Ordering number:ENN1334D

~~PNP~~/NPN Epitaxial Planar Silicon Transistors

~~2SA1319~~/2SC3332

High-Voltage Switching Applications

An ON Semiconductor Company

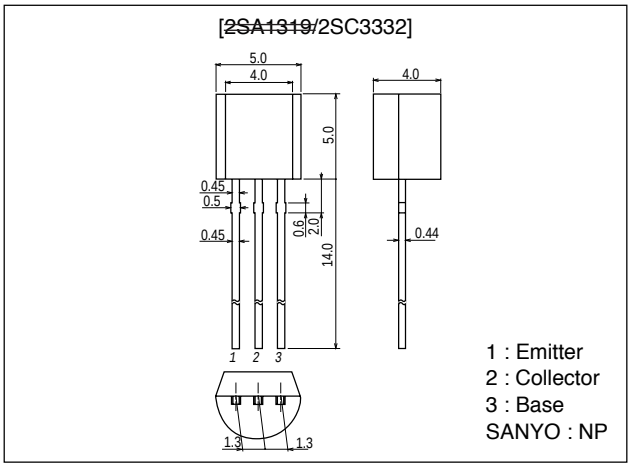
Features

- Hgih breakdown voltage.
- Excellent h_{FE} linearity.
- Wide ASO and highly resistant to breakdown.
- Adoption of MBIT process.

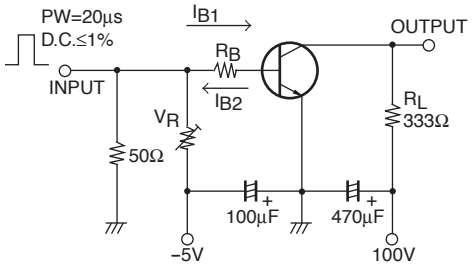
Package Dimensions

unit:mm

2003B



Switching Test Circuit



$20I_{B1}=-20I_{B2}=I_C=300mA$

~~(For PNP, the polarity is reversed.)~~

~~( )~~ : ~~2SA1319~~

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		~~(–)~~180	V
Collector-to-Emitter Voltage	V_{CEO}		~~(–)~~160	V
Emitter-to-Base Voltage	V_{EBO}		~~(–)~~6	V
Collector Current	I_C		~~(–)~~0.7	A
Collector Current (Pulse)	I_{CP}		~~(–)~~1.5	A
Collector Dissipation	P_C		700	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=~~(–)~~120V, I_E=0			~~(–)~~0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=~~(–)~~4V, I_C=0			~~(–)~~0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=~~(–)~~5V, I_C=~~(–)~~100mA	100*		400*	
	$h_{FE}2$	V_{CE}=~~(–)~~5V, I_C=~~(–)~~10mA	80			

* : The ~~2SA1319~~/2SC3332 are classified by 100mA h_{FE} as follows :

Continued on next page.

Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

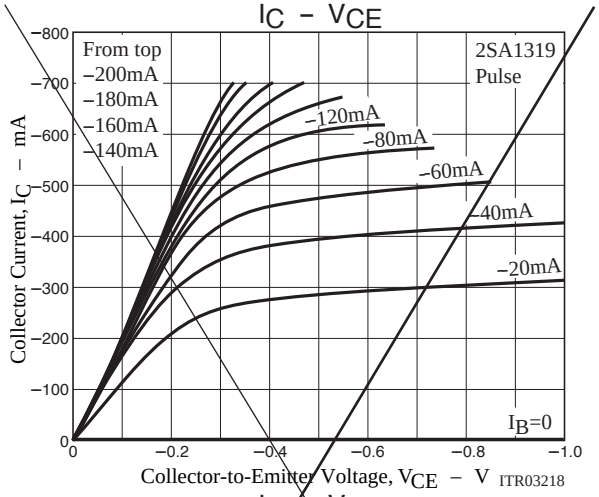
SANYO Electric Co.,Ltd. Semiconductor Company

