Ordering number:825C

PNP/NPN Epitaxial Planar Silicon Tranasistors

2SB829/2SD1065

50V/15A Switching Applications

Applications

· Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

Features

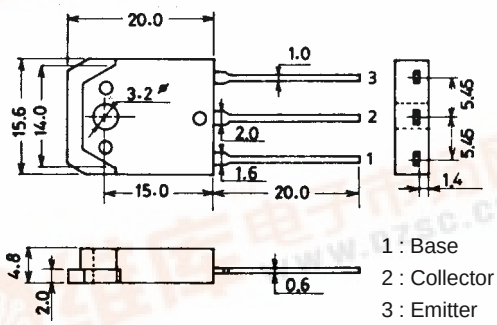
· Low-saturation collector-to-emitter voltage : $V_{CE(sat)}$ =–0.5V max.
· Wide ASO leading to high resistance to breakdown.

Package Dimensions

unit:mm

2022A

[2SD829/2SD1065]



SANYO : TO-3PB

( ) : 2SB829

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)60	V
Collector-to-Emitter Voltage	V_{CEO}		(–)50	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)15	A
Collector Current (Pulse)	I_{CP}		(–)20	A
Collector Dissipation	P_C	Tc=25˚C	90	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	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)1A	70*		280*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)8A	30			
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)1A		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)8A, I_B=(–)0.4A		(–0.26)	(–0.5)	V
				0.18	0.4	V

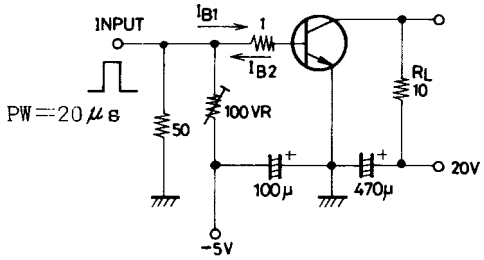
* : The 2SB829/2SD1065 are classified by 1A h_{FE} as follows :

70 Q 140	100 R 200	140 S 280

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=(–)1mA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)6			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.2		μs
Fall Time	t_f	See specified Test Circuit		(0.5)		μs
				1.0		μs
Storage Time	t_{stg}	See specified Test Circuit		0.1		μs

