Ordering number:ENN6336

PNP/NPN Epitaxial Planar Silicon Transistors

2SA2023/2SC5611

60V / 5A High-Speed Switching Applications

Applications

- Various inductance lamp drivers for electrical equipment.
- Inverters, converters (strobes, flash, fluorescent lamp lighting circuit).
- Power amplifier (high-power car stereo, motor control).
- High-speed switching (switching regulater, driver circuit).

Features

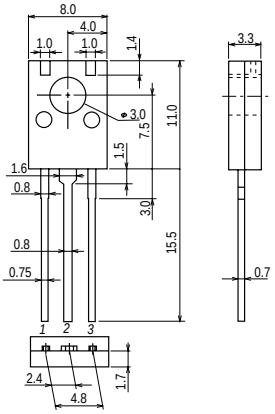
- Low collector-to-emitter saturation voltage.
- Excellent dependence of h_{FE} on current.
- High-speed switching.
- Micaless package facilitating mounting.

Package Dimensions

unit:mm

2165

[2SA2023/2SC5611]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO126ML

Note : The emitter and base are reversely assigned to those of our standard products encapsulated in the TO-126ML package.

Specifications

Note * ( ) : 2SA2023

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)80	V
Collector-to-Emitter Voltage	V_{CEO}		(–)60	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)5	A
Collector Current (Pulse)	I_{CP}		(–)7	A
Collector Dissipation	P_C		1.3	W
		Tc=25˚C	10	W
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}=(–)40V, I_E=0			(–)0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)0.1	mA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)1A	110		200	
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)1A		100		MHz
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(–)2.5A, I_B=(–)0.125A			(–)0.4	V

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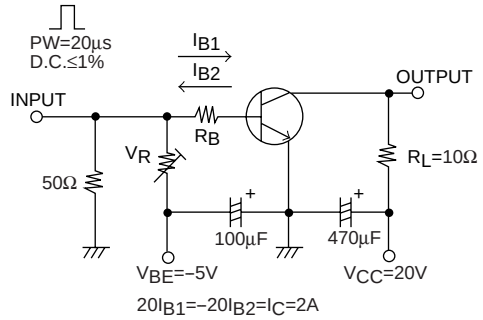
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

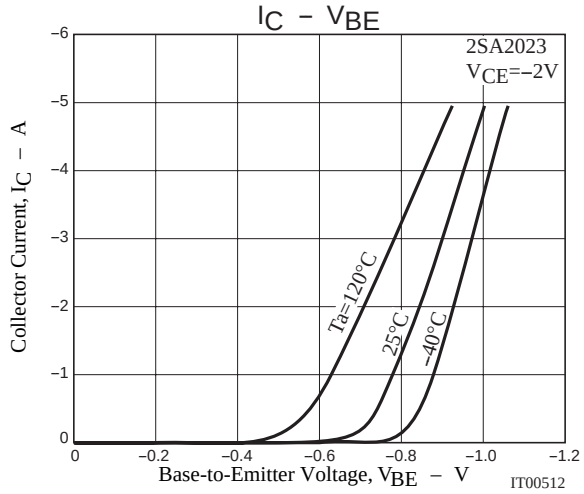
Continued on preceding page.

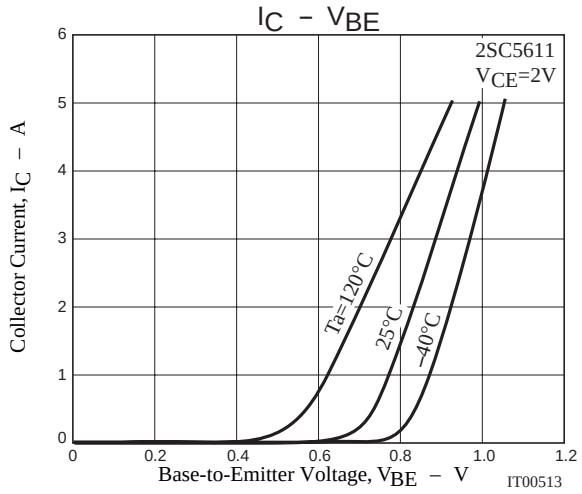
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)5			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit		0.5		μs
Fall Time	t_f	See specified Test Circuit		0.1		μs