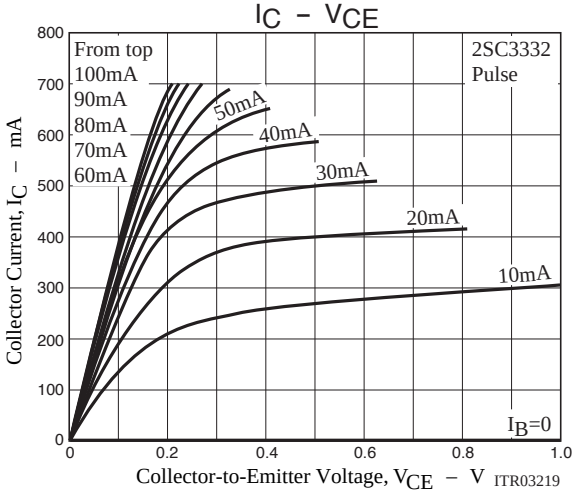
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

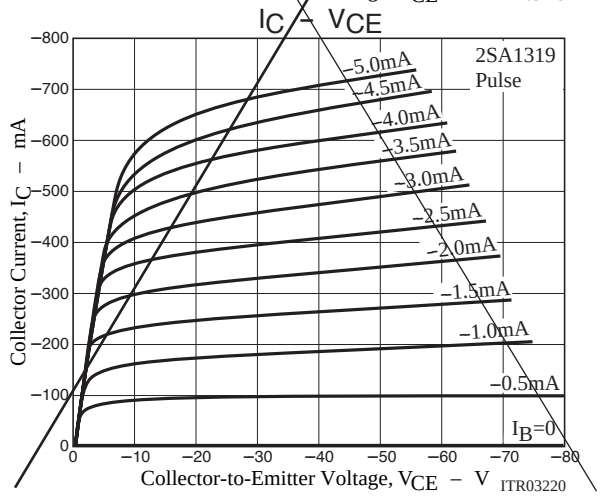
83002TN (KT)/71598HA (KT)/3207KI/N257KI/3135KI/O183KI, TS No.1334-1/4

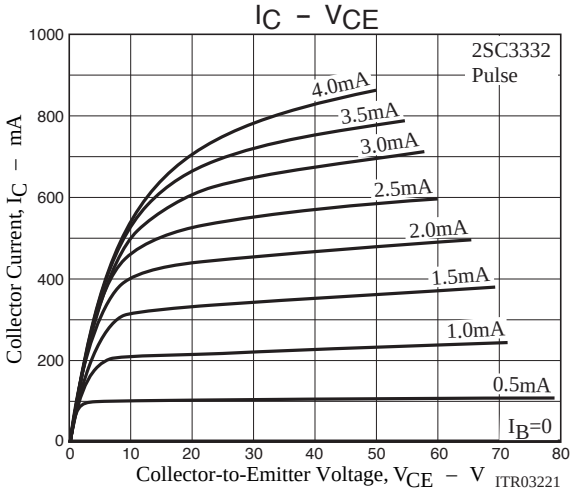
Continued from preceding page.

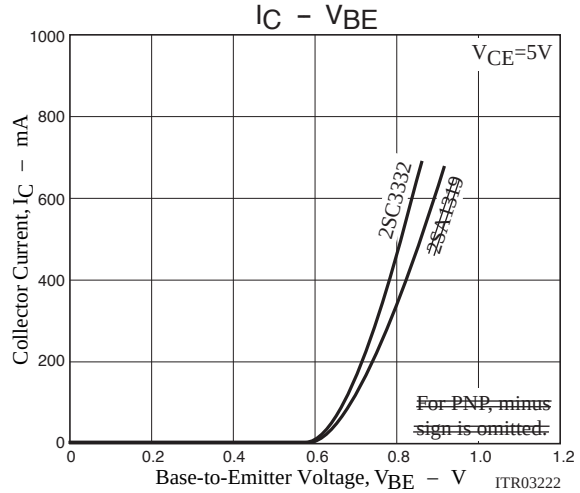
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain Bandwidth Product	f_T	V_{CE}=~~(=)~~10V, I_C=~~(=)~~50mA		120		MHz
Common Base Output Capacitance	C_{ob}	V_{CB}=~~(=)~~10V		~~(11)~~8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=~~(=)~~250mA, I_B=~~(=)~~25mA		~~(0.20)~~ 0.12	~~(0.5)~~ 0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=~~(=)~~250mA, I_B=~~(=)~~25mA		~~(=)~~0.85	~~(=)~~1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=~~(=)~~10μA, I_E=0	~~(=)~~180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=~~(=)~~1mA, R_{BE}=∞	~~(=)~~160			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=~~(=)~~10μA, I_C=0	~~(=)~~6			V
Turn-ON Time	t_{on}	See specified Test Circuit		~~(60)~~50		ns
Storage Time	t_{stg}	See specified Test Circuit		~~(900)~~ 1000		ns
Fall Time	t_f	See specified Test Circuit		~~(60)~~60		ns

