Ordering number : ENN3031A

PNP / NPN Triple Diffused Planar Silicon Transistors

2SB1133 / 2SD1666

Low-Frequency General-Purpose Amplifier Applications

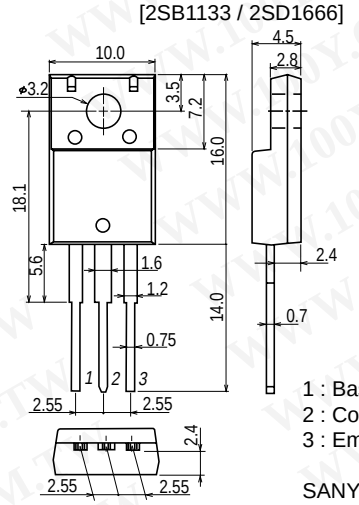
Features

- Wide ASO(Adoption of MBIT process).
- Micaless package facilitating easy mounting.
- High reliability.

勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

Package Dimensions

unit : mm
2041A



1 : Base
2 : Collector
3 : Emitter

SANYO : TO-220ML

Specifications

( ) : 2SB1133

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)60	V
Collector-to-Emitter Voltage	V_{CEO}		(–)60	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)3	A
Collector Current (Pulse)	I_{CP}		(–)8	A
Collector Dissipation	P_C		2	W
		Tc=25°C	25	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–40 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)40V, I_E=0			(-)100	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)4V, I_C=0			(-)100	μA
DC Current Gain	$h_{FE}(1)$	V_{CE}=(-)5V, I_C=(-)0.5A	*70		*280	
	$h_{FE}(2)$	V_{CE}=(-)5V, I_C=(-)3A	20			

Continued on next page.

* : The 2SB1133 / 2SD1666 are classified by 0.5A h_{FE} as follows :

Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

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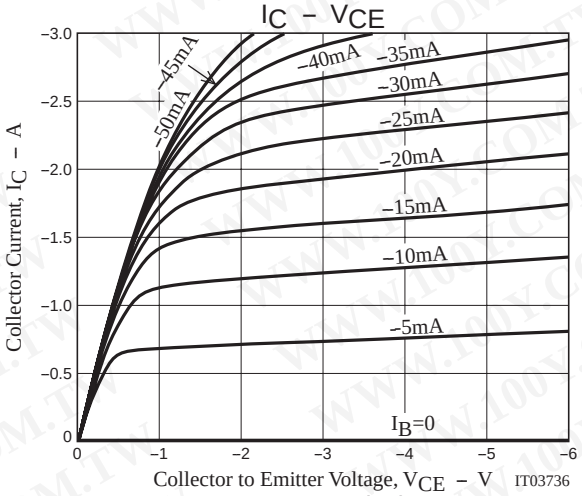
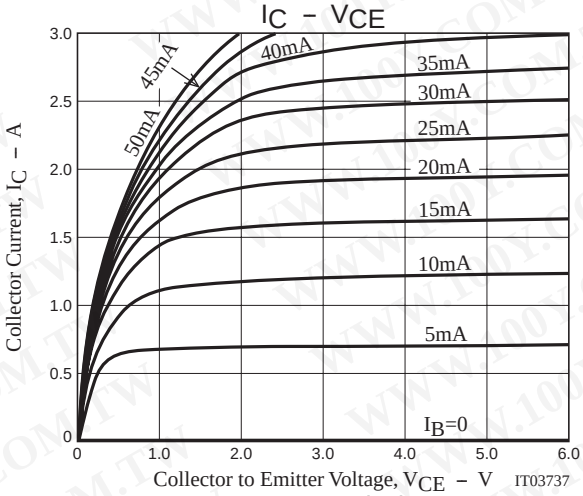
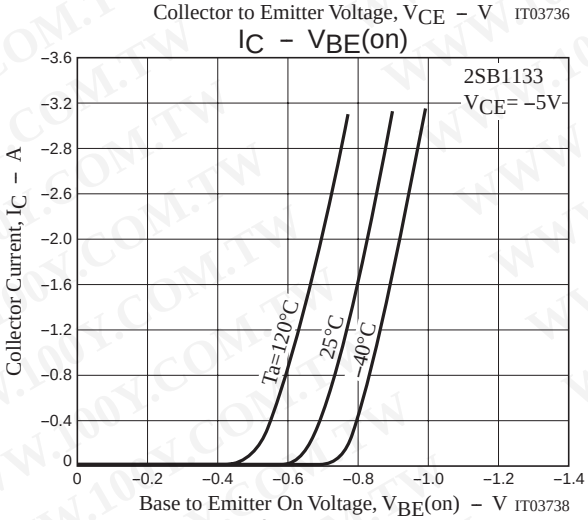
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