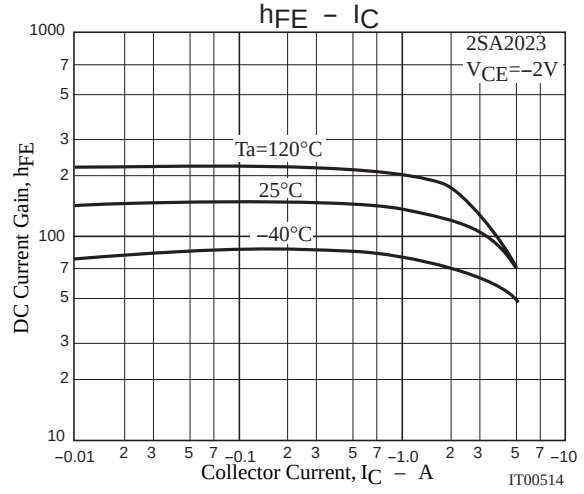
Switching Time Test Circuit

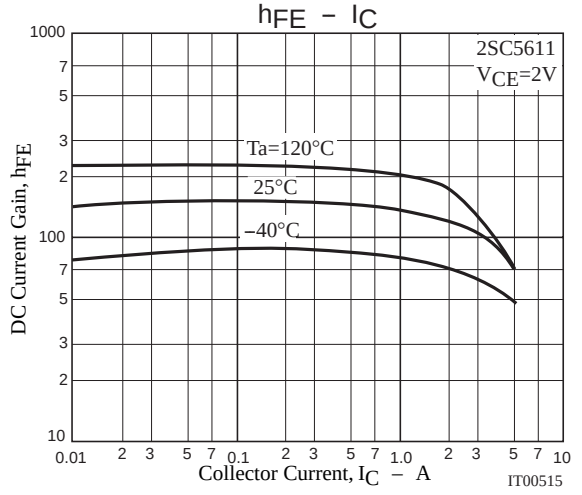


(For PNP, the polarity is reversed.)

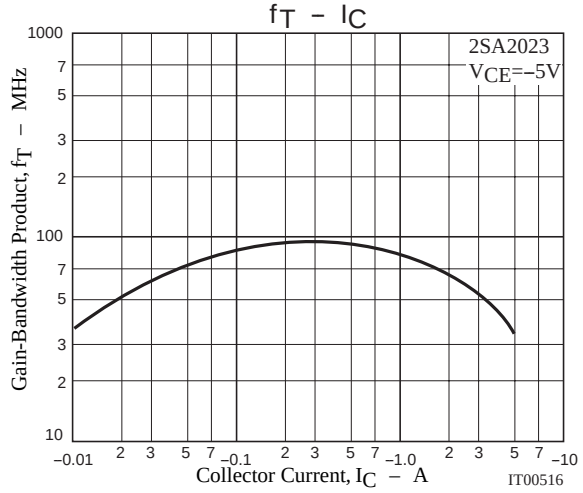








f_T – I_C



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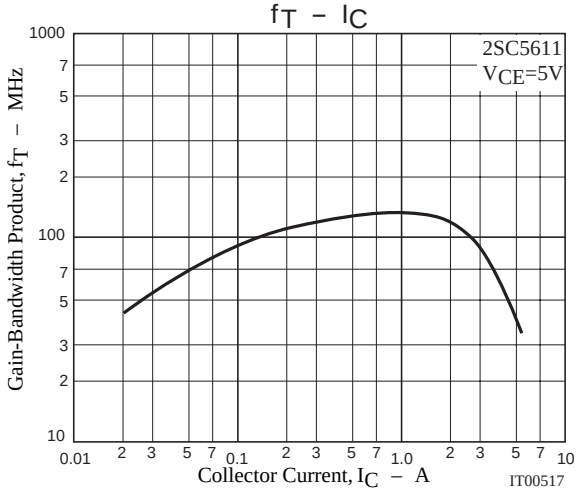
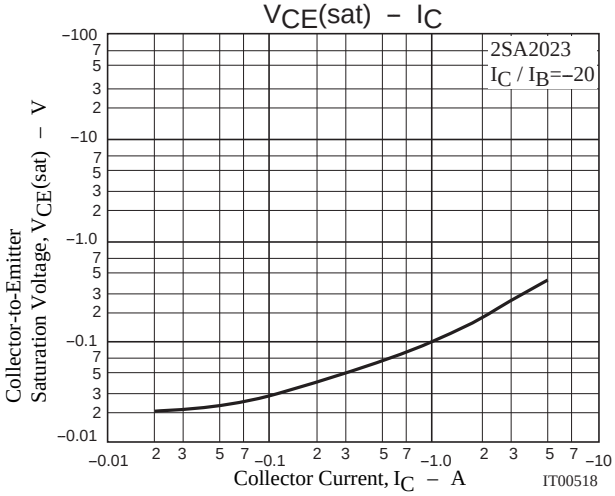
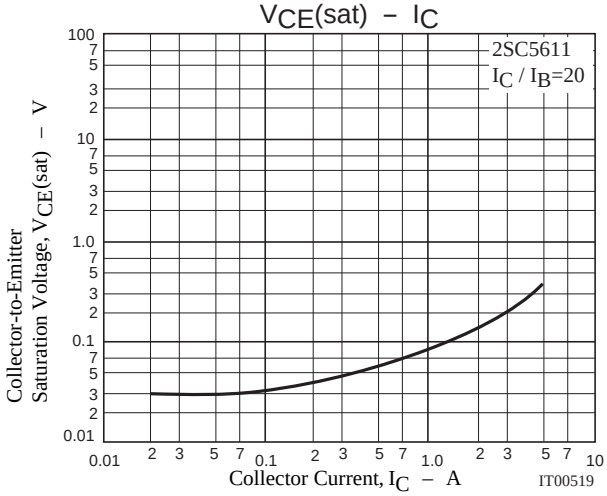


