INC6006AP1

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

INC6006AP1 is a silicon NPN transistor.

It is designed with high voltage.

FEATURE

・Small package for easy mounting.

・High voltage V_{CEO}=160V

・Low voltage VCE(sat)=0.2V(MAX)

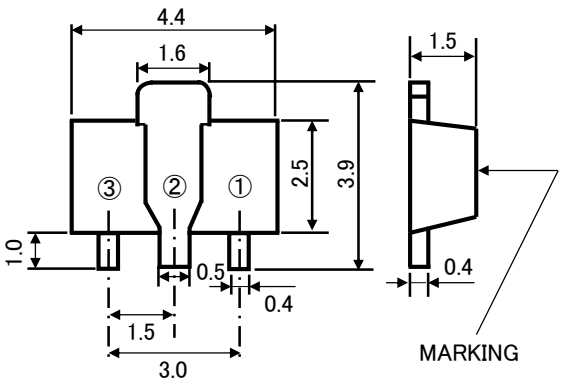
・Complementary : INA6006AP1

APPLICATION

High voltage switching.

OUTLINE DRAWING

UNIT : mm



TERMINAL CONNECTOR

①:BASE

②:COLLECTOR

③:EMITTER

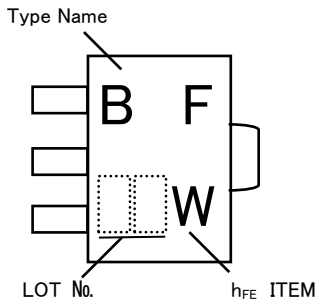
JEITA:SC-62

JEDEC:SOT-89

MAXIMUM RATING(Ta=25℃)

SYMBOL	PARAMETER	RATING	UNIT
V_{CBO}	Collector to Base voltage	180	V
V_{EBO}	Emitter to Base voltage	6	V
V_{CEO}	Collector to Emitter voltage	160	V
I_C	Collector current	100	mA
I_{CM}	Peak collector current	200	mA
P_C	Collector dissipation(Ta=25℃)	500	mW
T_j	Junction temperature	+150	℃
T_{stg}	Storage temperature	−55～+150	℃

MARKING

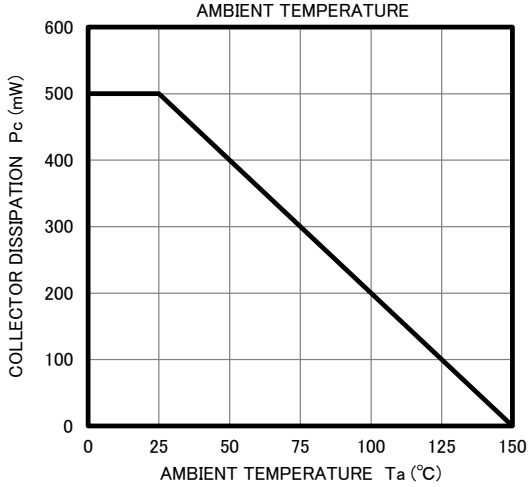


ELECTRICAL CHARACTERISTICS(Ta=25℃)

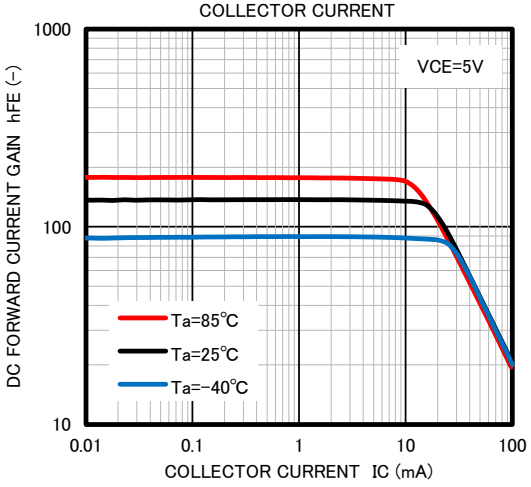
SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)CBO}$	C to B breakdown voltage	I_C=100μA, I_E=0mA	180	−	−	V
$V_{(BR)EBO}$	E to B breakdown voltage	I_E=10μA, I_C=0mA	6	−	−	V
$V_{(BR)CEO}$	C to E breakdown voltage	I_C=1mA, R_{BE}=∞	160	−	−	V
I_{CBO}	Collector cut off current	V_{CB}=120V, I_E=0mA	−	−	100	nA
I_{EBO}	Emitter cut off current	V_{EB}=4V, I_C=0mA	−	−	100	nA
h_{FE1}	DC forward current gain1	V_{CE}=5V, I_C=1mA	72	−	−	−
h_{FE2}	DC forward current gain2	V_{CE}=5V, I_C=10mA	72	−	330	−
h_{FE3}	DC forward current gain3	V_{CE}=5V, I_C=50mA	27	−	−	−
$V_{CE(sat)1}$	C to E saturation voltage1	I_C=10mA, I_B=1mA	−	−	0.15	V
$V_{CE(sat)2}$	C to E saturation voltage2	I_C=50mA, I_B=5mA	−	−	0.2	V
$V_{BE(sat)1}$	B to E saturation voltage1	I_C=10mA, I_B=1mA	−	−	1.0	V
$V_{BE(sat)2}$	B to E saturation voltage2	I_C=50mA, I_B=5mA	−	−	1.0	V
f_T	Gain bandwidth product	V_{CE}=10V, I_E=−10mA	100	−	300	MHz
Cob	Collector output capacitance	V_{CB}=10V, I_E=0A, f=1MHz	−	1.7	6	pF
Cib	Emitter input capacitance	V_{EB}=0.5V, I_C=0A, f=1MHz	−	−	20	pF