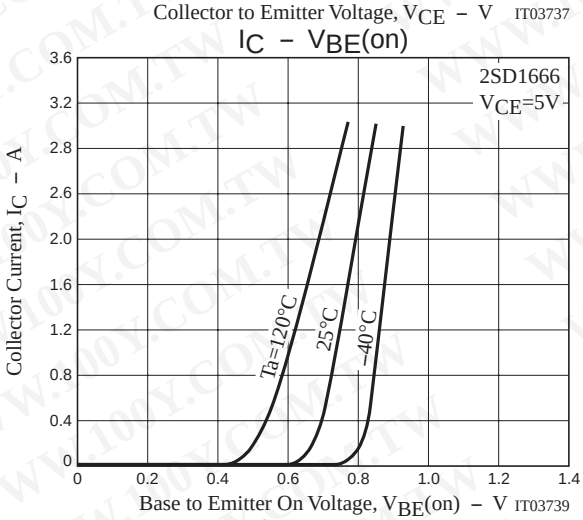
Continued from preceding page.

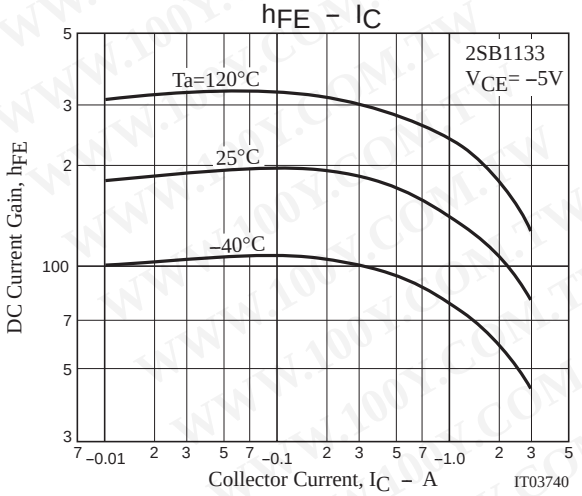
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	V_{CE}=(-)5V, I_C=(-)0.5A		(40)8		MHz
Output Capacitance	Cob	V_{CB}=(-)10V, f=1MHz		(110)60		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(-)2A, I_B=(-)0.2A		(-)0.6	(-)1	V
Base-to-Emitter Saturation Voltage	V_{BE}	V_{CE}=(-)5V, I_C=(-)0.5A		(-)0.7	(-)1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)1mA, I_E=0	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)5mA, R_{BE}=∞	(-)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)1mA, I_C=0	(-)6			V

