

DESCRIPTION

2SA1948 is a resin sealed silicon PNP epitaxial type transistor. It is designed with high voltage, high hFE and high fr.
Complementary with 2SC5213.

FEATURE

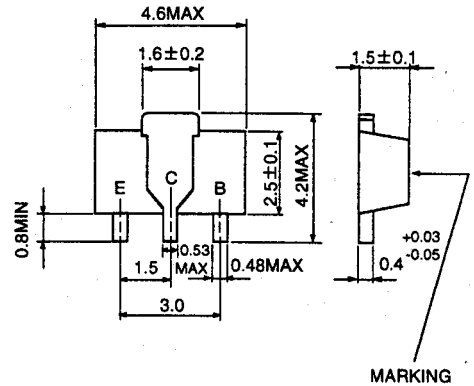
- High fr fr=200MHz typ, low Cob Cob=3.5pF typ
- Excellent linearity of DC forward current gain
- High hFE hFE=150 to 800
- Small package for mounting
- High voltage VCE0=120V
- High collector dissipation Pc=500mW

APPLICATION

Pre-drive stage of output 40 to 80W main amplifier. Final stage of tone control amplifier.

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

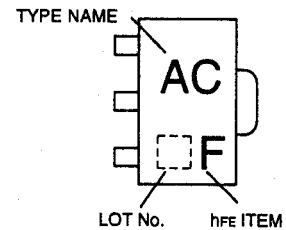
E : EMITTER
C : COLLECTOR EIAJ : SC-62
B : BASE JEDEC : -

Note)
The dimension without tolerance represent central value.

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
Vcbo	Collector to Base voltage	-120	V
Vebo	Emitter to Base voltage	-5	V
Vceo	Collector to Emitter voltage	-120	V
Ic	Collector current	-100	mA
Pc	Collector dissipation(Ta=25°C)	500	mW
Tj	Junction temperature	+150	°C
Tstg	Storage temperature	-55 to +150	°C

MARKING



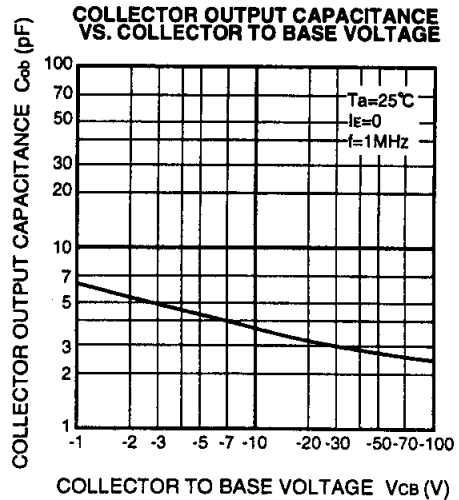
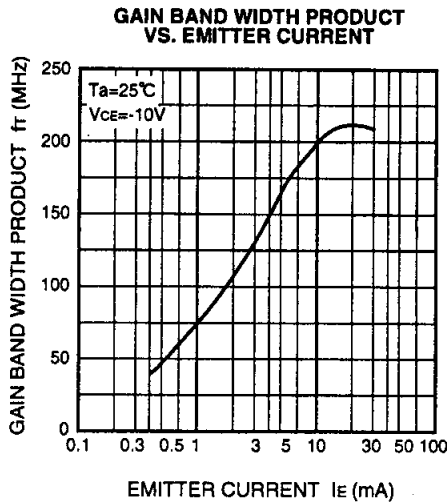
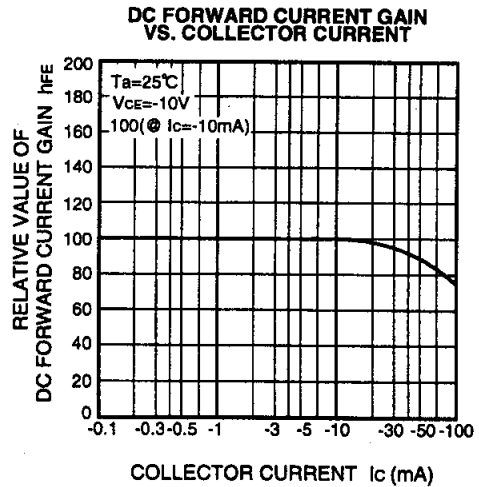
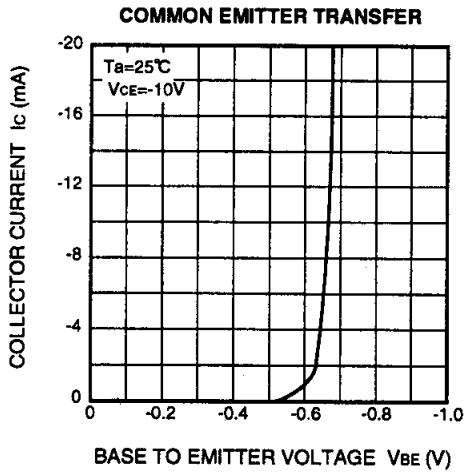
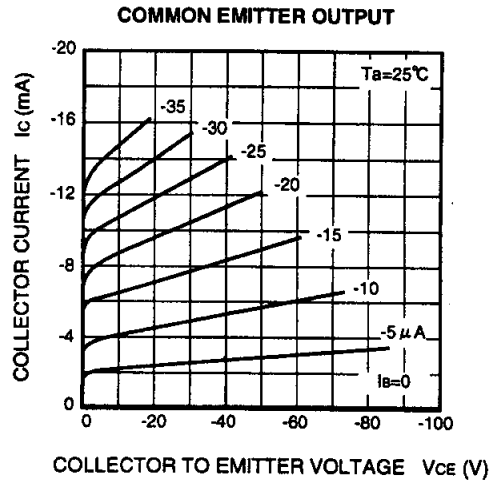
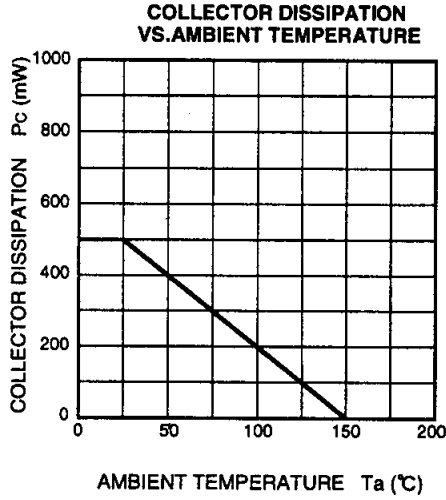
ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V(BR)CBO	C to B break down voltage	IC=-10 μA, IE=0	-120			V
V(BR)EBO	E to B break down voltage	IE=-10 μA, IC=0	-5			V
V(BR)CEO	C to E break down voltage	IC=-1mA, RE=∞	-120			V
ICBO	Collector cut off current	VCB=-100V, IE=0			-0.1	μA
IEBO	Emitter cut off current	VBE=-4V, IC=0			-0.1	μA
hFE *	DC forward current gain	VCE=-10V, IC=-10mA	150		800	—
VCE(sat)	C to E saturation voltage	IC=-50mA, IB=-2.5mA		-0.17	-0.6	V
fr	Gain band width product	VCE=-10V, IE=10mA		200		MHz
Cob	Collector output capacitance	VCB=-10V, IE=0, f=1MHz		3.5		pF