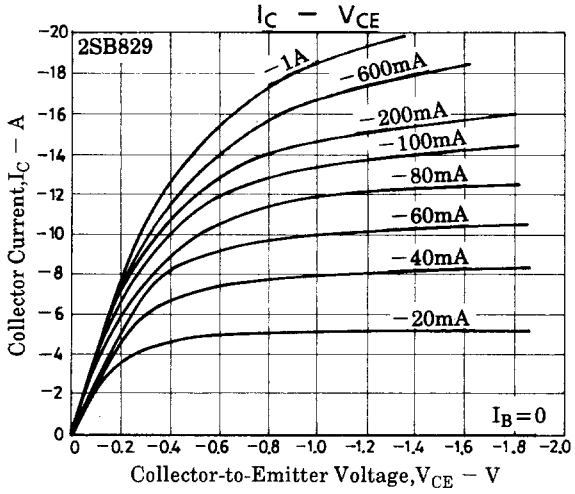
Switching Time Test Circuit

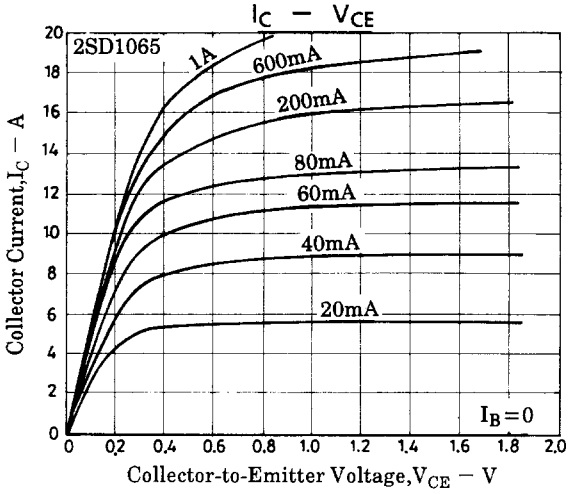


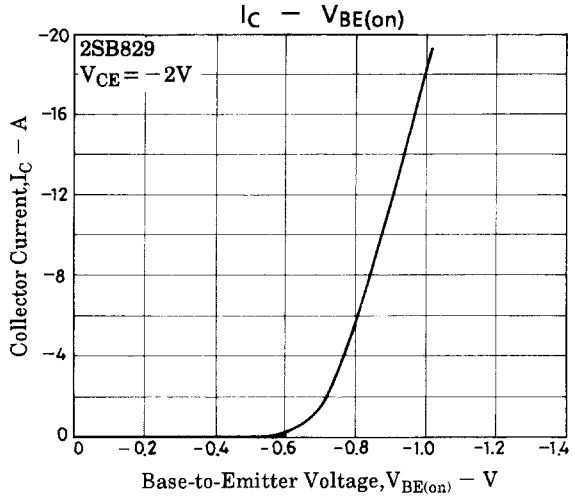
$10I_{B1}=-10I_{B2}=I_C=2A$

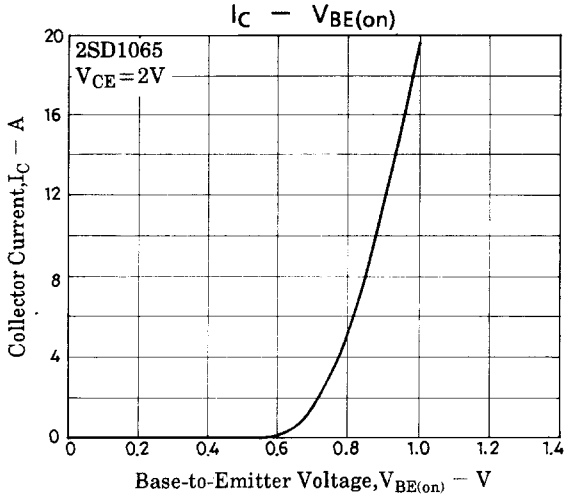
(For PNP, the polarity is reversed.)

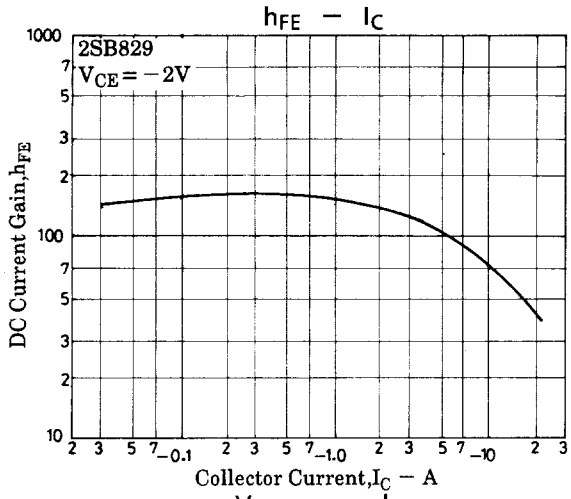
Unit (resistance : Ω, capacitance: F)

