Ordering number:722G

PNP/NPN Epitaxial Planar Silicon Tranasistors

2SB828/2SD1064

50V/12A Switching Applications

Applications

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

Features

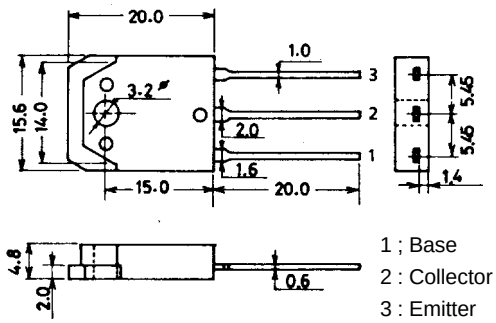
· Low-saturation collector-to-emitter voltage : $V_{CE(sat)}$=–0.5V(PNP), 0.4V(NPN) max.
· Wide ASO leading to high resistance to breakdown.

Package Dimensions

unit:mm

2022A

[2SB828/2SD1064]



SANYO : TO-3PB

( ) : 2SB828

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		(–)12	A
Collector Current (Pulse)	I_{CP}		(–)17	A
Collector Dissipation	P_C	Tc=25˚C	80	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=(–)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

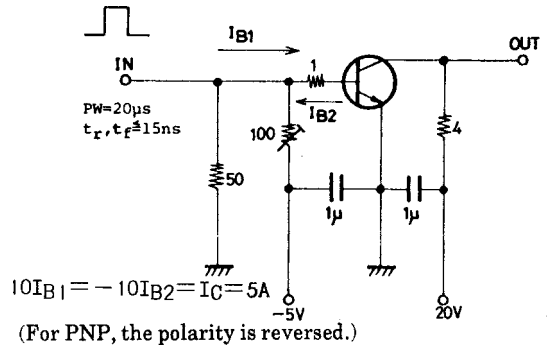
* : The 2SB828/2SD1064 are classified by 1A h_{FE} as follows :

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

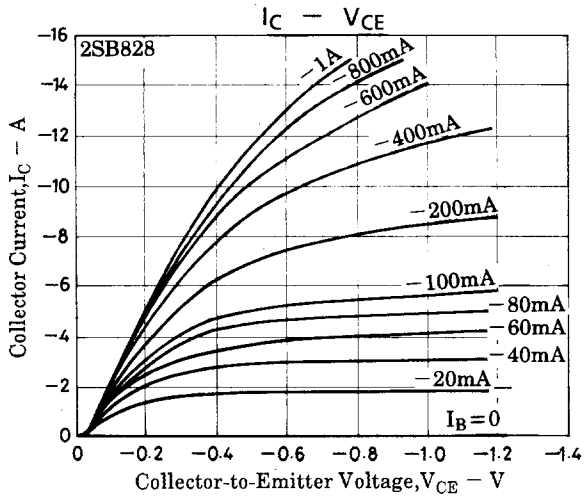
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)6			V
Turn-ON Time	t_{on}	See specified Test Circuit		(0.2)		μs
				0.1		μs
Fall Time	t_f	See specified Test Circuit		(0.4)		μs
				1.2		μs
Storage Time	t_{stg}	See specified Test Circuit		(0.1)		μs
				0.05		μs

