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

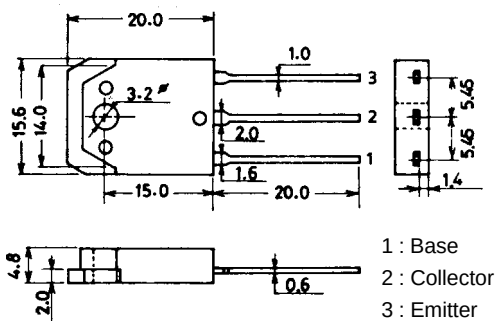
· Low-saturation collector-to-emitter voltage : $V_{CE(sat)}$ =–0.5V max.
· Wide ASO leading to high resistance to breakdown.

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

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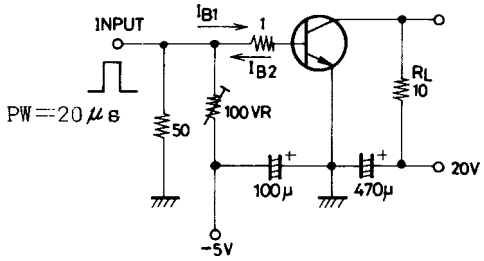
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)6			V
Turn-ON 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

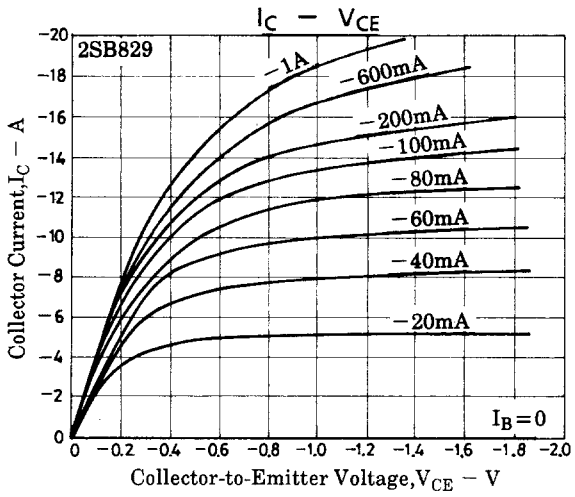
Switching Time Test Circuit

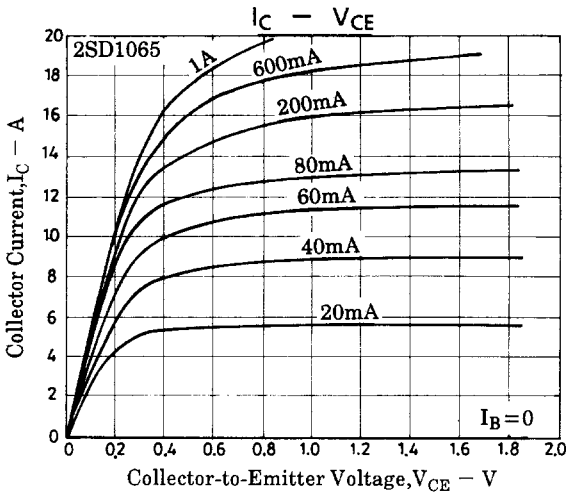


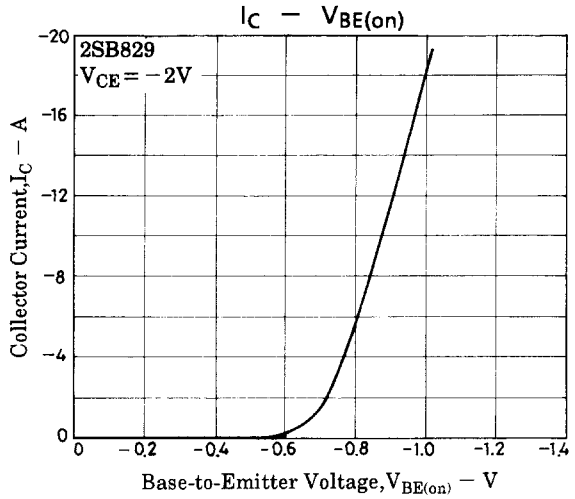
$10I_{B1} = -10I_{B2} = I_C = 2A$

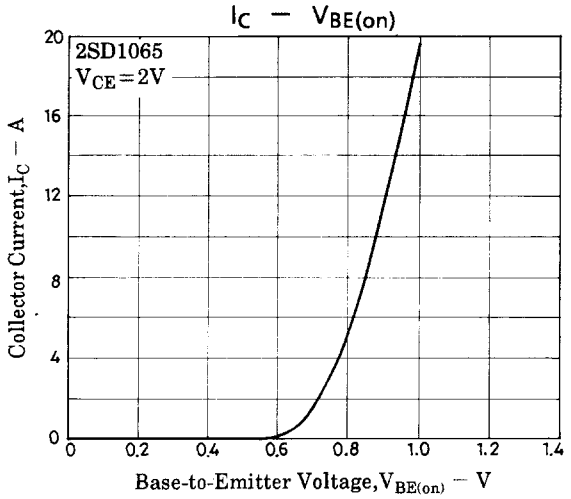
(For PNP, the polarity is reversed.)

Unit (resistance : Ω, capacitance: F)

