

〈SMALL-SIGNAL TRANSISTOR〉

2SA1235FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON PNP EPITAXIAL TYPE(mini type)**DESCRIPTION**

2SA1235 is a mini package resin sealed
silicon PNP epitaxial transistor,
It is designed for low frequency voltage application.

FEATURE

- Small collector to emitter saturation voltage.
 $V_{CE(sat)} = -0.3V \text{ max} (@I_C = -100mA, I_B = -10mA)$
- Excellent linearity of DC forward gain.
- Super mini package for easy mounting

APPLICATION

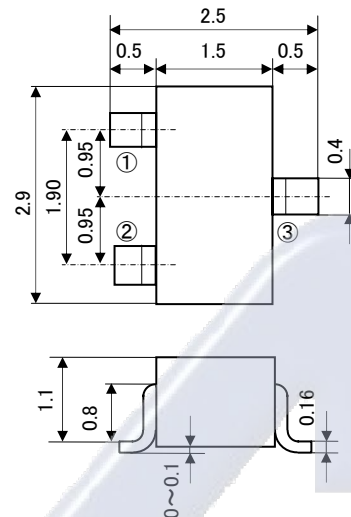
For Hybrid IC, small type machine low frequency voltage
Amplify application.

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	-50	V
V_{CEO}	Collector to Emitter voltage	-50	V
V_{EBO}	Emitter to Base voltage	-6	V
I_O	Collector current	-200	mA
P_c	Collector dissipation	200	mW
T_j	Junction temperature	+150	$^\circ\text{C}$
T_{stg}	Storage temperature	-55 ~ +150	$^\circ\text{C}$

OUTLINE DRAWING

Unit: mm



JEITA: SC-59

JEDEC: Similar to TO-236

TERMINAL CONNECTER

- ①: BASE
②: EMITTER
③: COLLECTOR

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

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to E break down voltage	$V(BR)_{CEO}$	$I_C = -100 \mu A, R_{BE} = \infty$	-50	-	-	V
Collector cut off current	I_{CBO}	$V_{CB} = -50V, I_E = 0mA$	-	-	-0.1	μA
Emitter cut off current	I_{EBO}	$V_{EB} = -6V, I_C = 0mA$	-	-	-0.1	μA
DC forward current gain	hFE	$V_{CE} = -6V, I_C = -1mA$ ※	150	-	800	
DC forward current gain	hFE	$V_{CE} = -6V, I_C = -0.1mA$	90	-	-	
C to E Saturation Voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$	-	-	-0.3	V
Gain bandwidth product	fT	$V_{CE} = -6V, I_E = 10mA$	-	200	-	MHz
Collector output capacitance	Cob	$V_{CB} = -6V, I_E = 0, f = 1MHz$	-	4	-	pF
Noise figure	NF	$V_{CE} = -6V, I_E = 0.3mA, f = 100Hz, R_G = 10k \Omega$	-	-	20	dB

※) It shows hFE classification in below table.

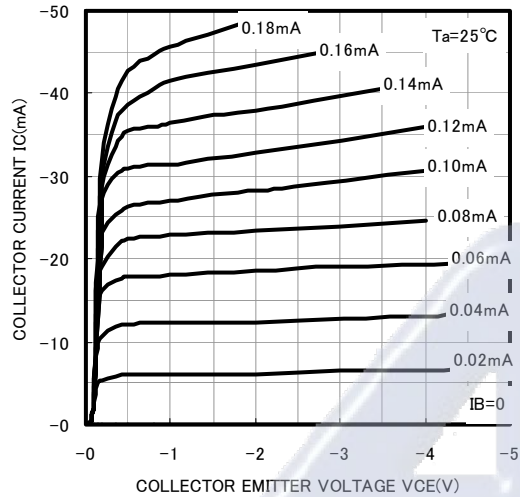
Item	E	F	G
h F E Item	150~300	250~500	400~800

