Ordering number:EN2211B

PNP/NPN Epitaxial Planar Silicon Darlington Transistor

2SB1225/2SD1827

Driver Applications

Applications

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

Features

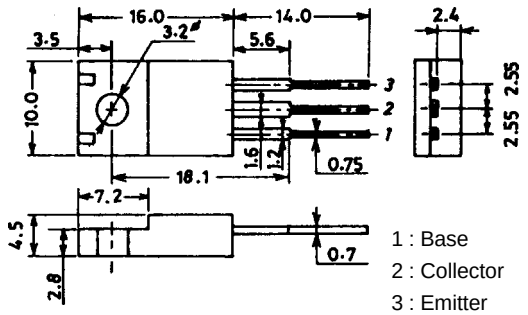
· High DC current gain.
· Large current capacity and wide ASO.
· Low saturation voltage.
· Micaless package facilitating mounting.

Package Dimensions

unit:mm

2041A

[2SB1225/2SD1827]



SANYO : TO-220ML

( ) : 2SB1225

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		(–)10	A
Collector Current (Pulse)	I_{CP}		(–)15	A
Collector Dissipation	P_C		2.0	W
		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}=(–)5V, I_C=0			(–)3.0	mA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)5A	2000	5000		
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)5A		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)5A, I_B=(–)10mA		0.9	(–)1.5	V
				(–1.0)		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)5A, I_B=(–)10mA			(–)2.0	V

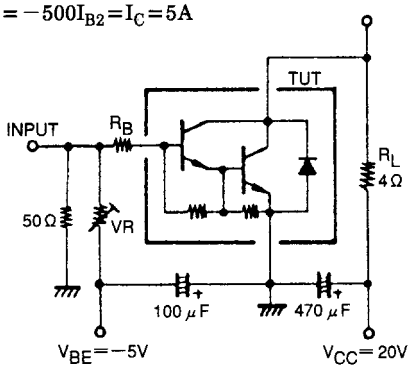
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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		3.0		µs
				(1.5)		µs
Fall Time	t_f	See specified Test Circuit		1.8		µs
				(1.7)		µs