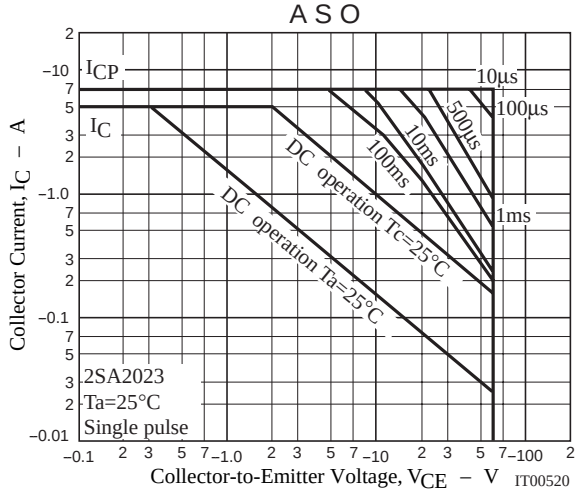
$V_{CE}(sat)$ – I_C



$V_{CE}(sat)$ – I_C



ASO



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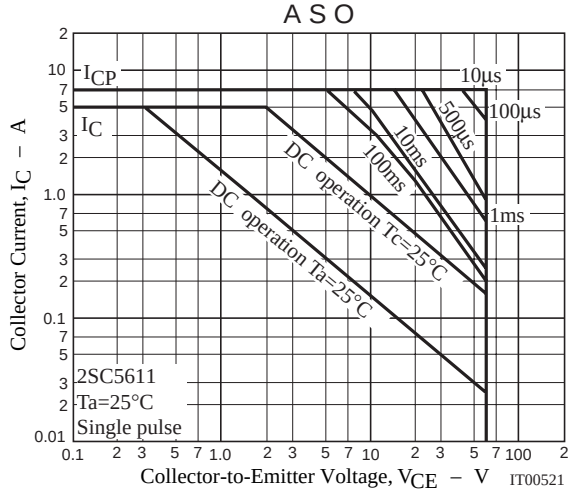
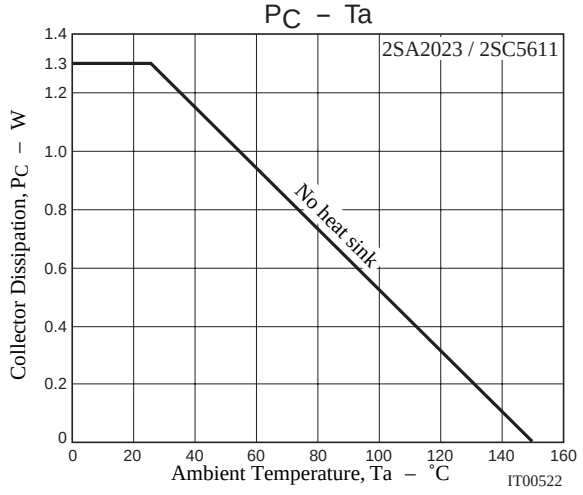


P_C – Ta



P_C – Tc