Ordering number:688H

PNP/NPN Epitaxial Planar Silicon Tranasistors

2SB827/2SD1063

50V/7A Switching Applicationsa

Applications

· Universal high current switching as solenoid driving, high speed inverter and converter.

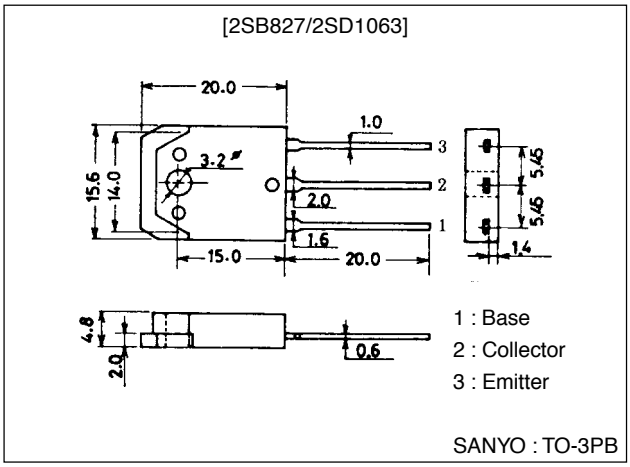
Features

· Low collector-to-emitter saturation voltage : $V_{CE(sat)}$=(–)0.4V max.
· Wide ASO.

Package Dimensions

unit:mm

2022A



( ) : 2SB827

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		(–)7	A
Collector Current (Pulse)	I_{CP}		(–)14	A
Collector Dissipation	P_C	Tc=25˚C	60	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=(–)4A, I_B=(–)0.4A			(–)0.4	V

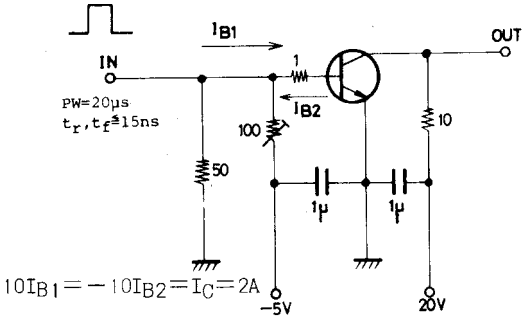
* : The 2SB827/2SD1063 are classified by 1A h_{FE} as follows :

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

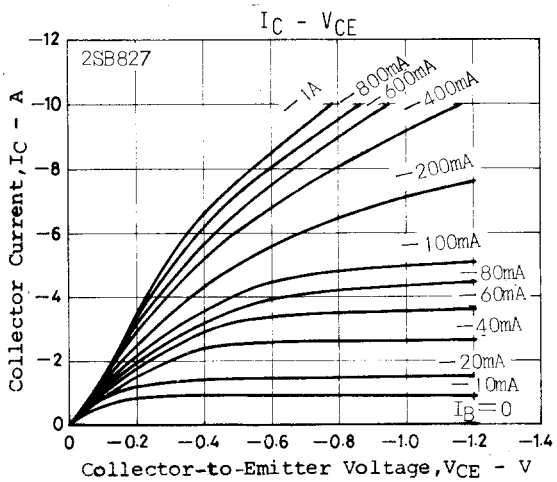
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)6			V
Turn-ON Time	t_{on}	See specified test circuit.		0.2		μs
Fall Time	t_f	See specified test circuit.		(0.1)		μs
				0.3		μs
Storage Time	t_{stg}	See specified test circuit.		(0.7)		μs
				0.9		μs