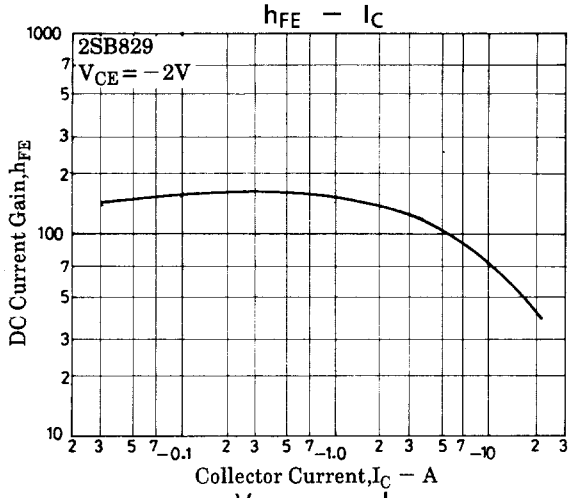




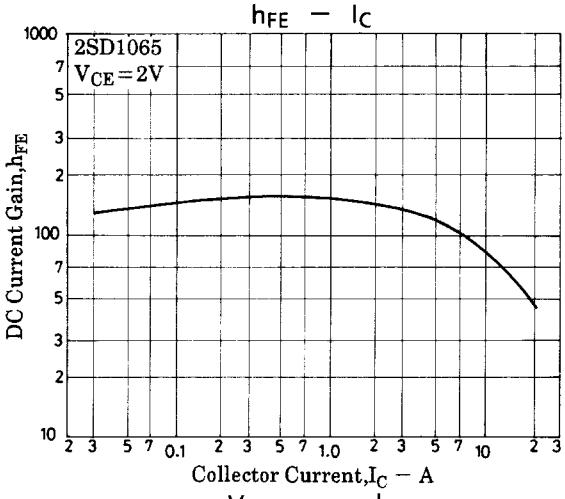




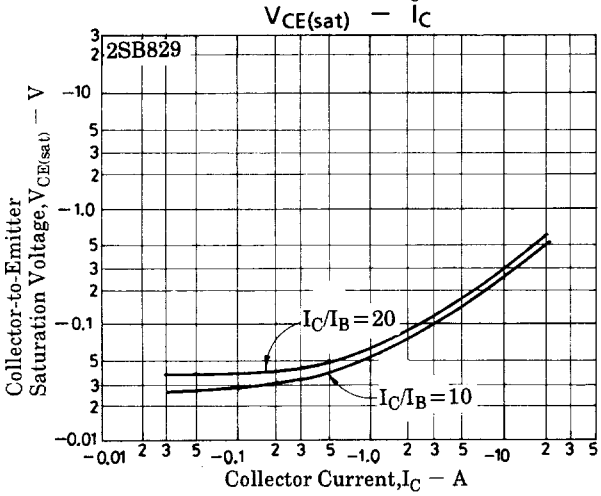
h_{FE} – I_C



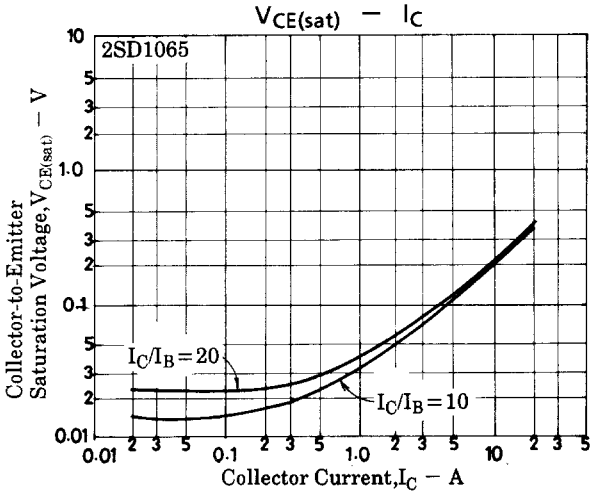
h_{FE} – I_C



