

<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

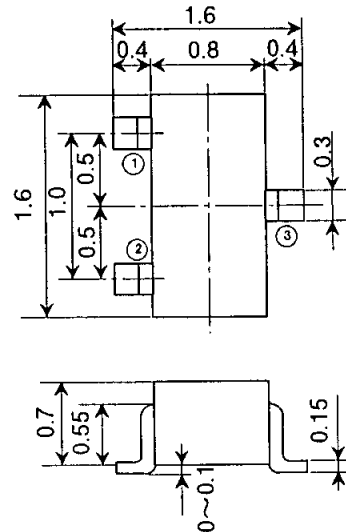
For hybrid IC, small type machine low frequency voltage amplify application.

MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
V _{CB0}	Collector to Base voltage	-50	V
V _{EB0}	Emitter to Base voltage	-6	V
V _{CE0}	Collector to Emitter voltage	-50	V
I _C	Collector current	-100	mA
P _C	Collector dissipation (Ta=25°C)	125	mW
T _J	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55 to +125	°C

OUTLINE DRAWING

UNIT:mm



Terminal Connector

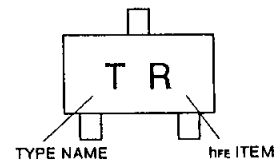
- ① : Base
- ② : Emitter
- ③ : Collector

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 μA, R _{BE} = ∞	-50			V
I _{CB0}	Collector cut off current	V _{CB} = -50V, I _E = 0			-0.5	μA
I _{EB0}	Emitter cut off current	V _{EB} = -4V, I _C = 0			-0.5	μA
h _{FE} *	DC forward current gain	V _{CE} = -6V, I _C = -1mA	120		820	—
h _{FE}	DC forward current gain	V _{CE} = -6V, I _C = -0.1mA	70			—
V _{CE(sat)}	C to E saturation voltage	I _C = -30mA, I _B = -1.5mA			-0.3	V
f _r	Gain band width product	V _{CE} = -6V, I _E = 10mA		200		MHz
C _{ob}	Collector output capacitance	V _{CB} = -6V, I _E = 0, f = 1MHz		2.5		pF

ITEM	Q	R	S	T
h _{FE}	120~270	180~390	270~560	390~820

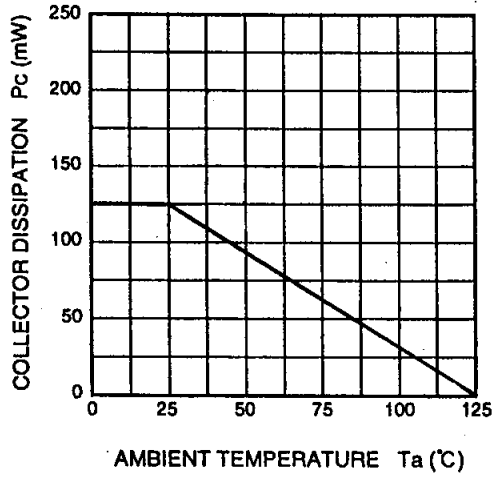
(Transistor)

2SA1989

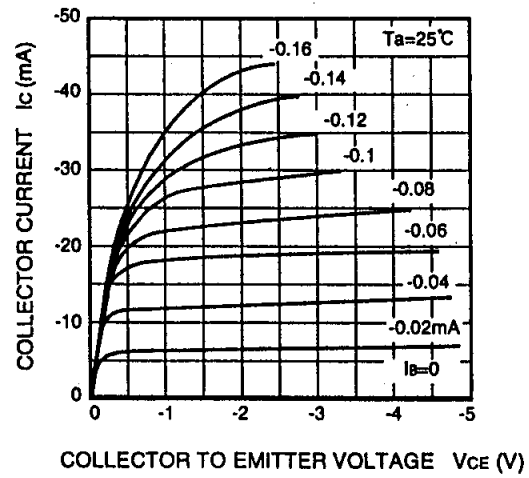
For Low Frequency Amplify Application
Silicon PNP Epitaxial Type Ultra Super Mini