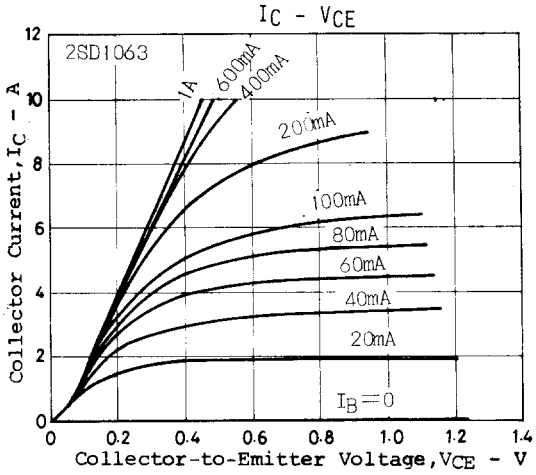
Switching Time Test Circuit

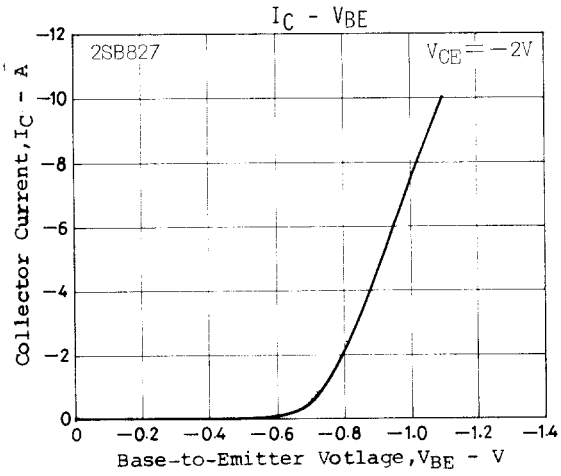


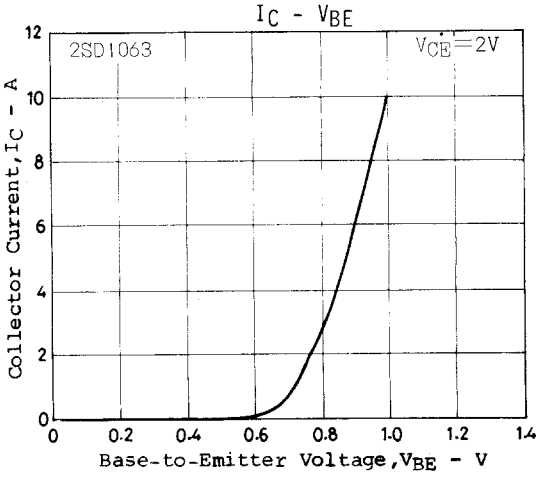
(For PNP, the porality is reversed.)

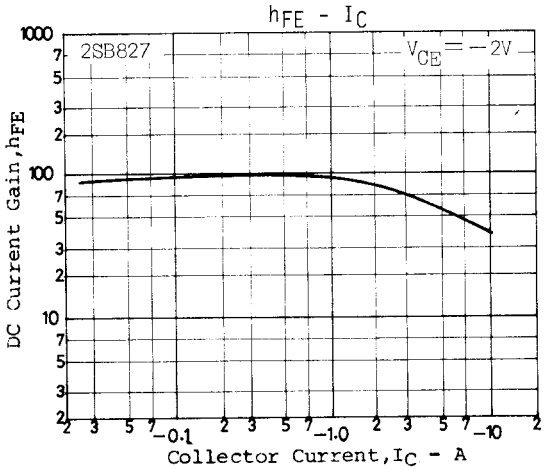
Unit (resistance : Ω, capacitance : F)

