



2SB829/2SD1065

50V/15A Switching Applications

Applications

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

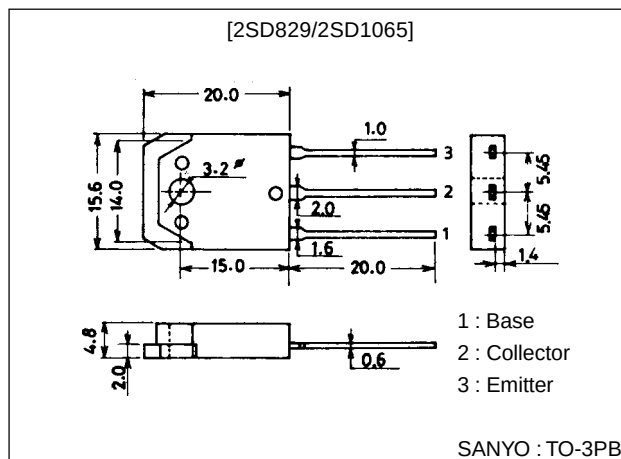
Features

- 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



() : 2SB829

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

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	$T_c = 25^\circ C$	90	W
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

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_{FE1}	$V_{CE} = (-)2V, I_C = (-)1A$	70*		280*	
	h_{FE2}	$V_{CE} = (-)2V, I_C = (-)8A$	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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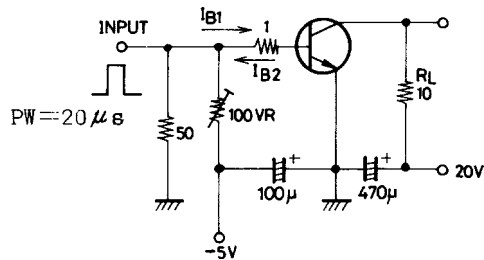
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

91098HA (KT)/10996TS (KOTO) 8-3880/4017KI/3145KI No.825-1/4

2SB829/2SD1065

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	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)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

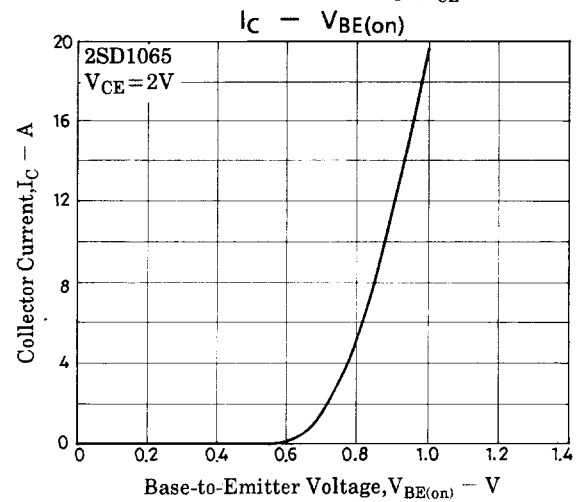
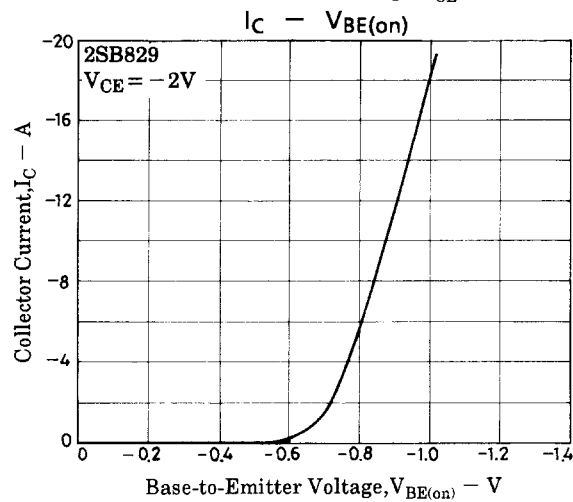
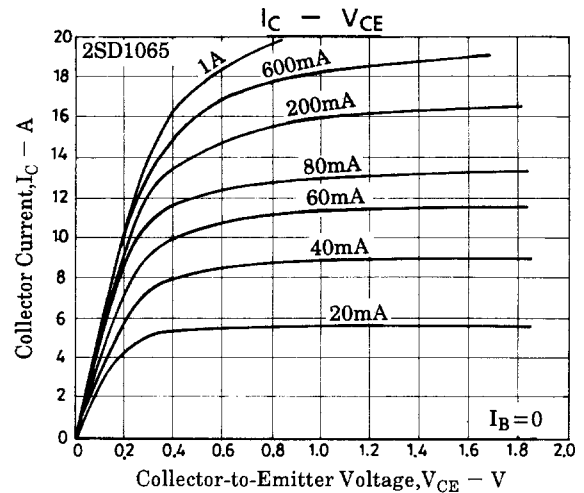
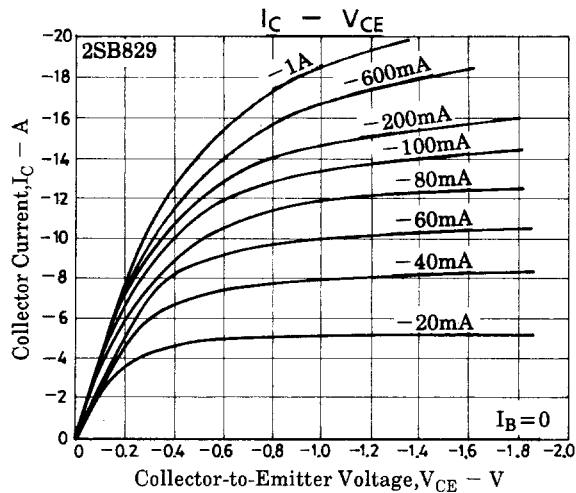
Switching Time Test Circuit