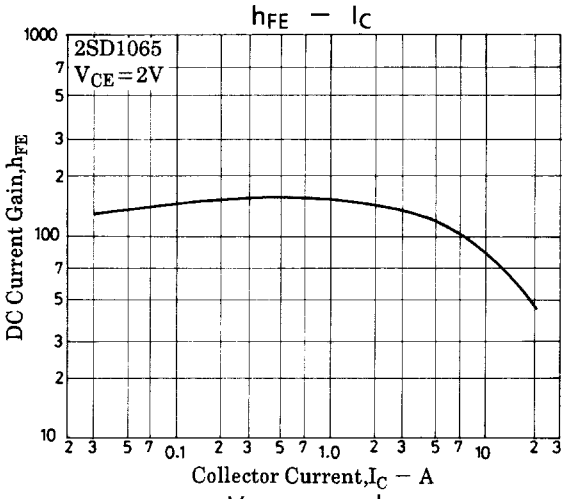


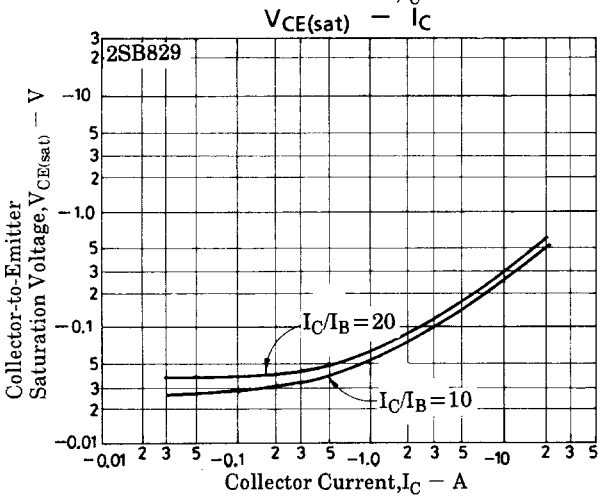


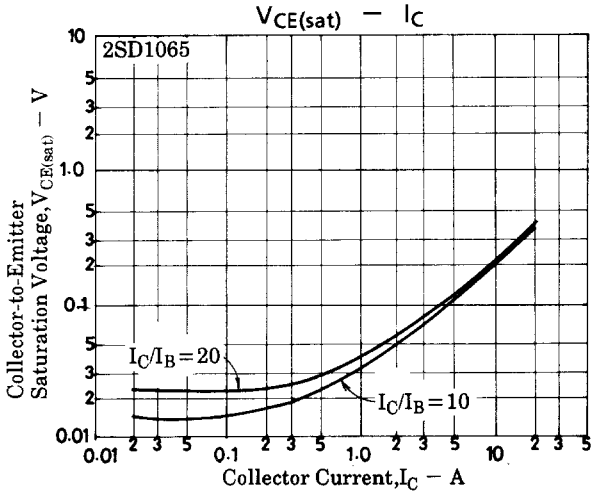


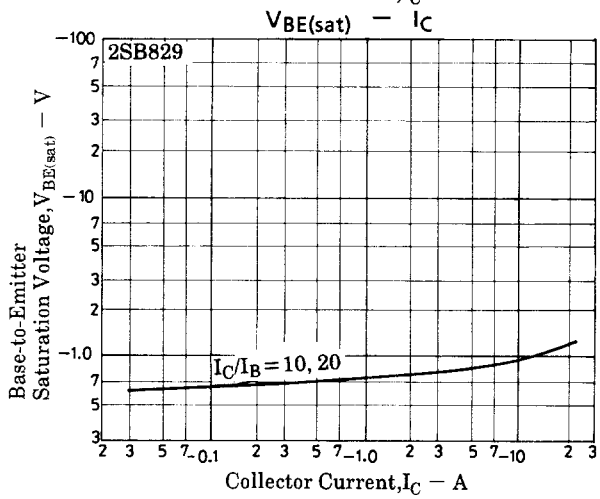


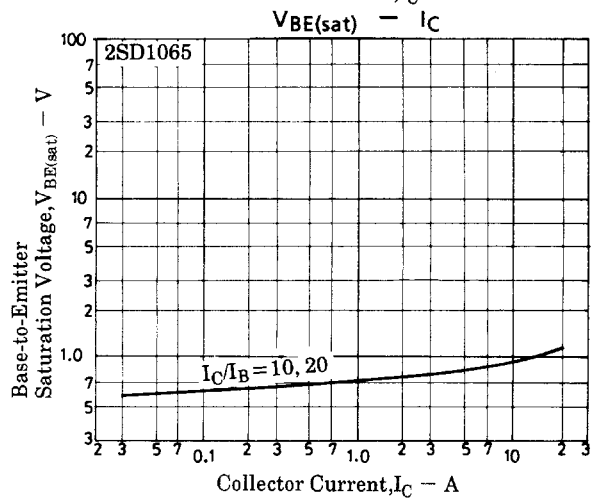

hFE – IC
2SB829
VCE = –2V
DC Current Gain,hFE
Collector Current,IC – A

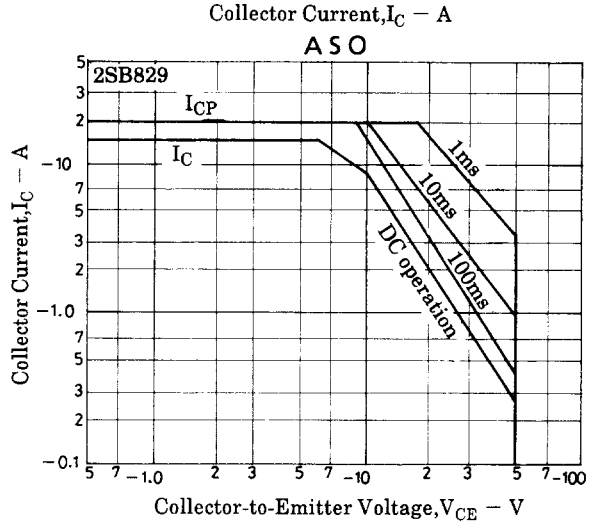

hFE – IC
2SD1065
VCE = 2V
DC Current Gain,hFE
Collector Current,IC – A

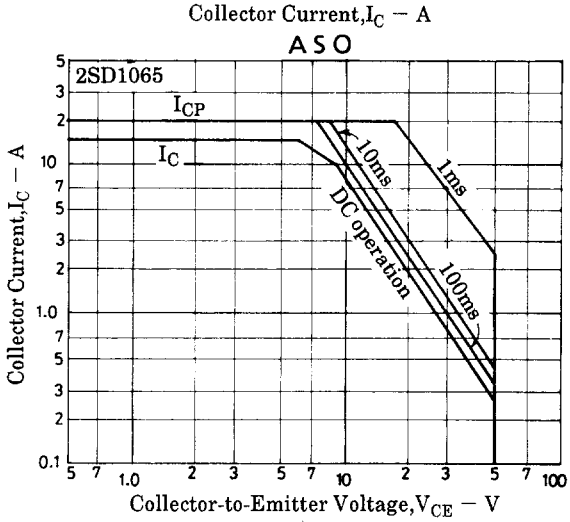

VCE(sat) – IC
2SB829
IC/IB = 20
IC/IB = 10
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
Collector Current,IC – A


VCE(sat) – IC
2SD1065
IC/IB = 20
IC/IB = 10
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
Collector Current,IC – A


VBE(sat) – IC
2SB829
IC/IB = 10, 20
Base-to-Emitter Saturation Voltage,VBE(sat) – V
Collector Current,IC – A


VBE(sat) – IC
2SD1065
IC/IB = 10, 20
Base-to-Emitter Saturation Voltage,VBE(sat) – V
Collector Current,IC – A


ASO
2SB829
ICP
IC
1ms
10ms
100ms
DC operation
Collector Current,IC – A
Collector-to-Emitter Voltage,VCE – V


ASO
2SD1065
ICP
IC
10ms
1ms
DC operation
100ms
Collector Current,IC – A
Collector-to-Emitter Voltage,VCE – V