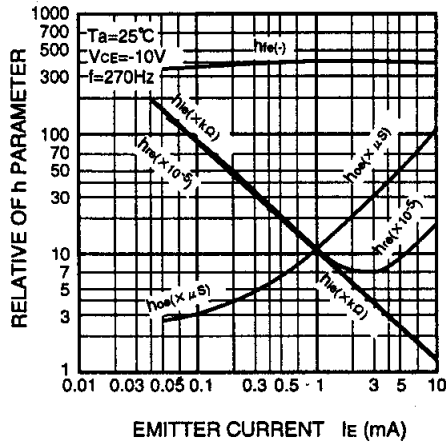
* : It shows hFE classification in right table.

Marking	ACE	ACF	ACG
hFE	150 to 300	250 to 500	400 to 800

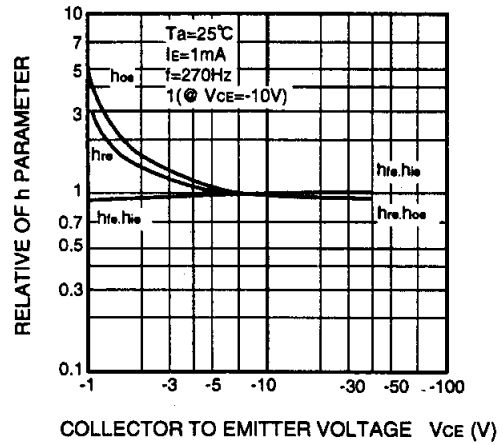
TYPICAL CHARACTERISTICS



h PARAMETER VS. EMITTER CURRENT



h PARAMETER VS. COLLECTOR TO EMITTER VOLTAGE



COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
h_{ie}	Closed loop small signal input impedance	$T_a=25^\circ\text{C}$	10.8	$\text{k}\Omega$
h_{re}	Open loop small signal reverse voltage amplification factor	$V_{CE}=-10\text{V}$	1.16	$\times 10^{-4}$
h_{fe}	Closed loop small signal forward current amplification factor	$I_E=1\text{mA}$	400	—
h_{oe}	Open loop small signal output admittance	$f=270\text{Hz}$	11.2	μS

The logo for IDC ISAHAYA ELECTRONICS CORPORATION features the letters 'IDC' in a stylized blue font with a red triangle above the 'I', followed by the company name 'ISAHAYA ELECTRONICS CORPORATION' in a bold, black, 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.