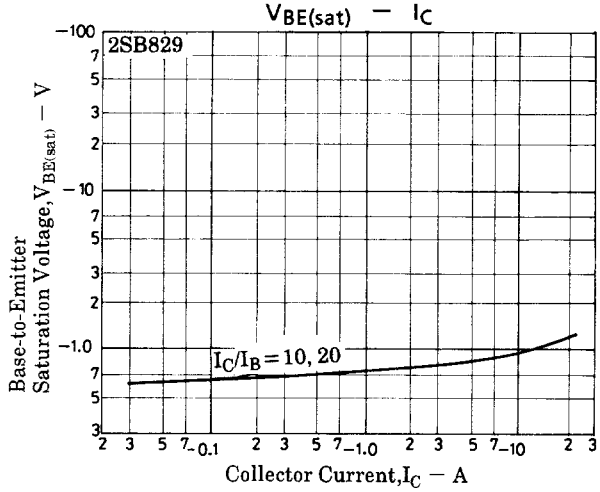
$V_{CE(sat)}$ – I_C



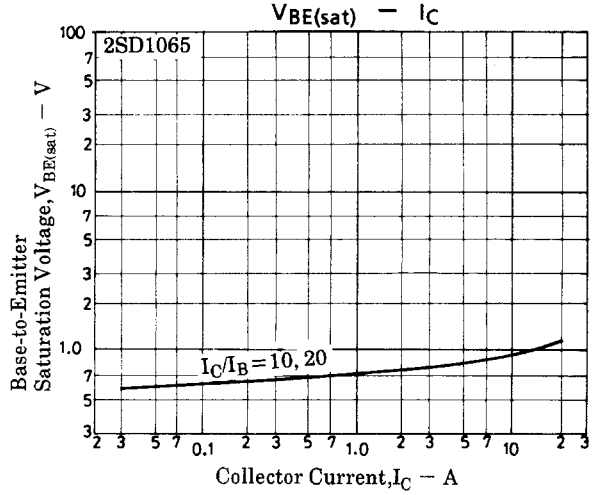
$V_{CE(sat)}$ – I_C



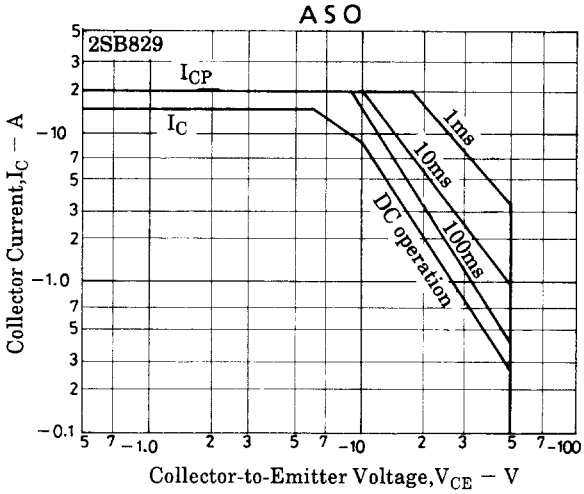
$V_{BE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C



ASO



ASO