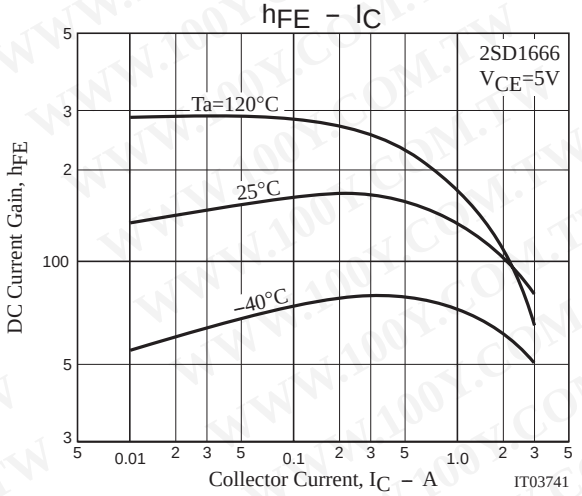


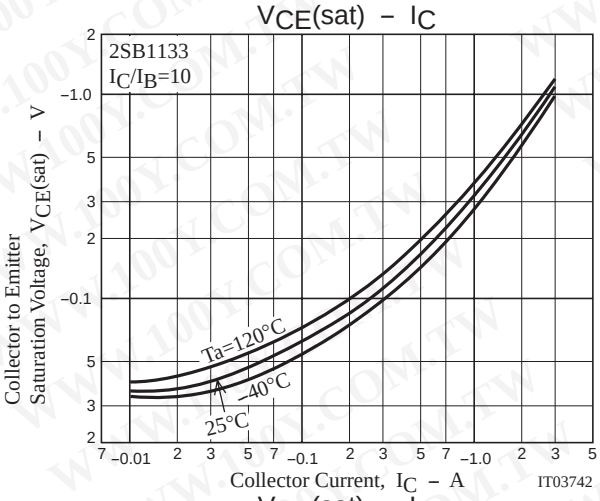


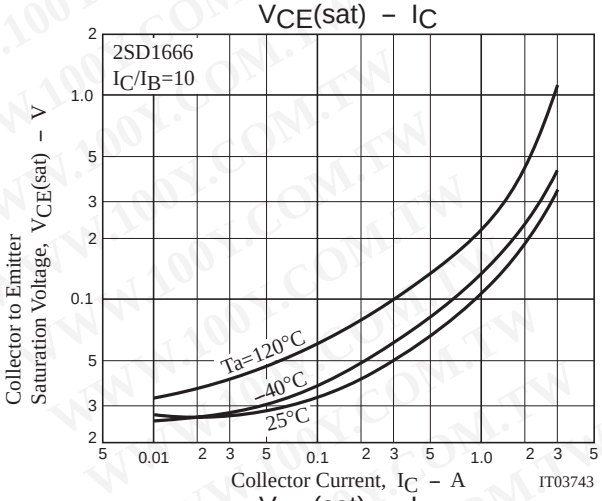


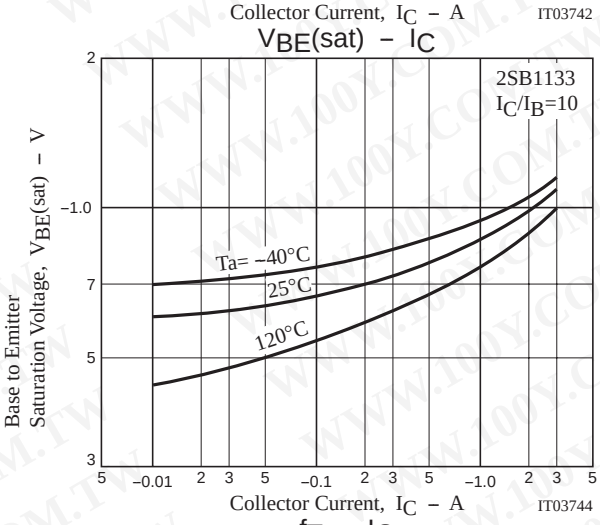


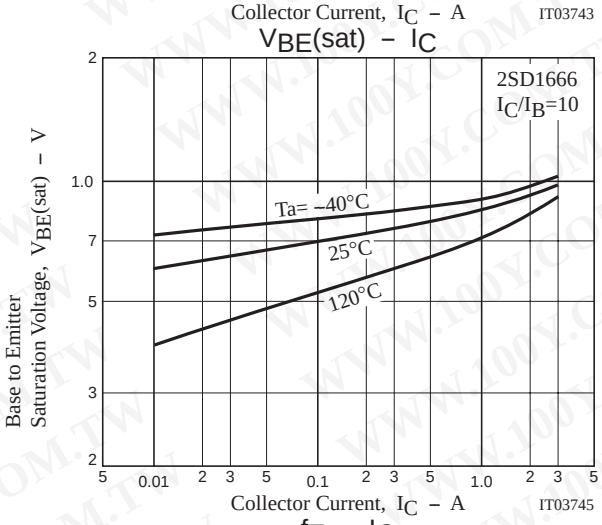


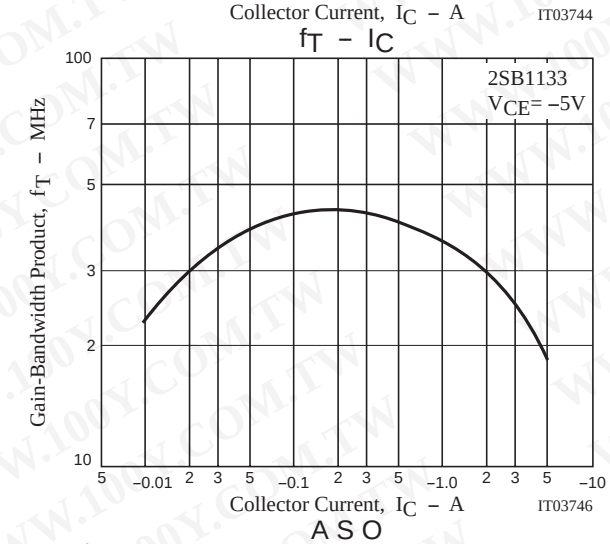


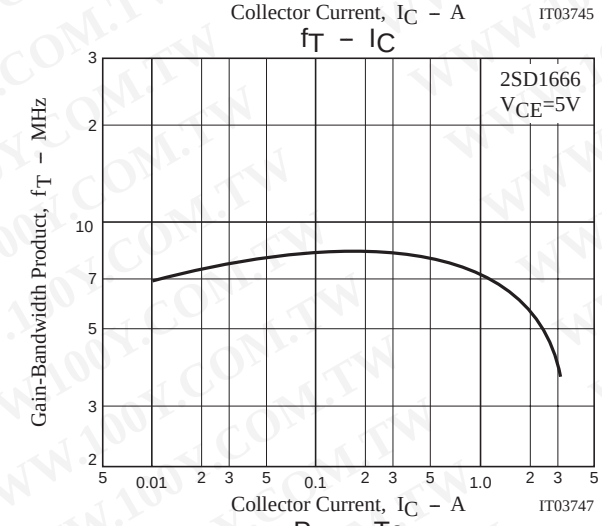

VCE(sat) – IC
2SB1133
IC/IB=10
Ta=120°C
–40°C
25°C
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT03742

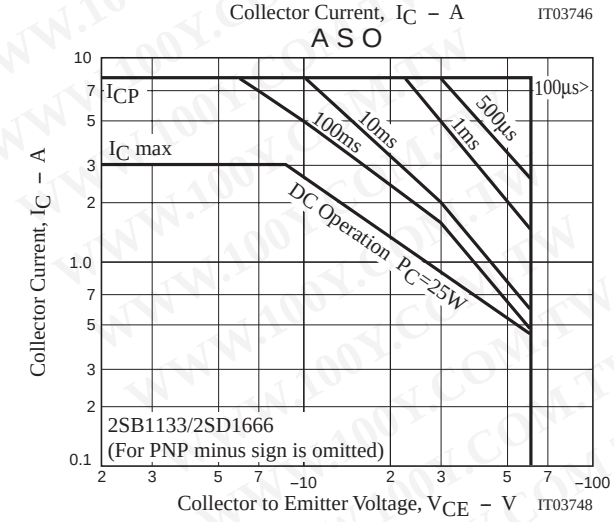

VCE(sat) – IC
2SD1666
IC/IB=10
Ta=120°C
–40°C
25°C
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT03743

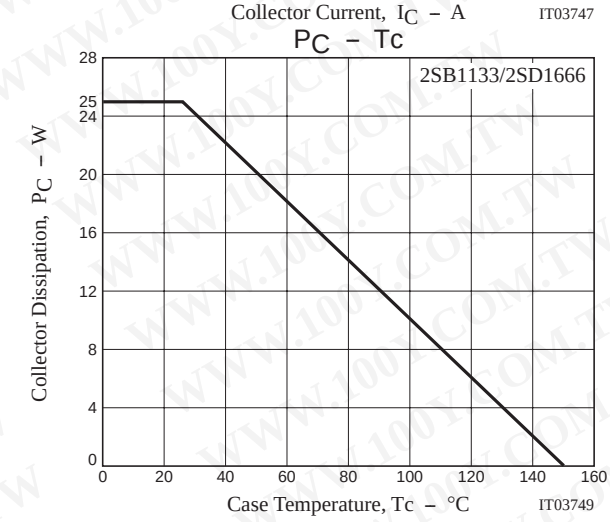

VBE(sat) – IC
2SB1133
IC/IB=10
Ta= –40°C
25°C
120°C
