Ordering number:ENN1199D

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1289/2SC3253

60V/5A High-Speed Switching Applications

Applications

- Various inductance lamp drivers for electrical equipment.
- Inverters, converters (strobo, flash, fluorescent lamp lighting circuit).
- Power amp (high power car stereo, motor controller).
- High-speed switching (switching regulator, driver).

Features

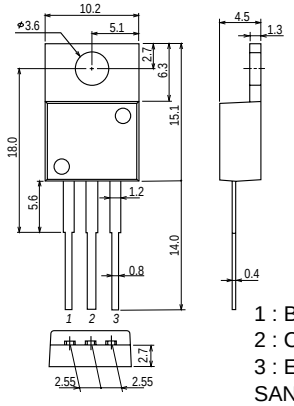
- Low saturation voltage.
- Excellent current dependence of h_{FE}.
- Short switching time.

Package Dimensions

unit:mm

2010C

[2SA1289/2SC3253]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO-220AB

( ) : 2SA1289

Specifications

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	Tc=25˚C	30	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	70*		280*	
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

* : The 2SA1290/2SC3254 are classified by 1A h_{FE} as follows :

Continued on next page.

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.

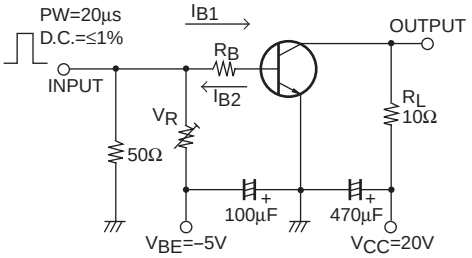
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SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Continued from preceding page.

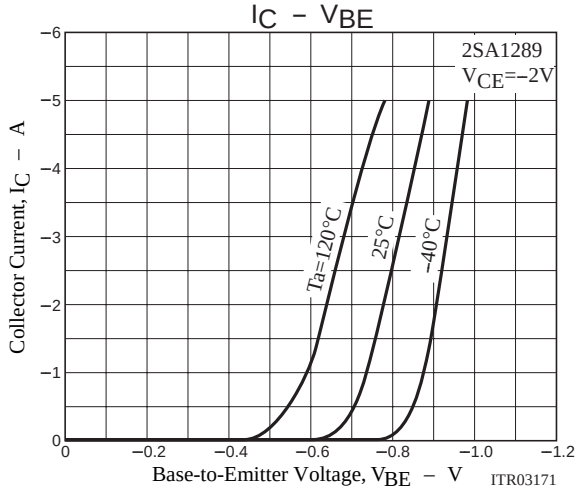
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)5			V
Turn-ON 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

