

<Transistor>

# 2SA1989

For Low Frequency Amplify Application  
Silicon PNP Epitaxial Type Ultra Super Mini

## DESCRIPTION

2SA1989 is a super mini resin sealed silicon PNP epitaxial type transistor. It is designed for low frequency voltage amplify application.

## FEATURE

- Small collector to emitter saturation voltage.  
 $V_{CE(sat)} = -0.3V$  max (@  $I_C = -30mA, I_B = -1.5mA$ )
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

## APPLICATION

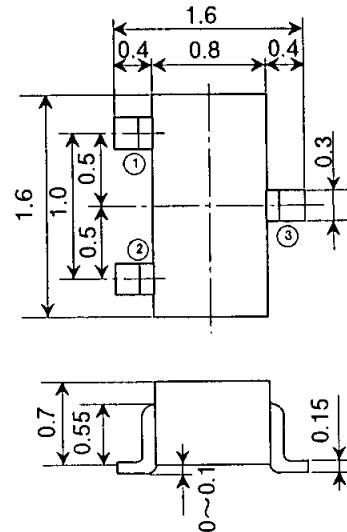
For hybrid IC, small type machine low frequency voltage amplify application.

## MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
Vcbo	Collector to Base voltage	-50	V
Vebo	Emitter to Base voltage	-6	V
Vceo	Collector to Emitter voltage	-50	V
Ic	Collector current	-100	mA
Pc	Collector dissipation (Ta=25°C)	125	mW
Tj	Junction temperature	+125	°C
Tstg	Storage temperature	-55 to +125	°C

## OUTLINE DRAWING

UNIT:mm



Terminal Connector

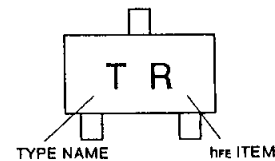
- ① : Base
- ② : Emitter
- ③ : Collector

EIAJ : —  
JEDEC : —

Note)

The dimension without tolerance represent central value.

## MARKING



## ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
V(BR)CEO	C to E break down voltage	$I_C = -100 \mu A, R_{BE} = \infty$	-50			V
Icbo	Collector cut off current	$V_{CB} = -50V, I_E = 0$			-0.5	$\mu A$
Iebo	Emitter cut off current	$V_{EB} = -4V, I_C = 0$			-0.5	$\mu A$
hFE *	DC forward current gain	$V_{CE} = -6V, I_C = -1mA$	120		820	—
hFE	DC forward current gain	$V_{CE} = -6V, I_C = -0.1mA$	70			—
VCE(sat)	C to E saturation voltage	$I_C = -30mA, I_B = -1.5mA$			-0.3	V
fr	Gain band width product	$V_{CE} = -6V, I_E = 10mA$		200		MHz
Cob	Collector output capacitance	$V_{CB} = -6V, I_E = 0, f = 1MHz$		2.5		pF

ITEM	Q	R	S	T
hFE	120~270	180~390	270~560	390~820

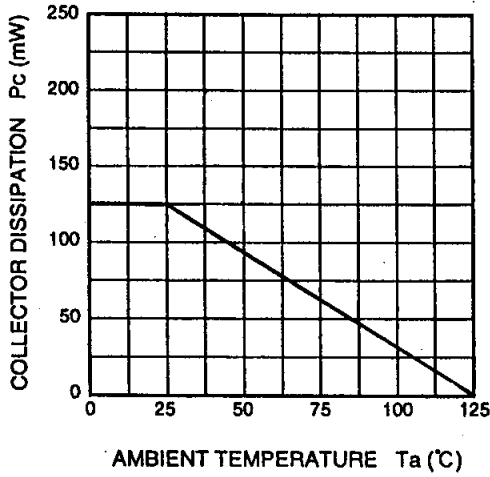
(Transistor)

