Ordering number:EN2209C

PNP/NPN Epitaxial Planar Silicon Darlington Transistors

2SB1223/2SD1825

Driver Applications

Applications

· Suitable for use in control of motor drivers, printer hammer drivers, and constant-voltage regulators.

Features

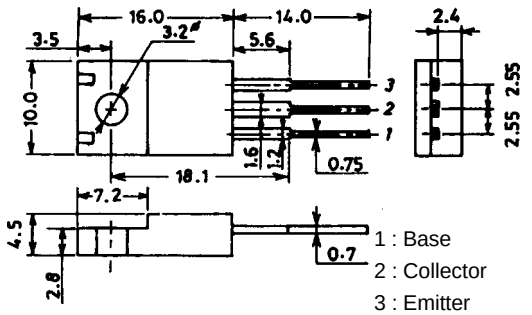
· High DC current gain.
· Large current capacity and wide ASO.
· Micaless package facilitating mounting.

Package Dimensions

unit:mm

2041A

[2SB1223/2SD1825]



SANYO : TO-220ML

( ) : 2SB1223

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)70	V
Collector-to-Emitter Voltage	V_{CEO}		(–)60	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)4	A
Collector Current (Pulse)	I_{CP}		(–)6	A
Collector Dissipation	P_C		2.0	W
		Tc=25˚C	20	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}=(–)5V, I_C=0			(–)3.0	mA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)2A	2000	5000		
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)2A		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)2A, I_B=(–)4mA		0.9	(–)1.5	V
				(–1.0)		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)2A, I_B=(–)4mA			(–)2.0	V

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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges,or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

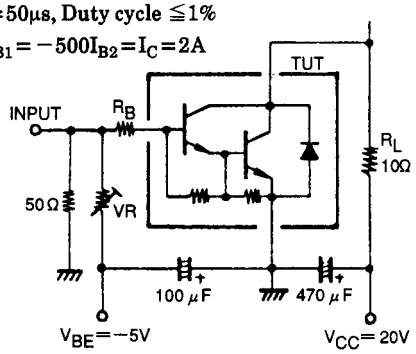
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)5mA, I_E=0	(–)70			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)50mA, R_{BE}=∞	(–)60			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.6		μs
				(0.5)		μs
Storage Time	t_{stg}	See specified Test Circuit		2.7		μs
				(1.4)		μs
Fall Time	t_f	See specified Test Circuit		1.6		μs
				(1.2)		μs

Switching Time Test Circuit

PW=50μs, Duty cycle ≦1%

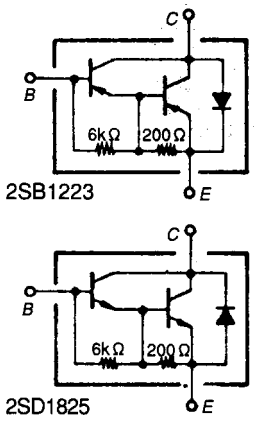
$500I_{B1} = -500I_{B2} = I_C = 2A$

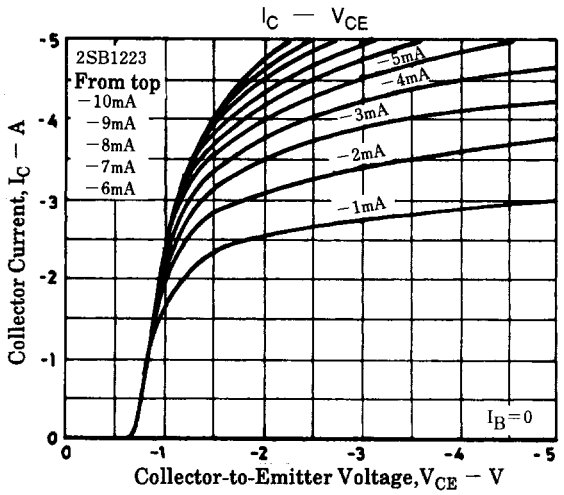


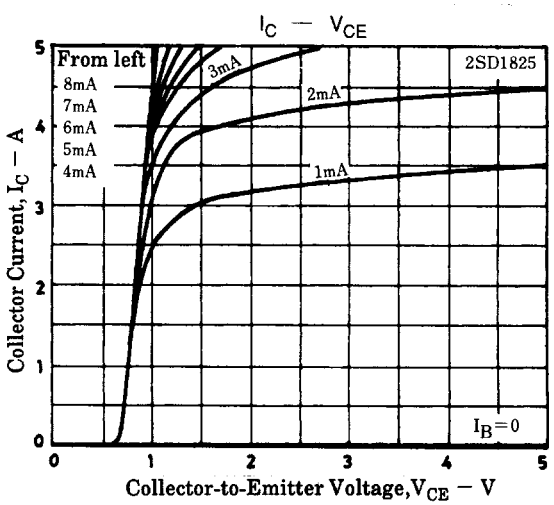
(For PNP, the polarity is reversed.)