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT03744

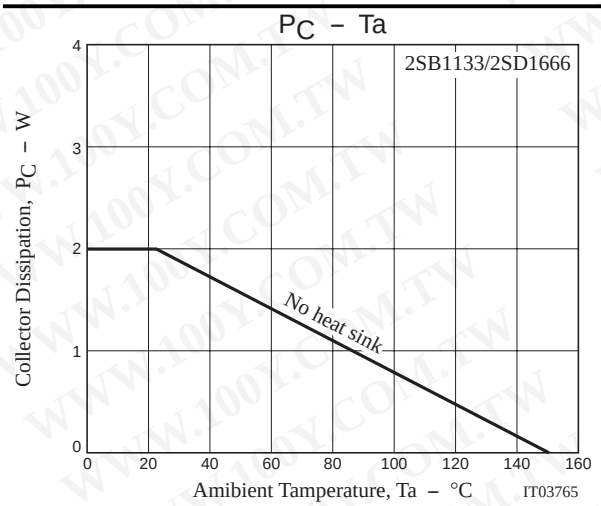

VBE(sat) – IC
2SD1666
IC/IB=10
Ta= –40°C
25°C
120°C
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT03745


fT – IC
2SB1133
VCE= –5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT03746


fT – IC
2SD1666
VCE=5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT03747


A S O
ICP
IC max
100µs>
500µs
1ms
10ms
100ms
DC Operation PC=25W
2SB1133/2SD1666
(For PNP minus sign is omitted)
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V
IT03748


PC – Tc
2SB1133/2SD1666
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT03749



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