TYPICIAL CHARACTERISTICS

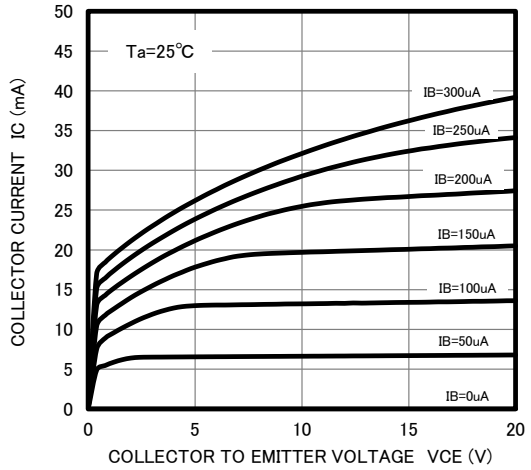
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



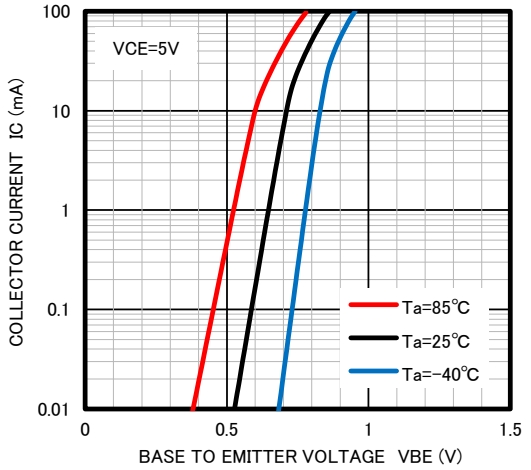
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