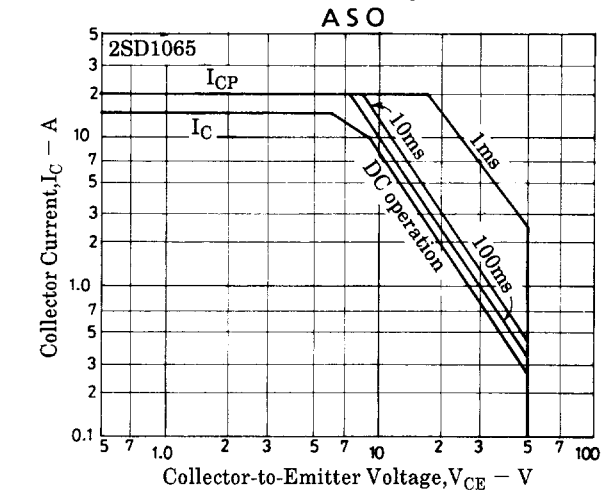
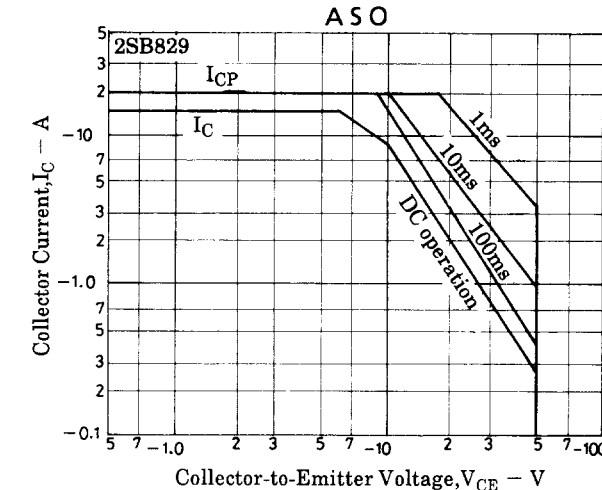
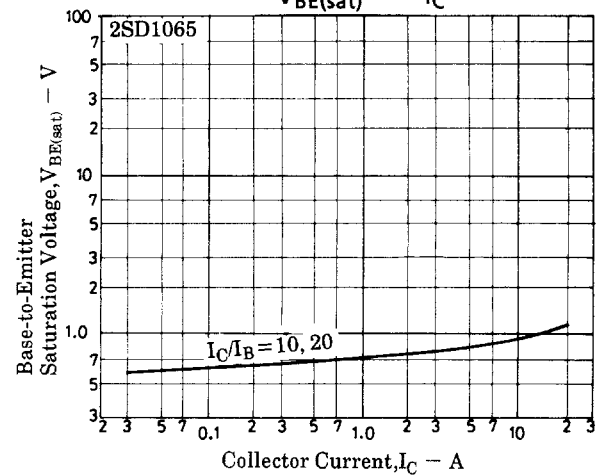
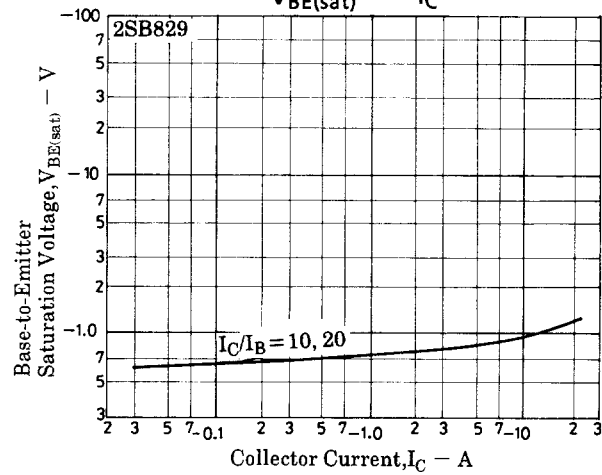
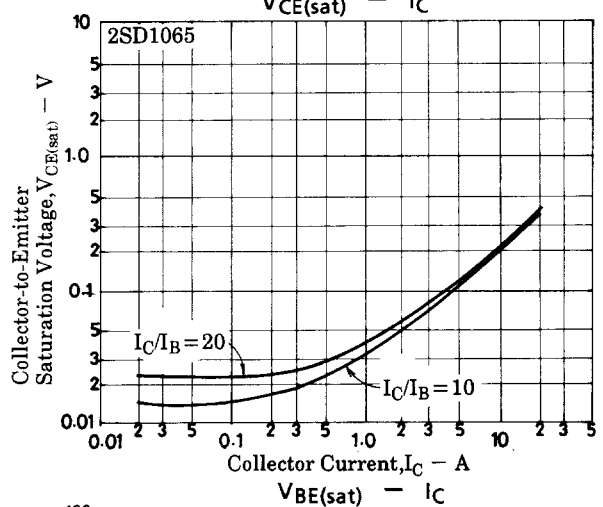
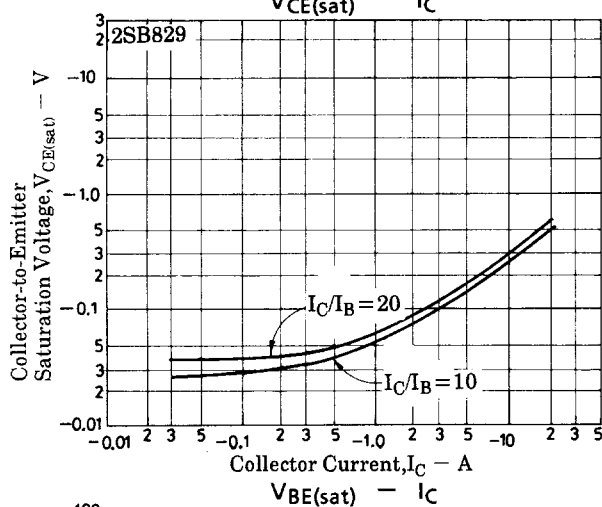
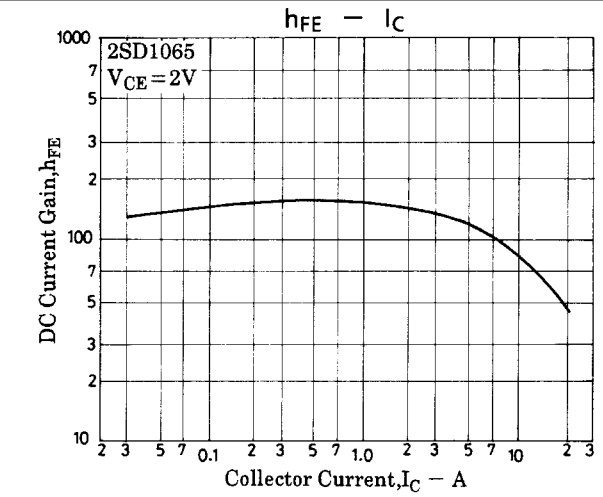
