



2SB828/2SD1064

50V/12A Switching Applications

Applications

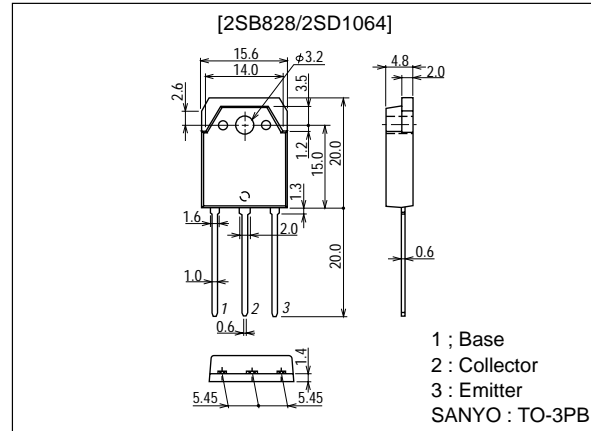
- Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

Features

- Low-saturation collector-to-emitter voltage :
 $V_{CE(sat)} = -0.5V$ (PNP), $0.4V$ (NPN) max.
- Wide ASO leading to high resistance to breakdown.

Package Dimensions

unit:mm
2022A



() : 2SB828

Specifications

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

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		(-)12	A
Collector Current (Pulse)	I_{CP}		(-)17	A
Collector Dissipation	P_C	$T_c=25^\circ\text{C}$	80	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

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}	$V_{CE} = (-)2V, I_C = (-)5A$	30			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5V, I_C = (-)1A$		10		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)6A, I_B = (-)0.3A$			0.4	V
					(-)0.5	V

* : The 2SB828/2SD1064 are classified by 1A h_{FE} as follows :

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Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

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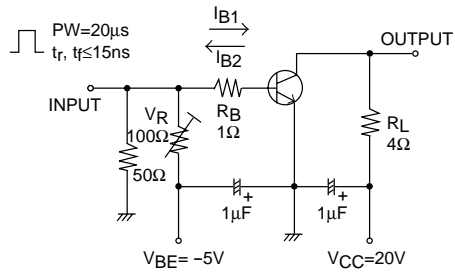
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2SB828/2SD1064

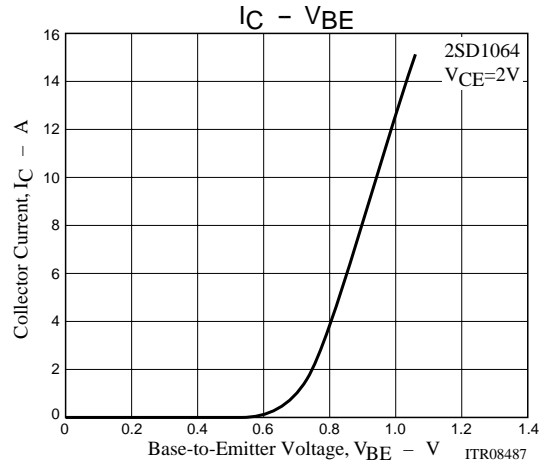
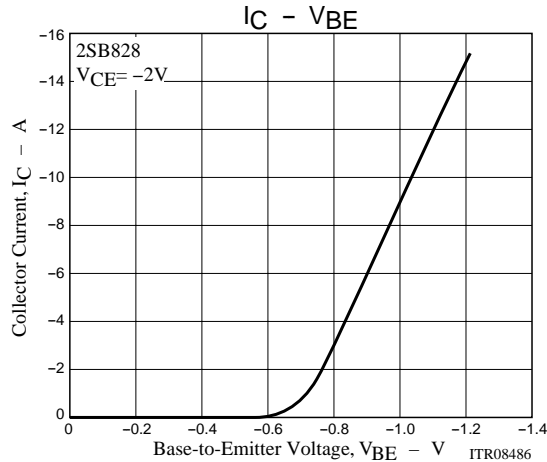
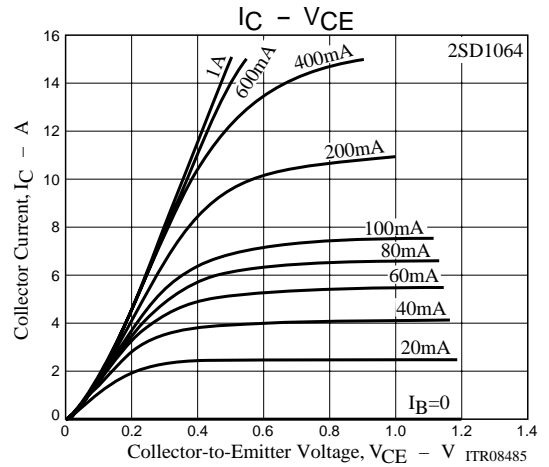
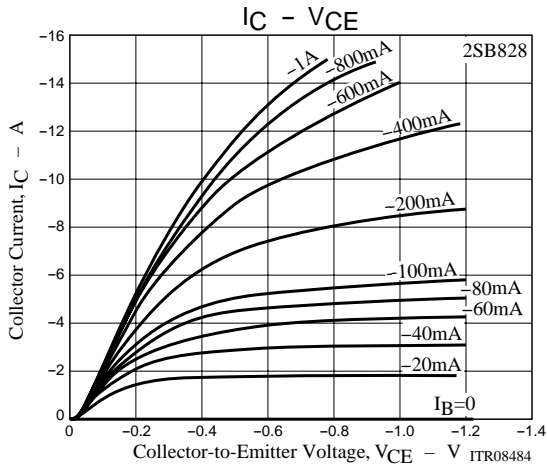
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown 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		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit		(0.4)		μs
				1.2		μs
Storage Time	t_{stg}	See specified Test Circuit		(0.1)		μs
				0.05		μs