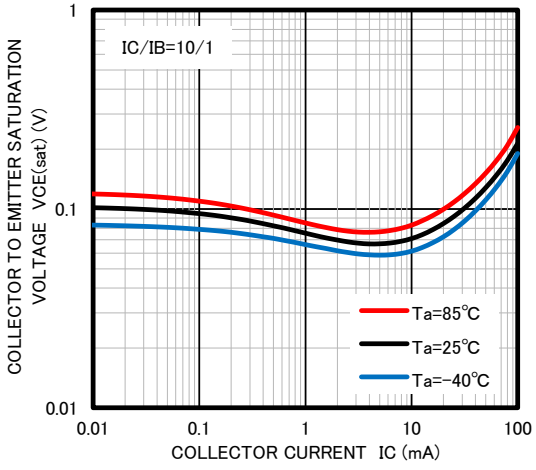
COMMON EMITTER OUTPUT



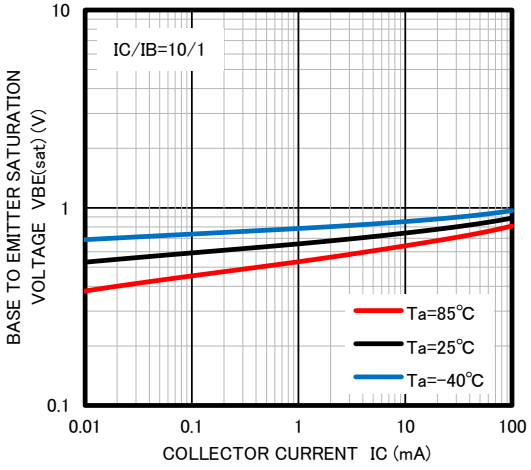
COMMON EMITTER TRANSFER



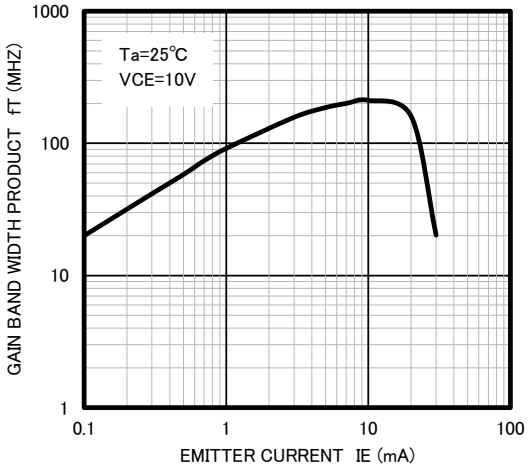
COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



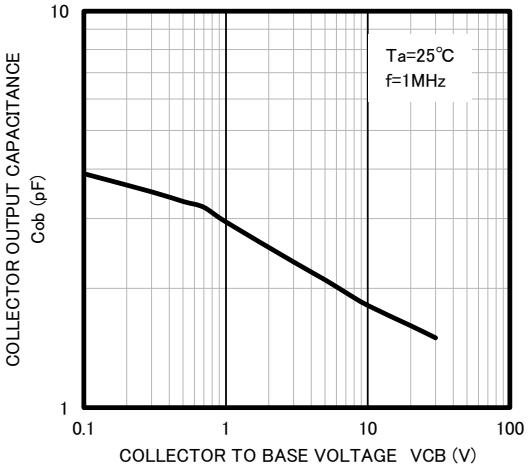
BASE TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



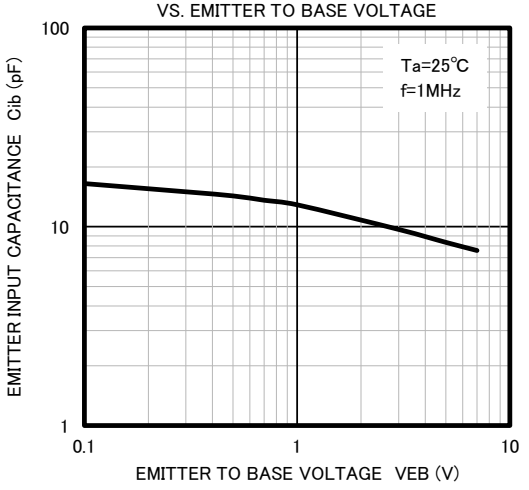
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT



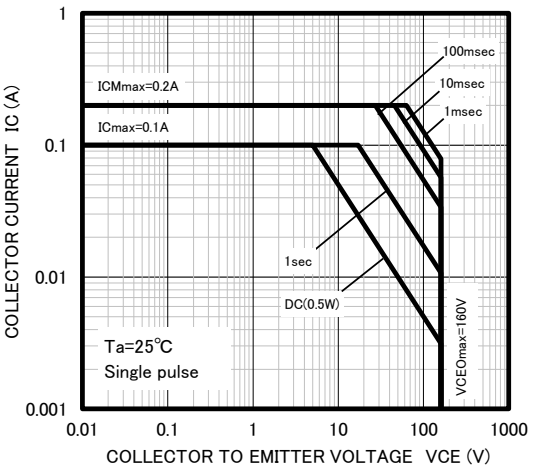
COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE



EMITTER INPUT CAPACITANCE
VS. EMITTER TO BASE VOLTAGE



ASO



Keep safety first 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 due consideration to safety when making your circuit designs, with appropriate measures such as (1) placement of substitutive, auxiliary, (2) use of non-farmable material or (3) prevention against any malfunction or mishap.

Notes regarding these materials

·These materials are intended as a reference to our customers in the selection of the ISAHAYA products best suited to the customer's application; they don't convey any license under any intellectual property rights, or any other rights, belonging ISAHAYA or third party.

·ISAHAYA Electronics Corporation assumes no responsibility for any damage, or infringement of any third party's rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in these 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 an authorized ISAHAYA products distributor for the latest product information before purchasing product listed herein.

·ISAHAYA Electronics Corporation products are not designed or manufactured for use in a device or system that is used under circumstances in which human life is potentially at stake. Please contact ISAHAYA Electronics Corporation or an authorized ISAHAYA products distributor when considering the use of a product contained herein for any specific purposes, such as apparatus or systems for transportation, vehicular, medical, aerospace, nuclear, or undersea repeater use.

·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 re-export contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.

·Please contact ISAHAYA Electronics Corporation or authorized ISAHAYA products distributor for further details on these materials or the products contained therein.