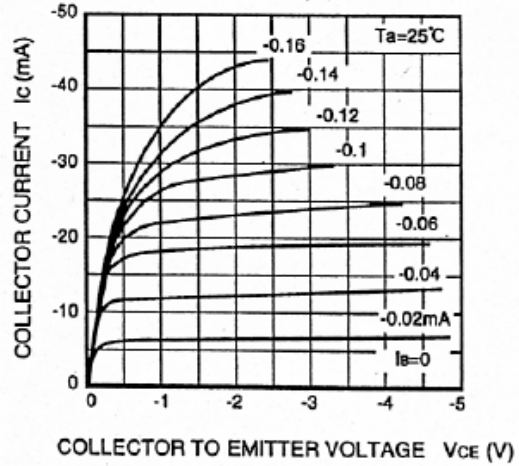
Item	Q	R	S
hFE Item	120~270	180~390	270~560

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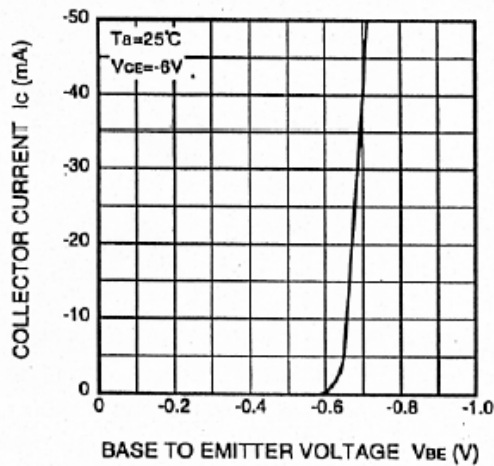
COLLECTOR DISSIPATION VS.AMBIENT TEMPERATURE



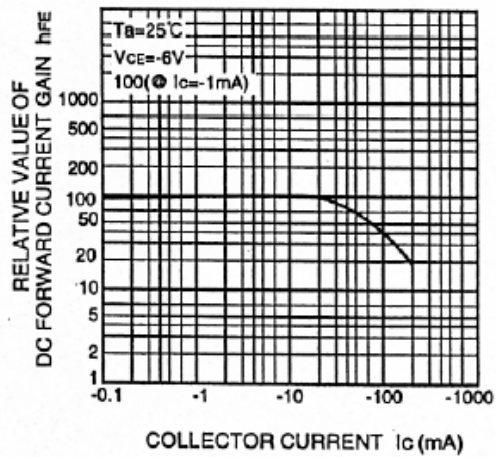
COMMON EMITTER OUTPUT



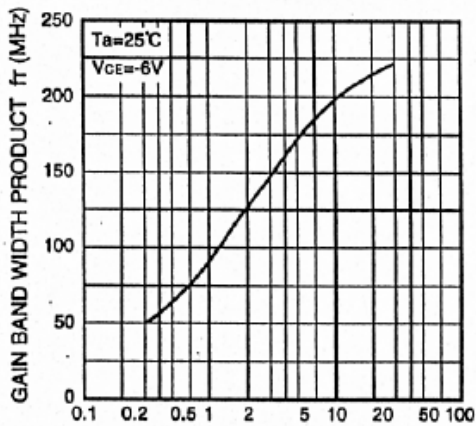
COMMON EMITTER TRANSFER



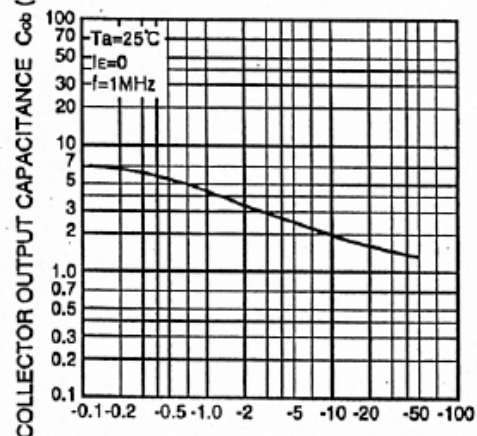
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



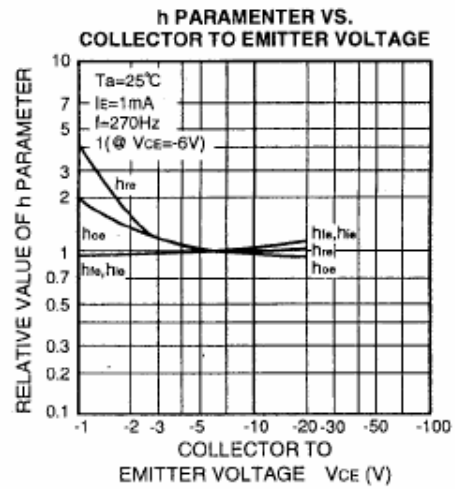
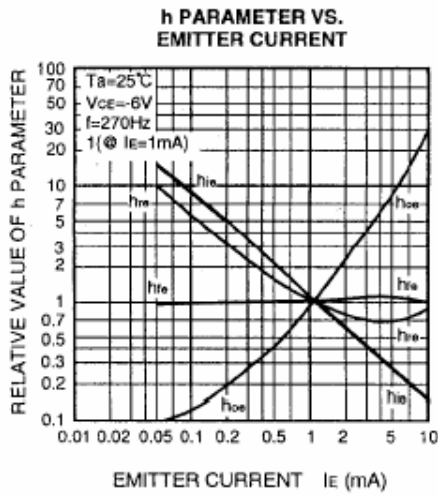
GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



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**COMMON EMITTER h PARAMETER (TYPICAL VALUE)**

Symbol	Parameter	Test conditions	Limits	Unit
$h_{ie}$	Closed loop small signal input impedance	$T_a=25^\circ\text{C}$	7.0	k $\Omega$
$h_{re}$	Open loop small signal reverse voltage amplification factor		0.1	$\times 10^{-3}$
$h_{fe}$	Closed loop small signal forward current amplification factor	$I_E=1\text{mA}$	250	—
$h_{oe}$	Open loop small signal output admittance	$f=270\text{Hz}$	18	$\mu\text{S}$



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