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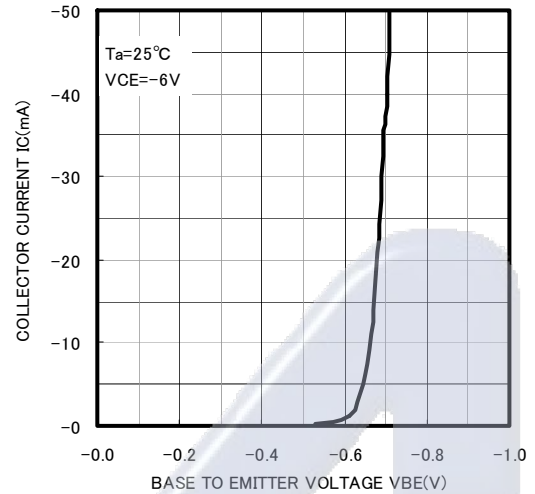
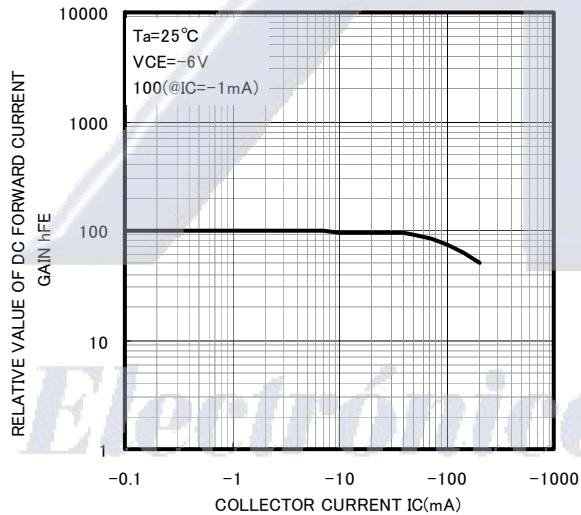
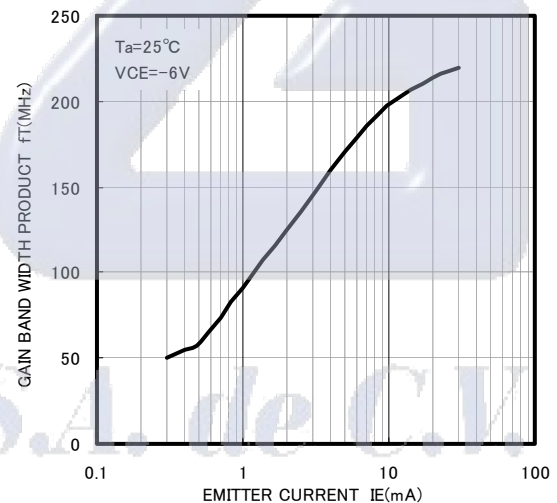
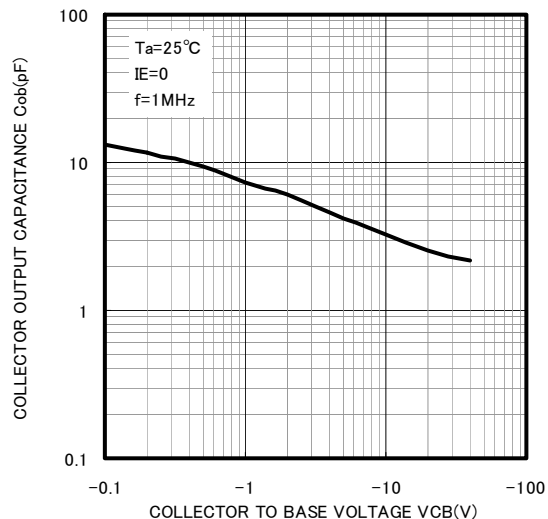
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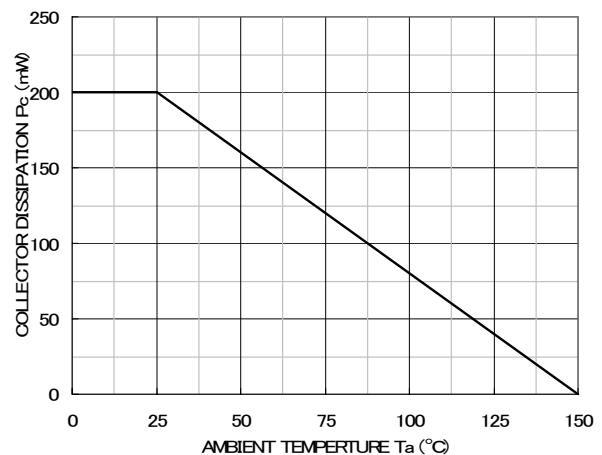
COMMON EMITTER OUTPUT



COMMON EMITTER TRANSFER

DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENTGAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENTCOLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE

COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE

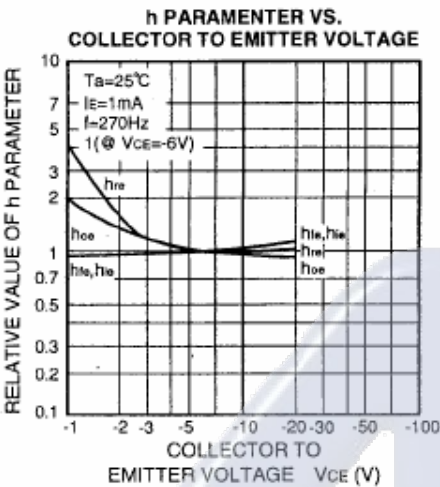
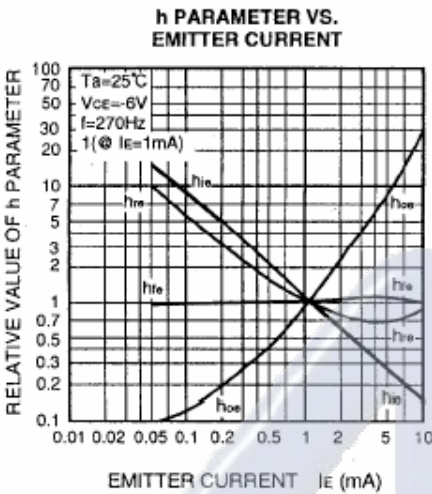


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COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
h_{ie}	Closed loop small signal input impedance	$T_a=25^\circ\text{C}$ $V_{CE}=-6\text{V}$ $I_E=1\text{mA}$ $f=270\text{Hz}$	7.0	k Ω
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		250	—
h_{oe}	Open loop small signal output admittance		18	μS

Electr3nica S.A. de C.V.



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