# 2SA1989

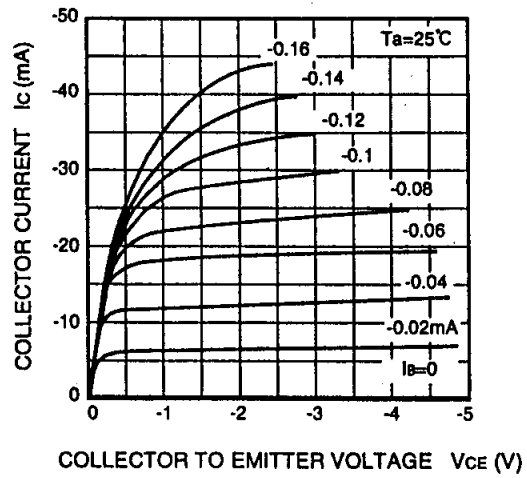
For Low Frequency Amplify Application  
Silicon PNP Epitaxial Type Ultra Super Mini

## TYPICAL CHARACTERISTICS

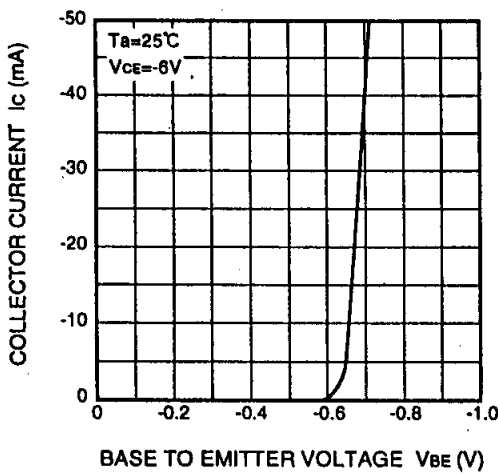
COLLECTOR DISSIPATION  
VS. AMBIENT TEMPERATURE



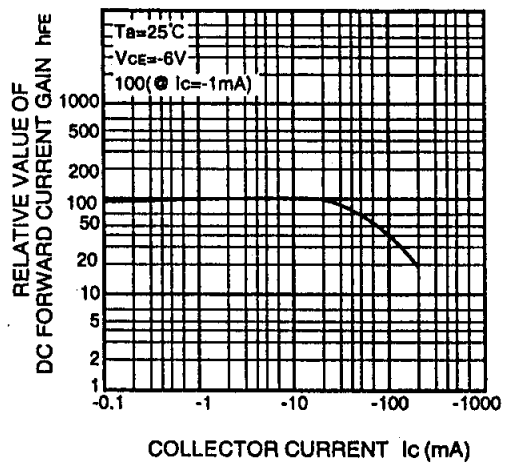
COMMON EMITTER OUTPUT



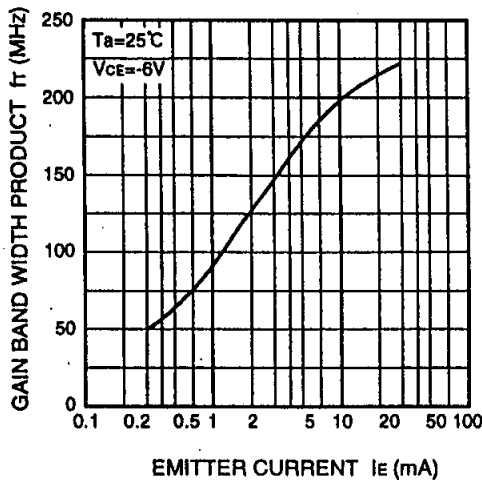
COMMON EMITTER TRANSFER



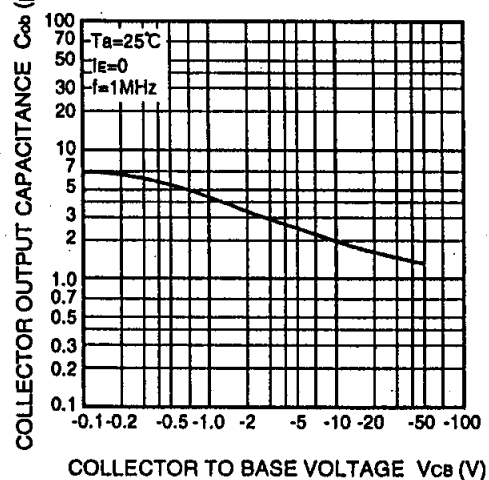
DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT  
VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE  
VS. COLLECTOR TO BASE VOLTAGE



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