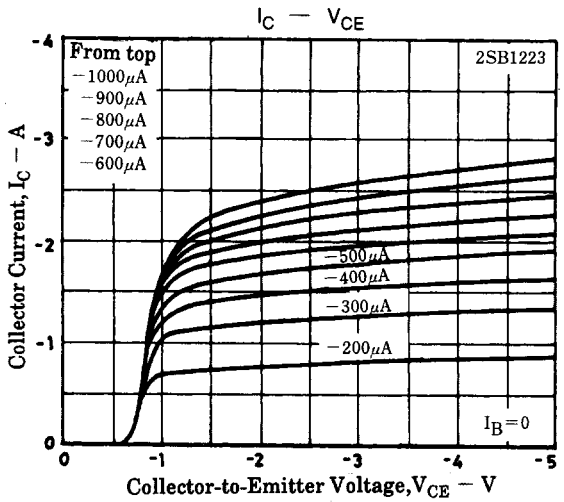
Unit (resistance : Ω, capacitance : F)

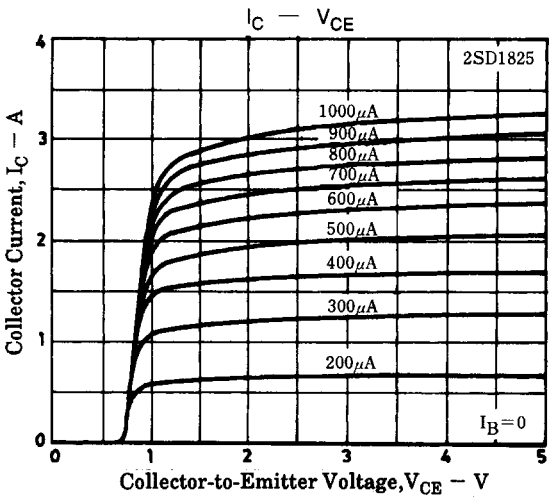
Electrical Connection



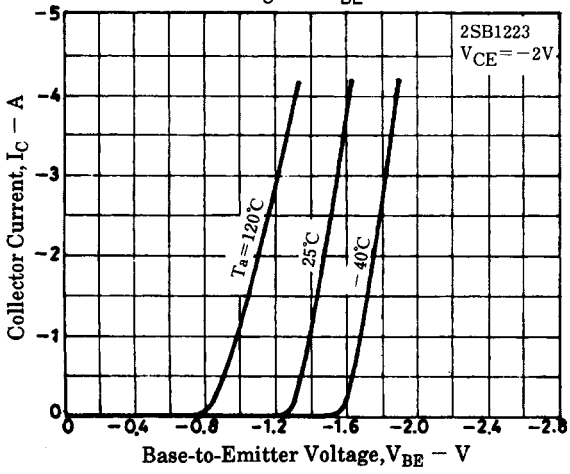




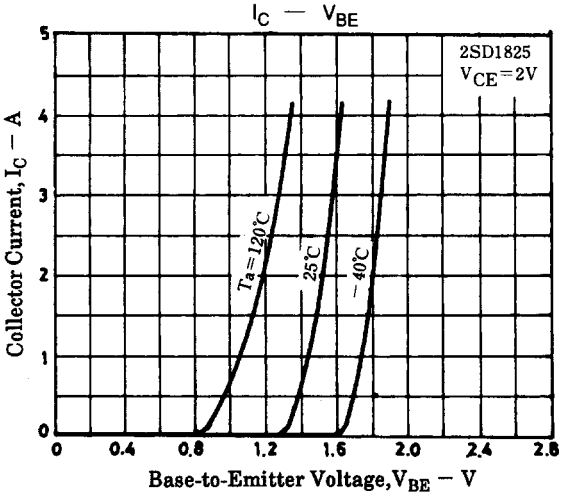




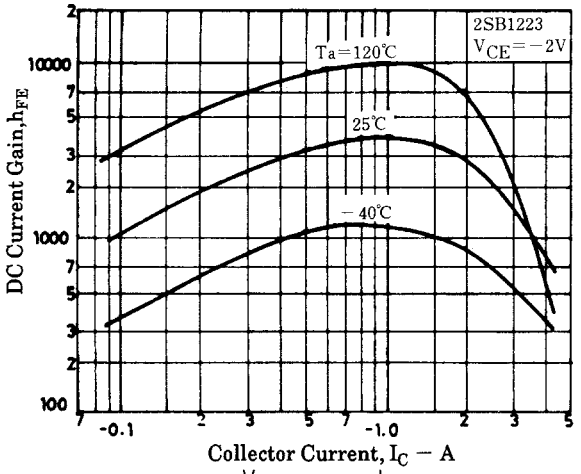
I_C — V_{BE}