Switching Time Test Circuit

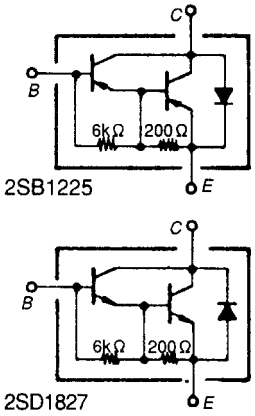
PW=50µs, Duty cycle ≦1%

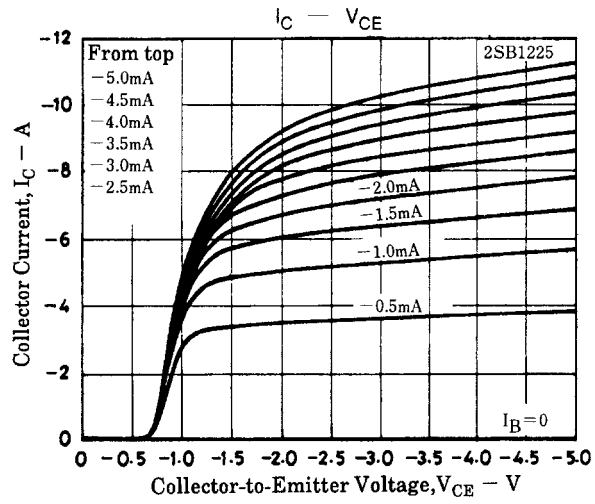
$500I_{B1} = -500I_{B2} = I_C = 5A$

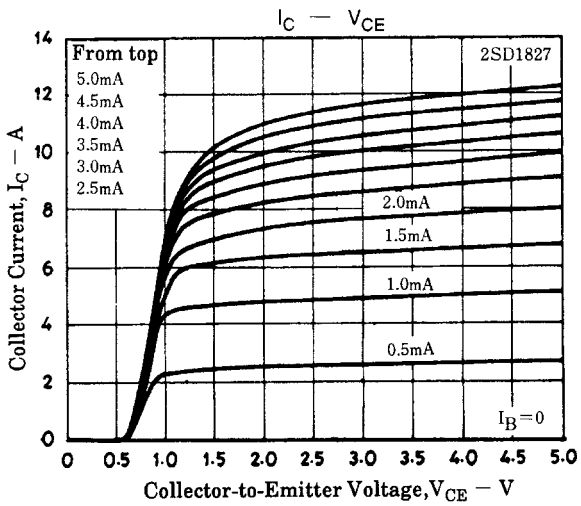


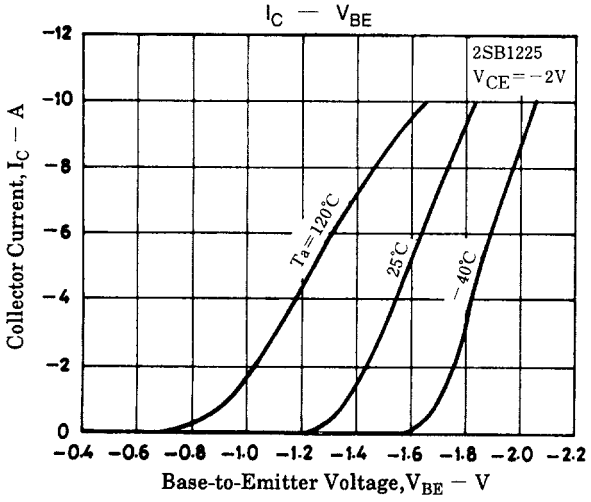
(For PNP, the polarity is reversed.)