TYPICAL CHARACTERISTICS

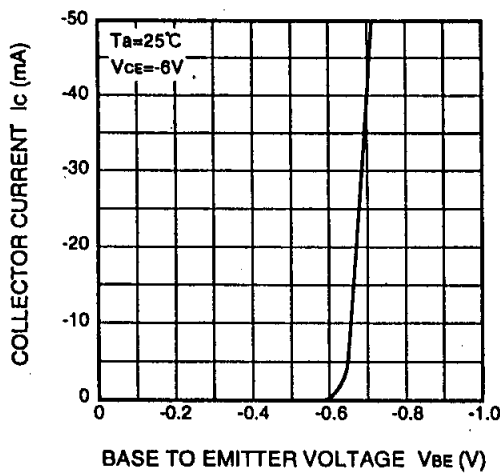
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



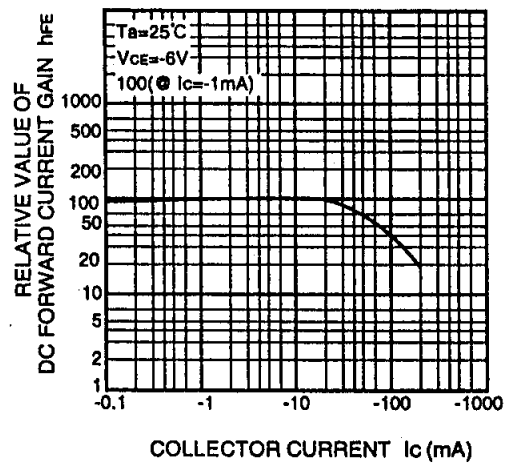
COMMON EMITTER OUTPUT



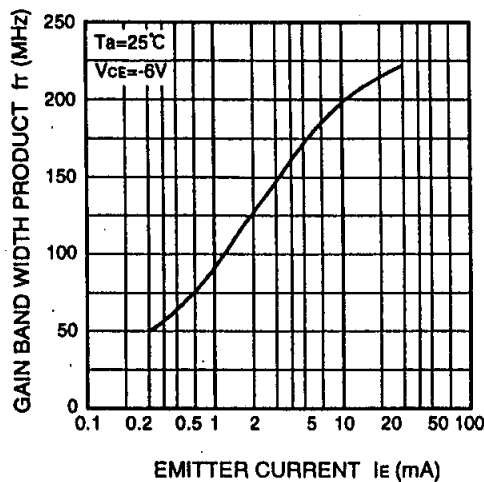
COMMON EMITTER TRANSFER



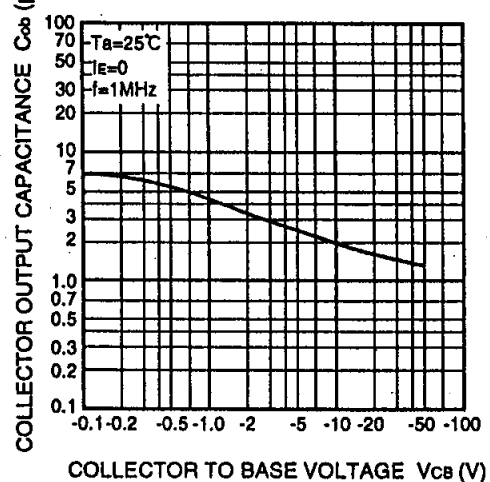
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



The logo for IDC ISAHAYA ELECTRONICS CORPORATION. It features the letters 'IDC' in a stylized blue font with a red triangle above the 'I'. To the right of 'IDC', the words 'ISAHAYA ELECTRONICS CORPORATION' are written in a black, italicized, serif font.

<http://www.idc-com.co.jp>
6-41, TSUKUBA, ISAHAYA, NAGASAKI, 854-0065, JAPAN

Keep safety in your circuit designs !

Isahaya Electronics Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

Notes regarding these materials

·These materials are intended as reference to assist out customers in the selection of the Isahaya semiconductor product best suited to the customer's application, they do not convey any license under any intellectual property rights, or any other rights, belonging to Isahaya Electronics Corporation or a third party.
·Isahaya Electronics Corporation assumes no responsibility for any damage, or infringement of any third-party rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in the materials.
·All information contained in these materials, including product data, diagrams and charts, represent information on products at the time of publication of these materials, and are subject to change by Isahaya Electronics Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Isahaya Electronics Corporation or authorized Isahaya Semiconductor product distributor for the latest product information before purchasing a product listed herein.
·The prior written approval of Isahaya Electronics Corporation is necessary to reprint or reproduce in whole or in part these materials.
·If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination. Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.
·Please contact Isahaya Electronics Corporation or an authorized Isahaya Semiconductor product distributor for further details on these materials or the products contained therein.