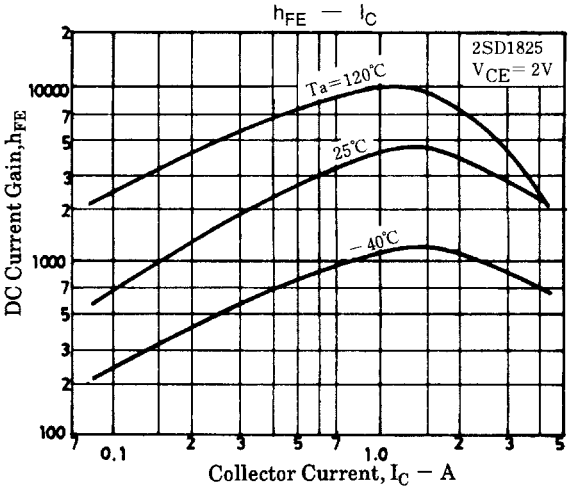
I_C — V_{BE}



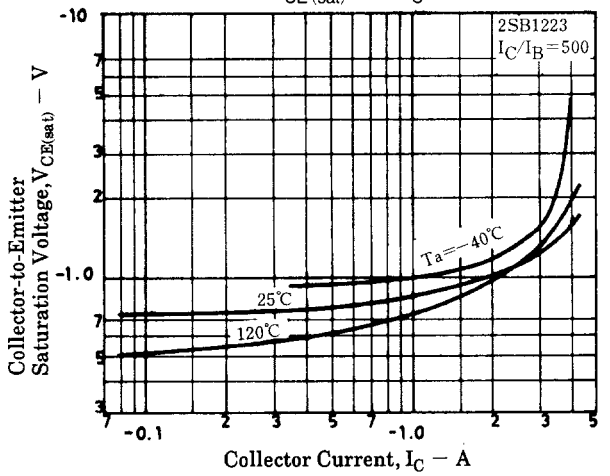
h_{FE} — I_C



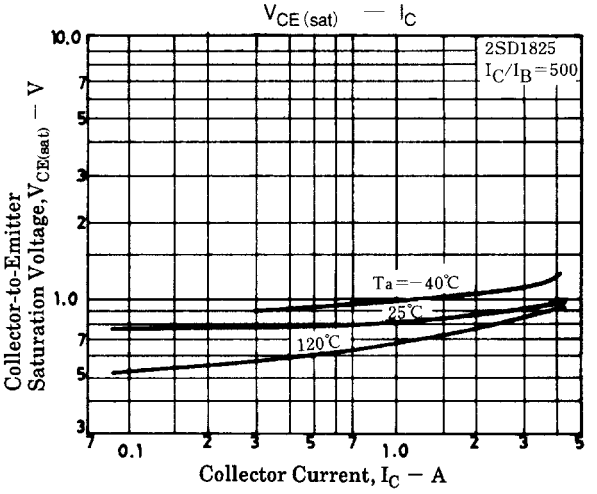
h_{FE} — I_C



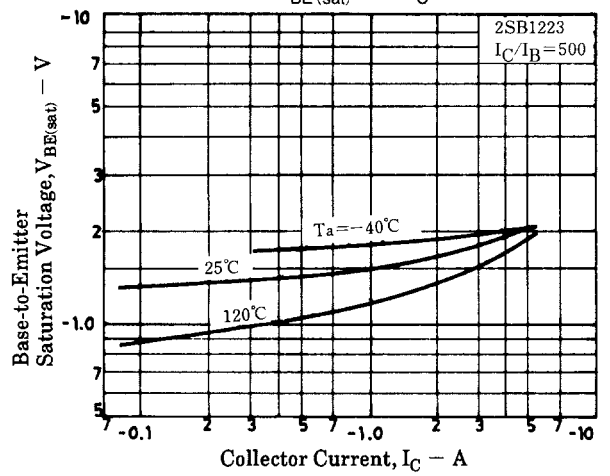
$V_{CE(sat)}$ — I_C



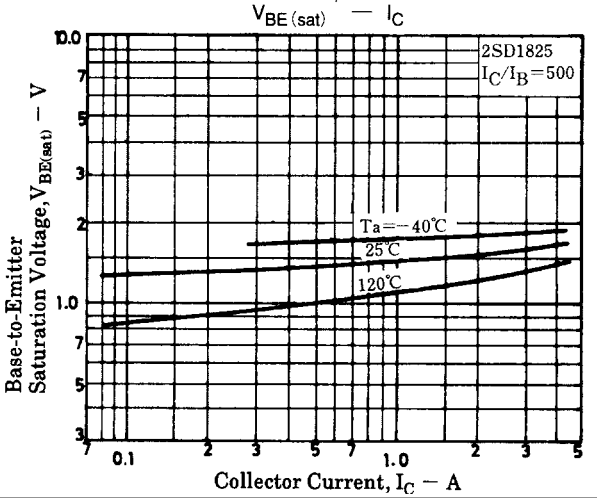