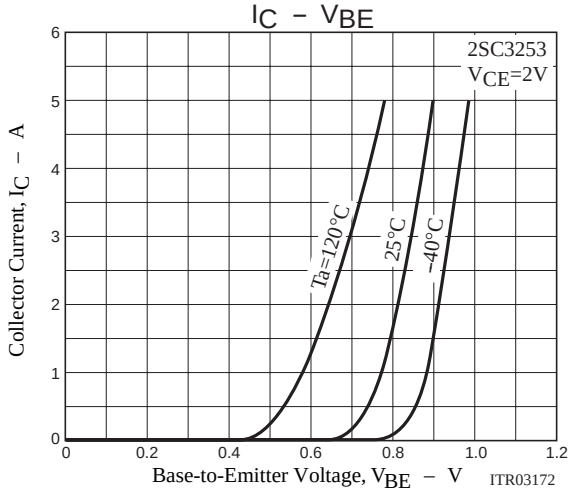
Switching Time Test Circuit

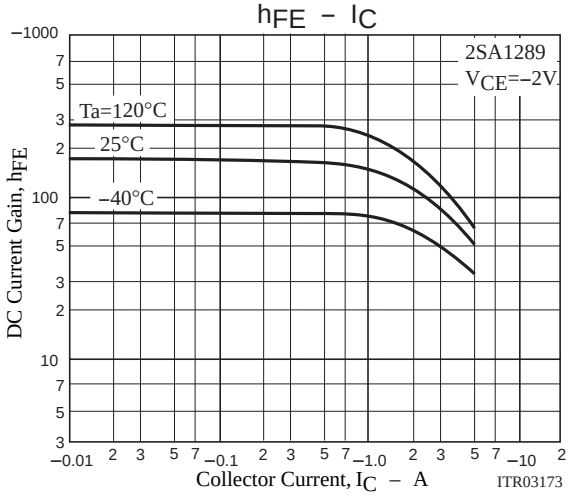


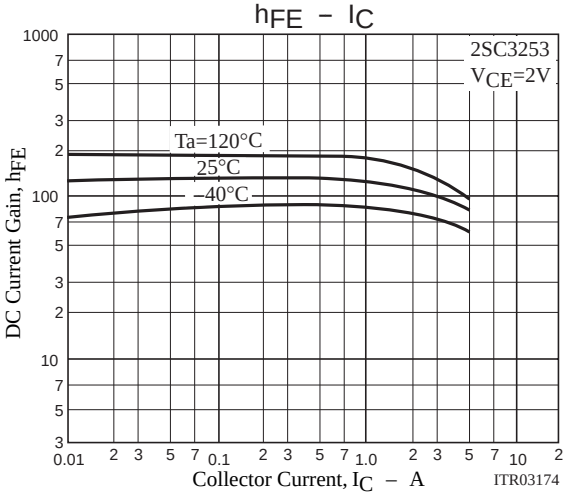
$20I_{B1}=-20I_{B2}=I_C=2A$

(For PNP, the polarity is reversed.)