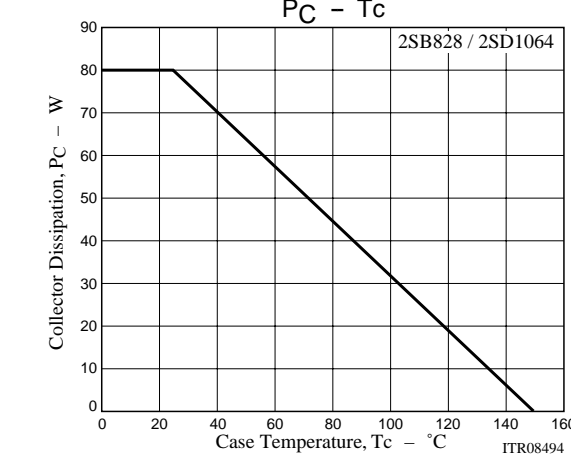
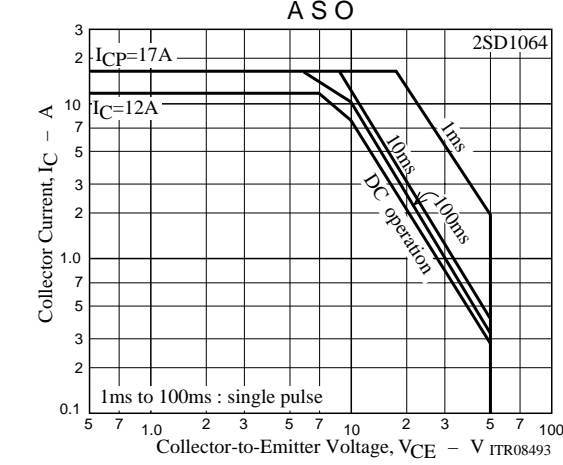
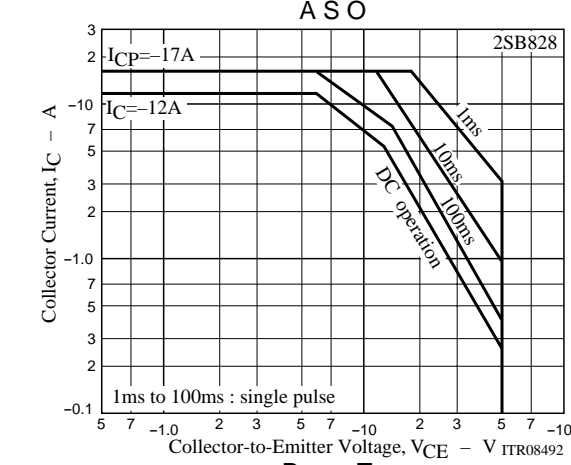
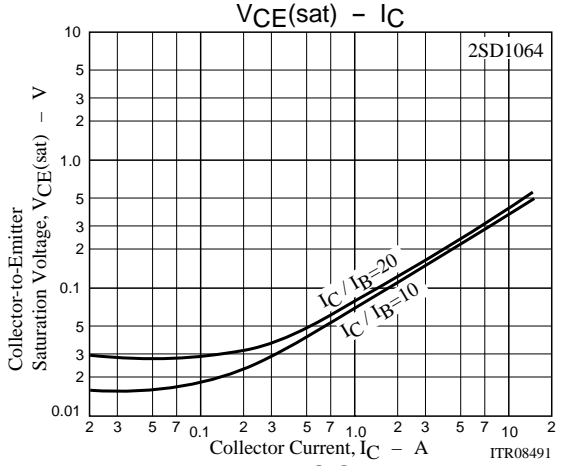
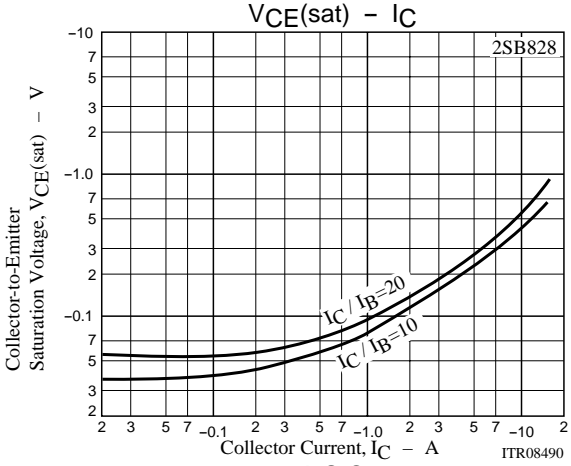
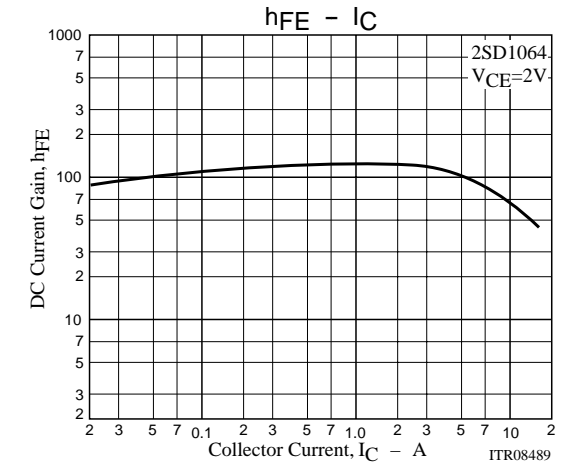
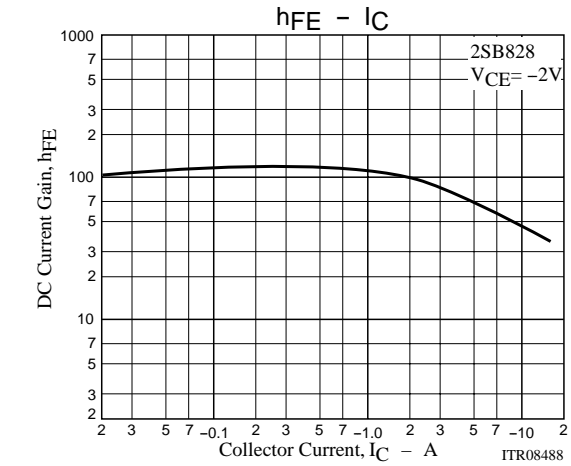
Switching Time Test Circuit



$I_C=10I_{B1}=-10I_{B2}=5A$
(For PNP, the polarity is reversed.)



2SB828/2SD1064



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