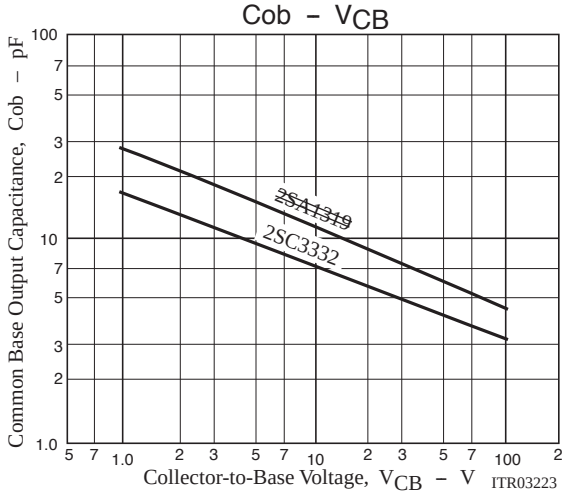


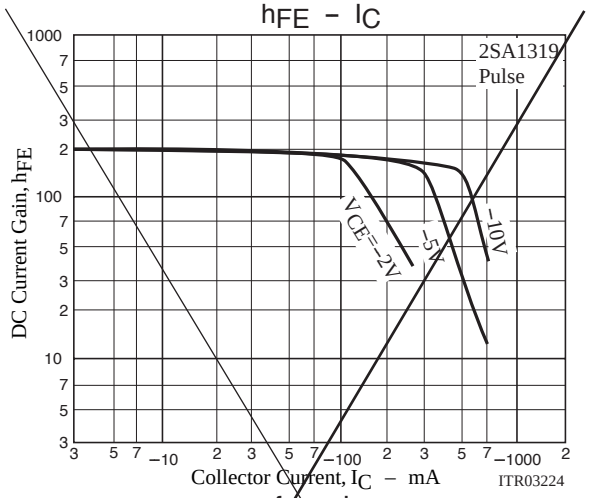


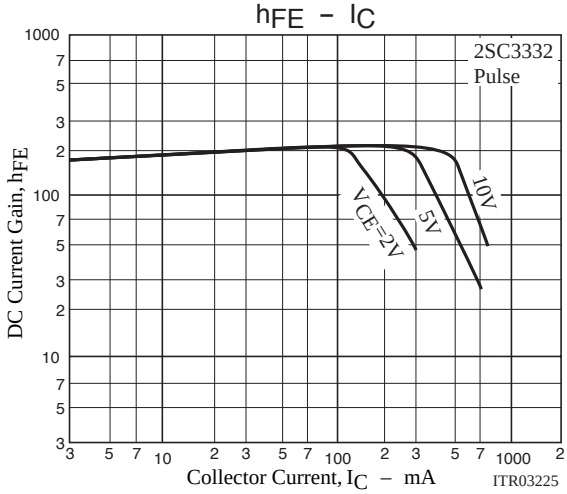


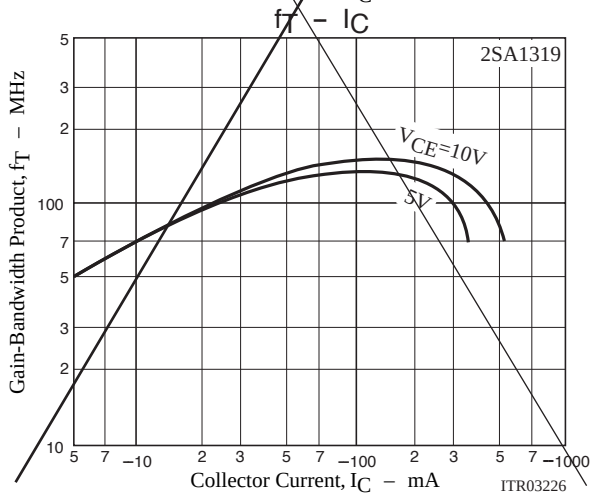


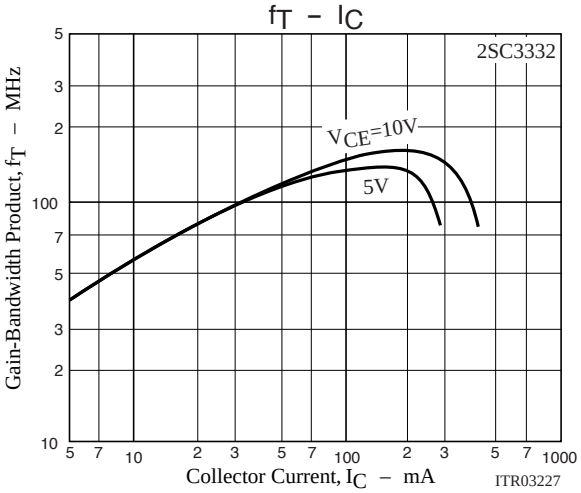


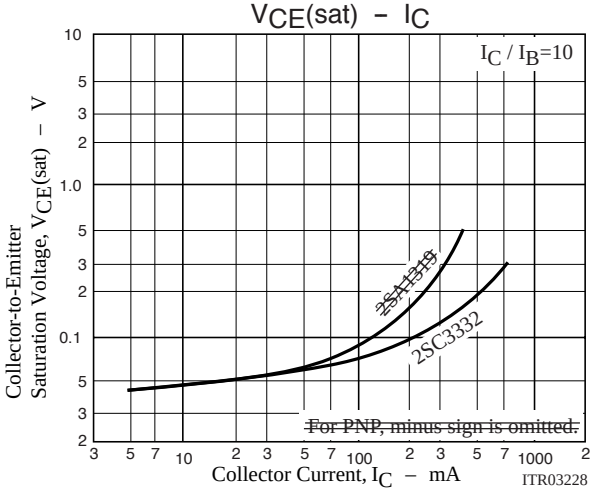


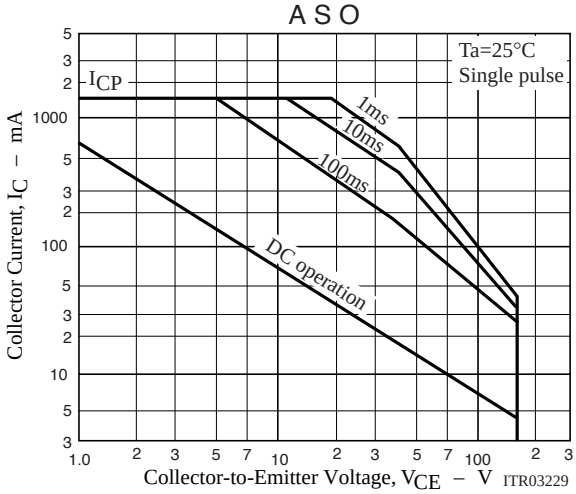

hFE – IC
2SA1319
Pulse
VCE=–2V
–5V
–10V
DC Current Gain, hFE
Collector Current, IC – mA
ITR03224

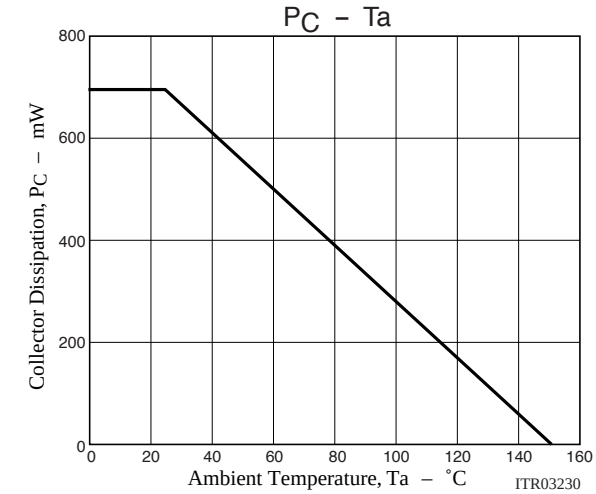

hFE – IC
2SC3332
Pulse
VCE=2V
5V
10V
DC Current Gain, hFE
Collector Current, IC – mA
ITR03225


fT – IC
2SA1319
VCE=10V
5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR03226


fT – IC
2SC3332
VCE=10V
5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR03227


VCE(sat) – IC
IC / IB=10
~~2SA1319~~
2SC3332
~~For PNP, minus sign is omitted.~~
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – mA
ITR03228


A S O
Ta=25°C
Single pulse
ICP
1ms
10ms
100ms
DC operation
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
ITR03229


PC – Ta
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
ITR03230