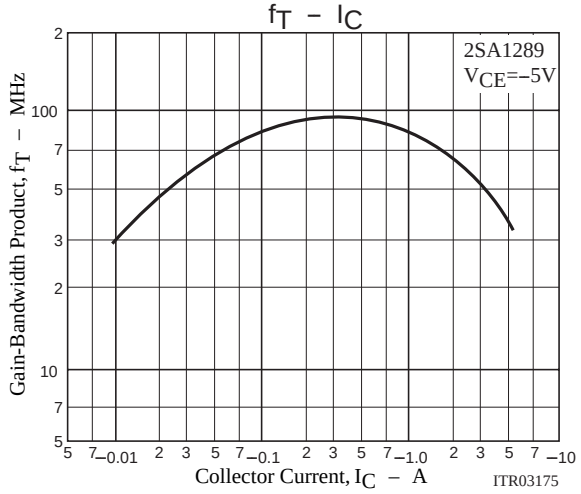




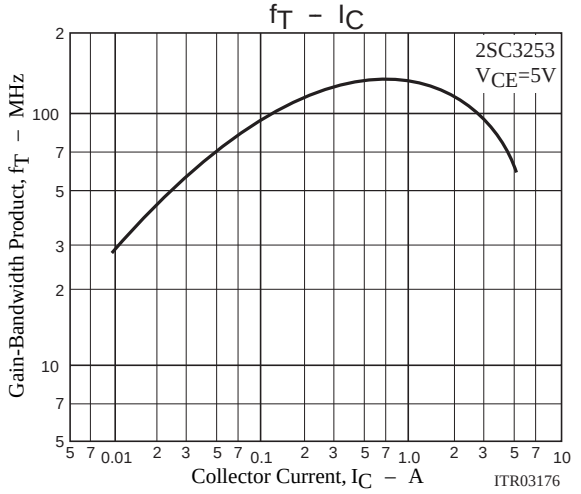




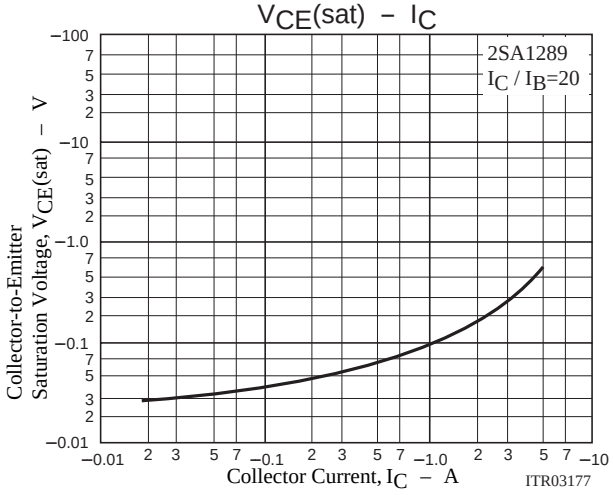
f_T – I_C



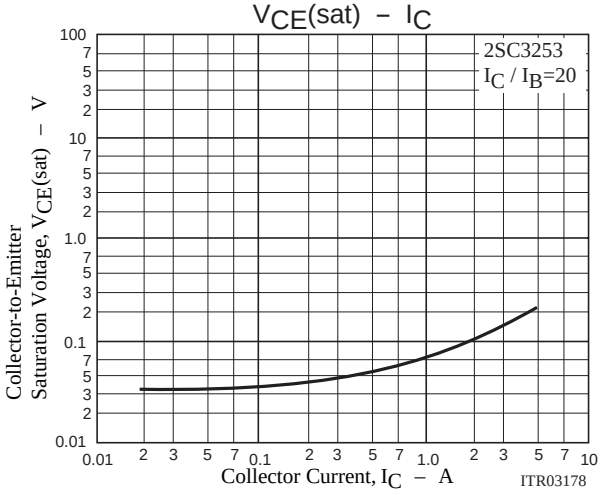
f_T – I_C



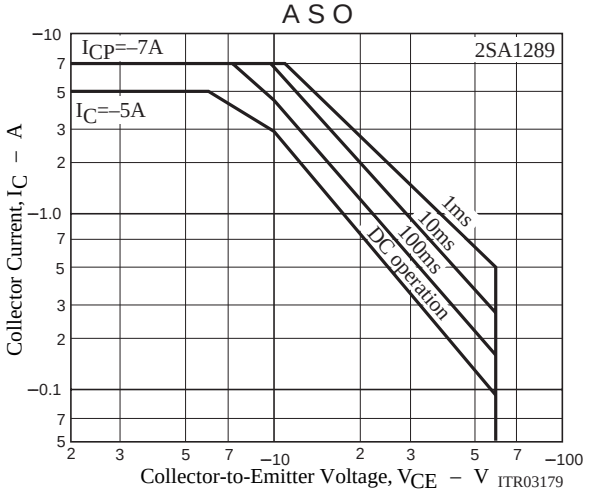
V_{CE}(sat) – I_C



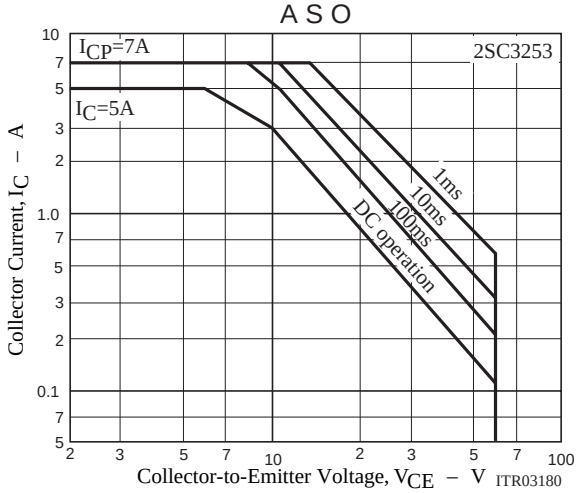
V_{CE}(sat) – I_C



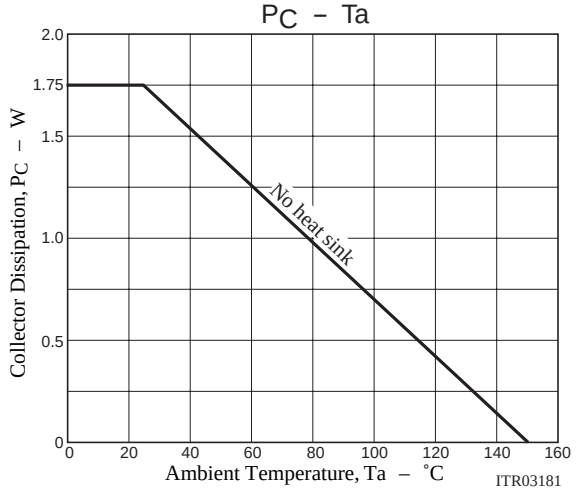
A S O



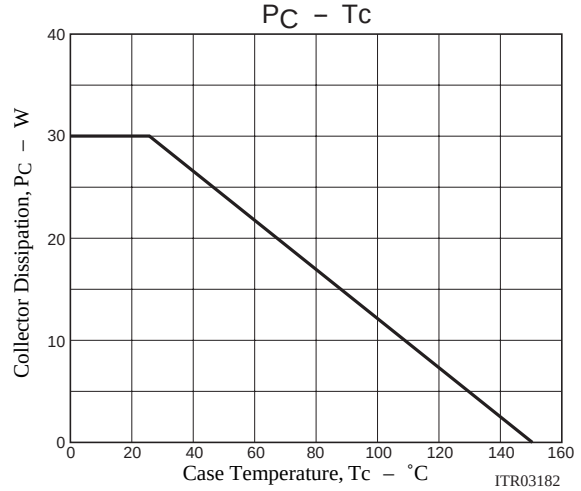
A S O



P_C – Ta



P_C – Tc



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