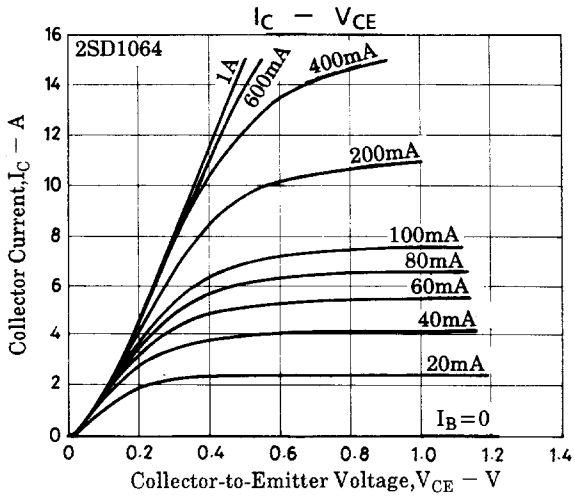
Switching Time Test Circuit

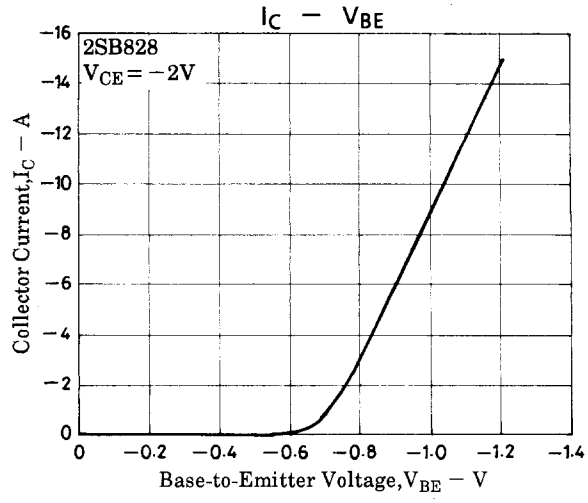


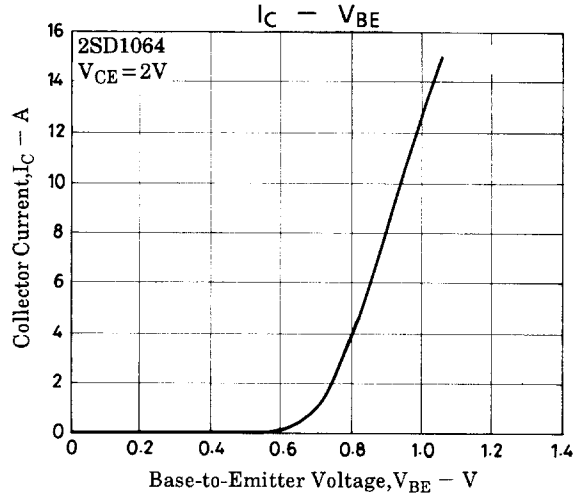
(For PNP, the polarity is reversed.)

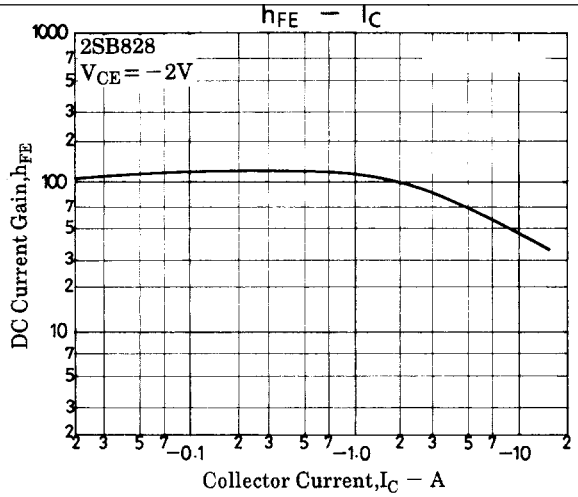
Unit (resistance : Ω, capacitance : F)