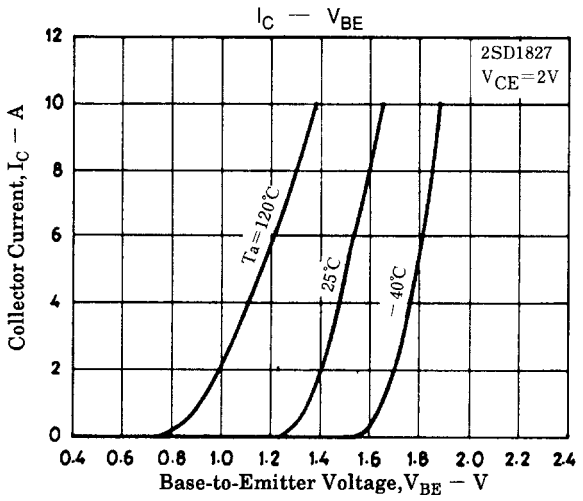
Electrical Connection

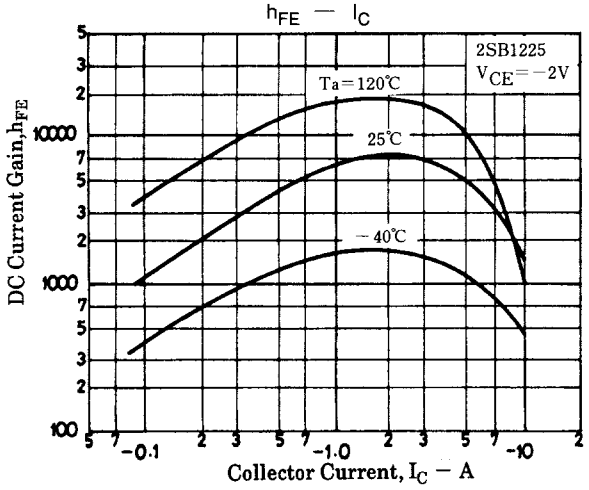


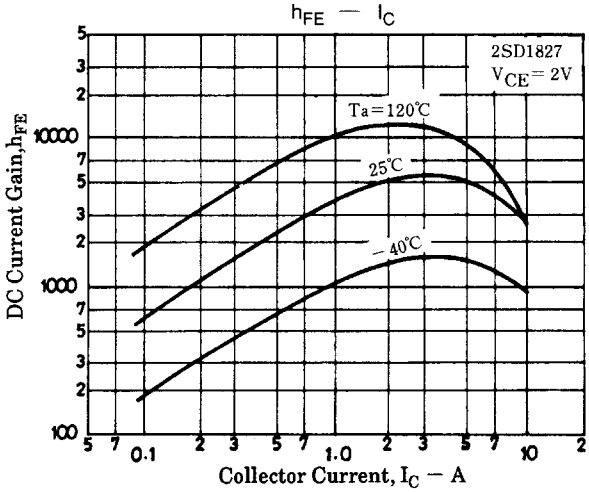


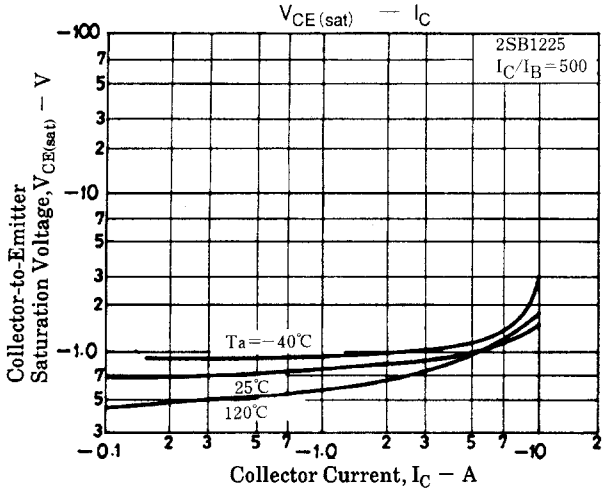


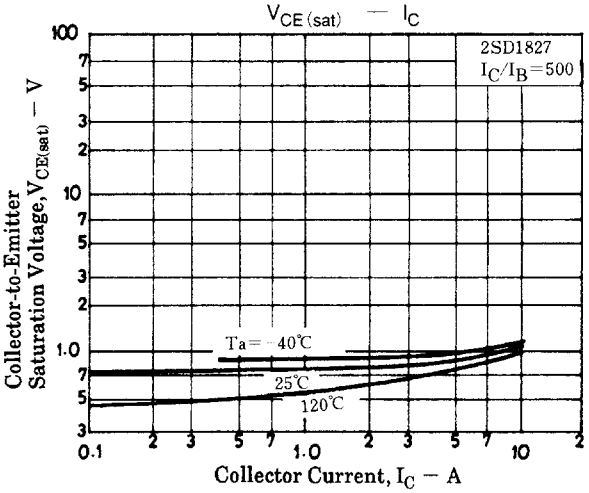


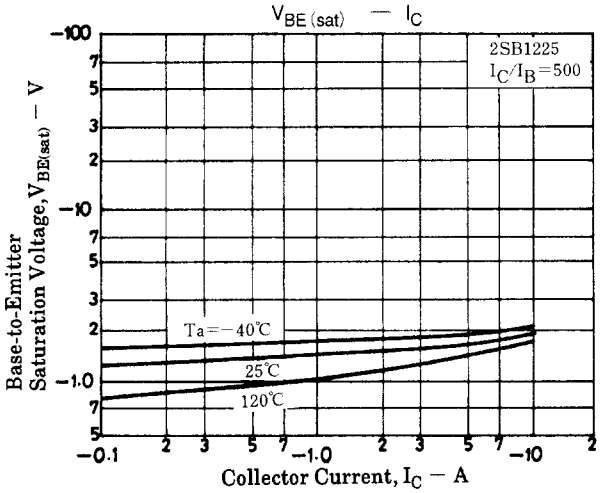


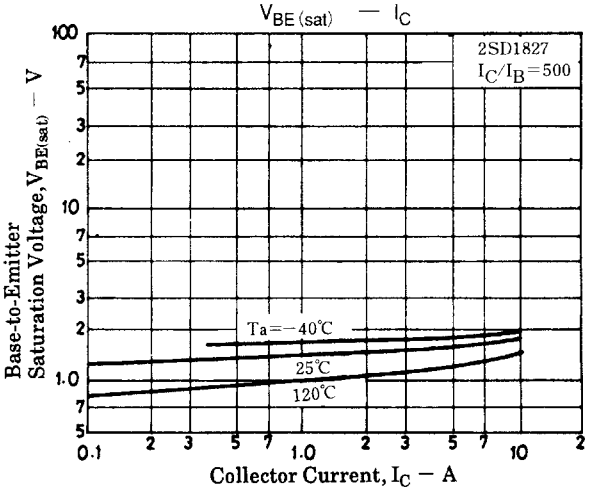

h_{FE} — I_C
2SB1225
V_{CE}=−2V
Ta=120℃
25℃
−40℃
DC Current Gain, h_{FE}
Collector Current, I_C − A

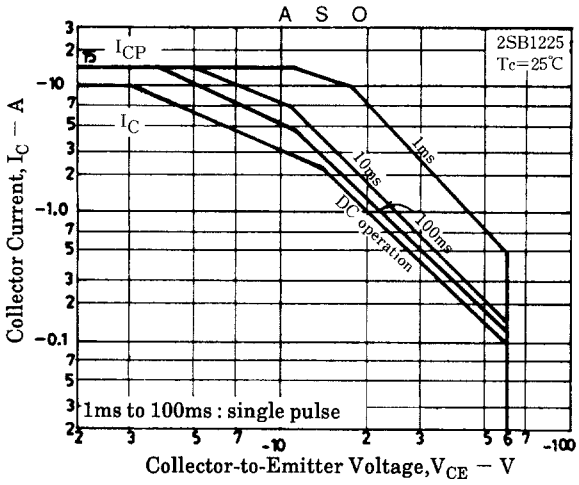

h_{FE} — I_C
2SD1827
V_{CE}=2V
Ta=120℃
25℃
−40℃
DC Current Gain, h_{FE}
Collector Current, I_C − A

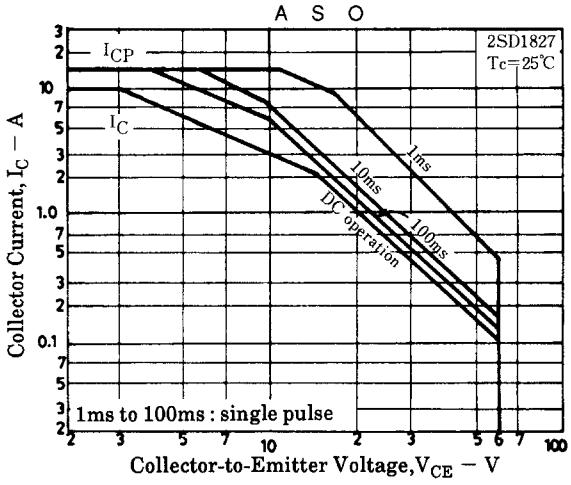

$V_{CE(sat)}$ — I_C
2SB1225
I_C/I_B=500
Ta=−40℃
25℃
120℃
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ − V
Collector Current, I_C − A


$V_{CE(sat)}$ — I_C
2SD1827
I_C/I_B=500
Ta=−40℃
25℃
120℃
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ − V
Collector Current, I_C − A


$V_{BE(sat)}$ — I_C
2SB1225
I_C/I_B=500
Ta=−40℃
25℃
120℃
Base-to-Emitter Saturation Voltage, $V_{BE(sat)}$ − V
Collector Current, I_C − A


$V_{BE(sat)}$ — I_C
2SD1827
I_C/I_B=500
Ta=−40℃
25℃
120℃
Base-to-Emitter Saturation Voltage, $V_{BE(sat)}$ − V
Collector Current, I_C − A


A S O
2SB1225
Tc=25℃
I_{CP}
I_C
1ms
10ms
DC operation
100ms
1ms to 100ms : single pulse
Collector Current, I_C − A
Collector-to-Emitter Voltage, V_{CE} − V


A S O
2SD1827
Tc=25℃
I_{CP}
I_C
1ms
10ms
DC operation
100ms
1ms to 100ms : single pulse
Collector Current, I_C − A
Collector-to-Emitter Voltage, V_{CE} − V