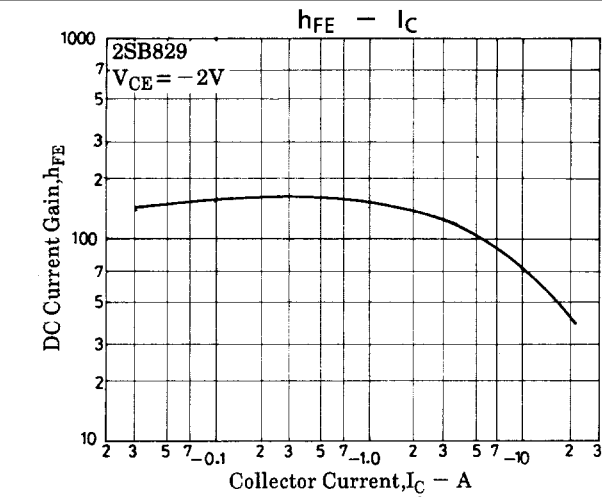
$$10I_{B1} = -10I_{B2} = I_C = 2A$$

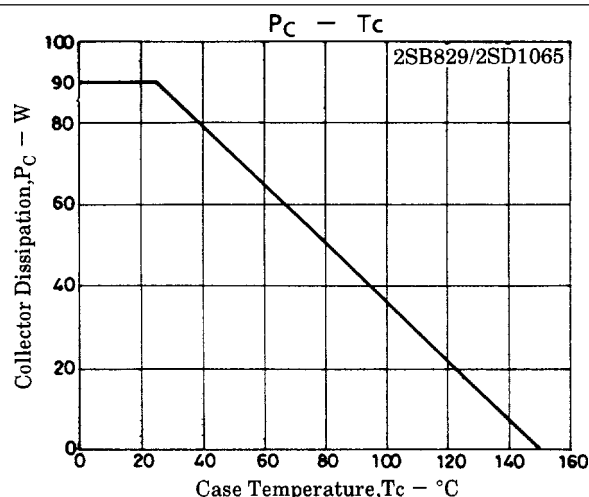
(For PNP, the polarity is reversed.)

Unit (resistance : Ω , capacitance: F)



2SB829/2SD1065





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