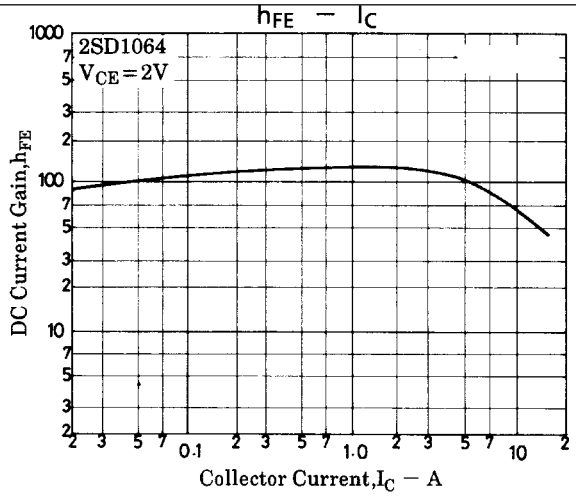


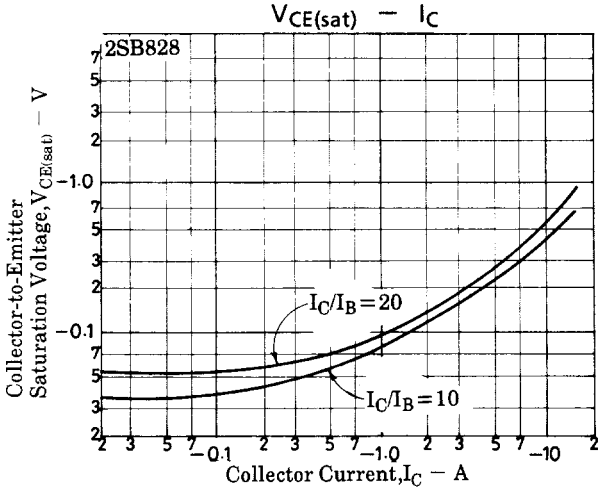


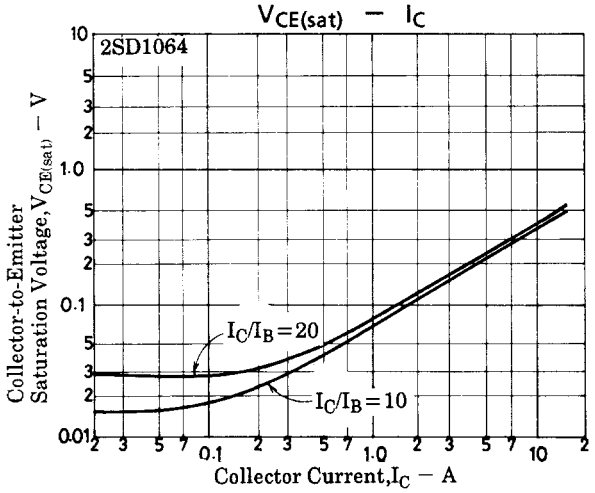


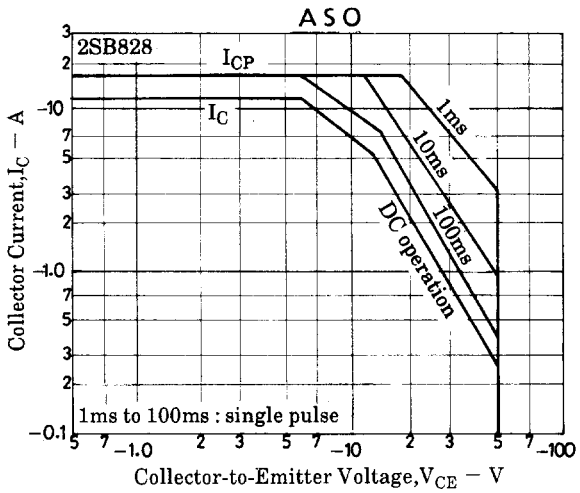


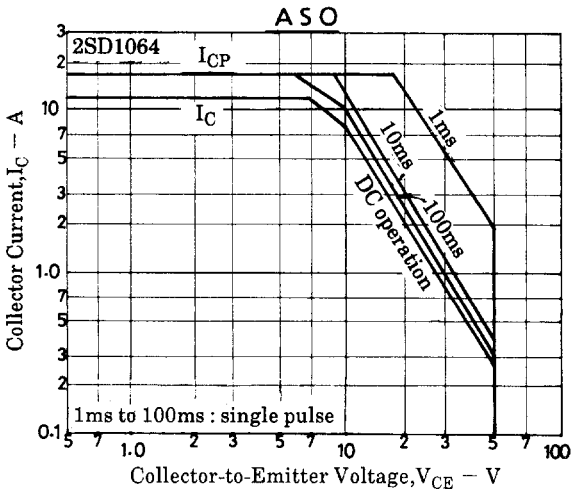

hFE – IC
2SB828
VCE = –2V
DC Current Gain, hFE
Collector Current, IC – A

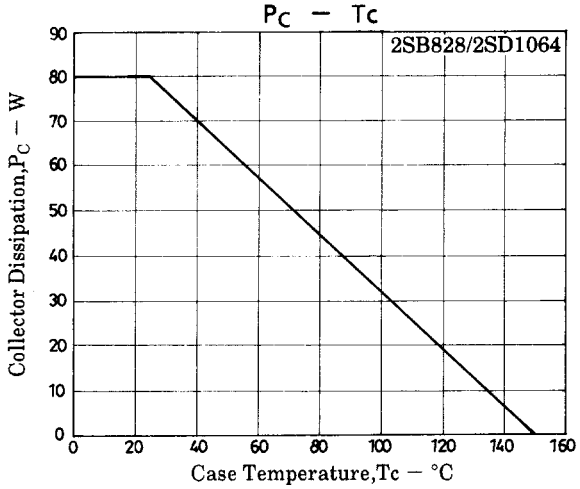

hFE – IC
2SD1064
VCE = 2V
DC Current Gain, hFE
Collector Current, IC – A


VCE(sat) – IC
2SB828
IC/IB = 20
IC/IB = 10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A


VCE(sat) – IC
2SD1064
IC/IB = 20
IC/IB = 10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A


ASO
2SB828
ICP
IC
1ms
10ms
100ms
DC operation
1ms to 100ms : single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V


ASO
2SD1064
ICP
IC
1ms
10ms
100ms
DC operation
1ms to 100ms : single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V


PC – Tc
2SB828/2SD1064
Collector Dissipation, PC – W
Case Temperature, Tc – °C