$V_{CE(sat)}$ — I_C

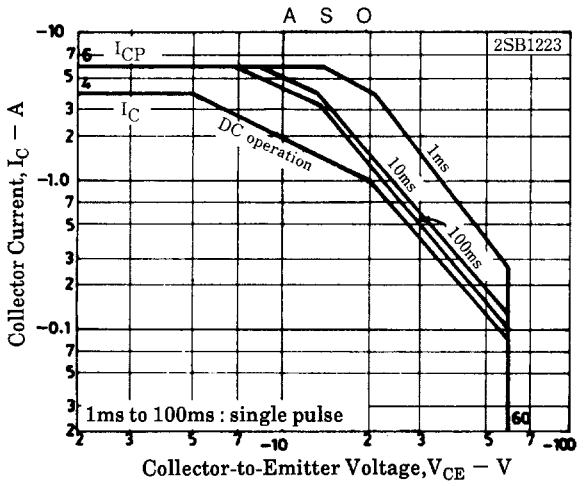


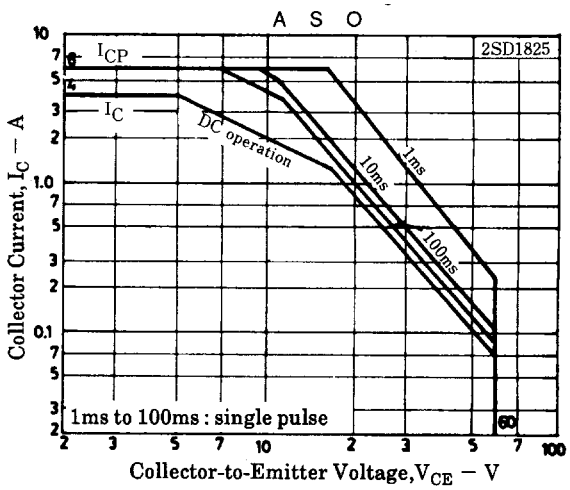
$V_{BE(sat)}$ — I_C

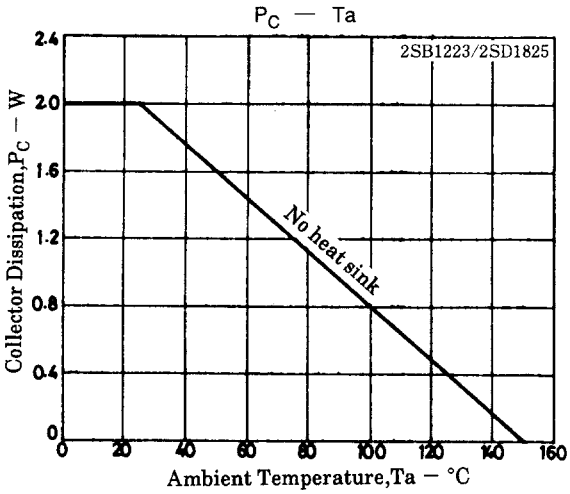


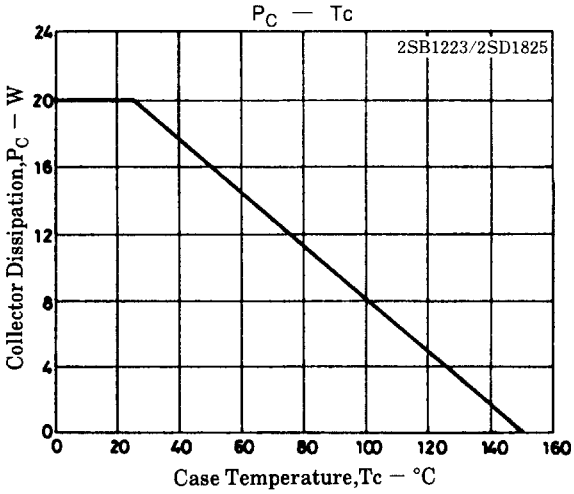
$V_{BE(sat)}$ — I_C











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