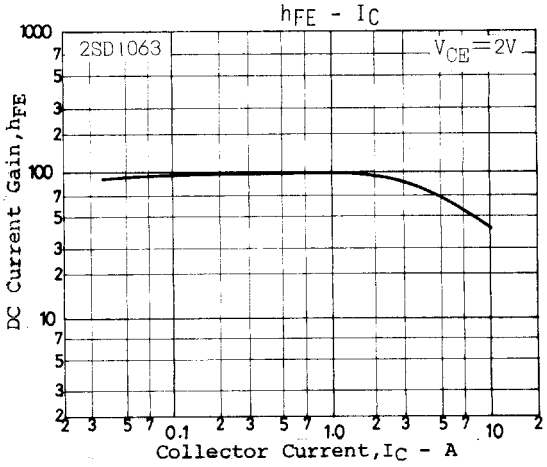


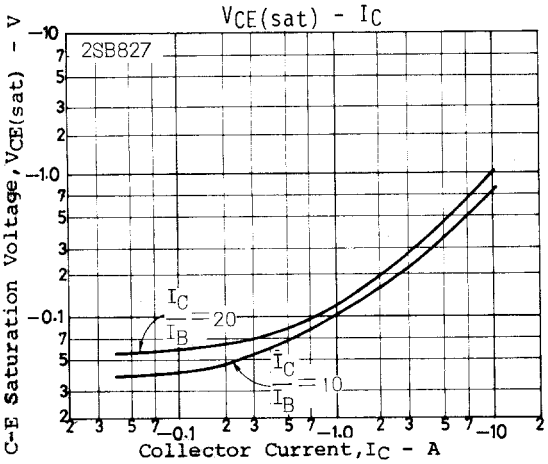


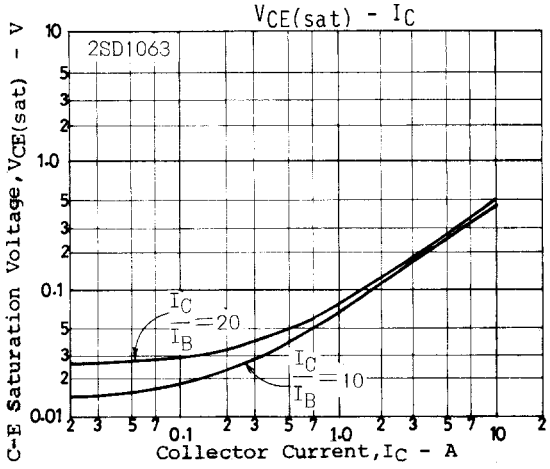


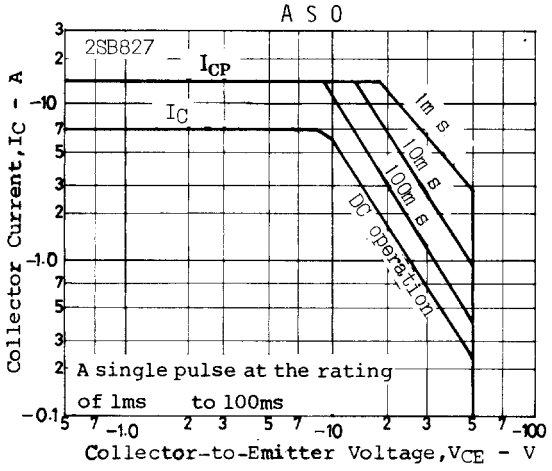


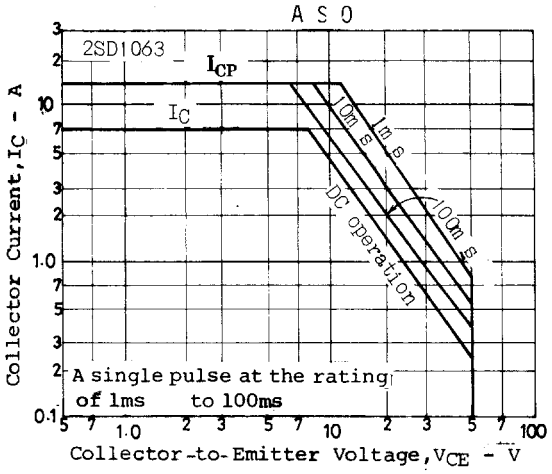

hFE - IC
2SB827
VCE=−2V
DC Current Gain,hFE
Collector Current,IC - A

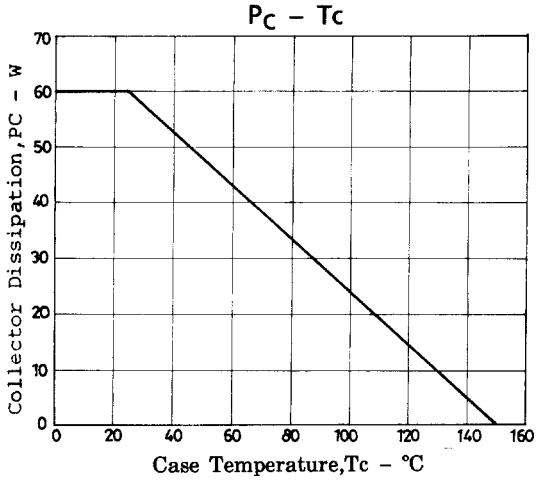

hFE - IC
2SD1063
VCE=2V
DC Current Gain,hFE
Collector Current,IC - A


VCE(sat) - IC
2SB827
IC/IB=20
IC/IB=10
C-E Saturation Voltage,VCE(sat) - V
Collector Current,IC - A


VCE(sat) - IC
2SD1063
IC/IB=20
IC/IB=10
C-E Saturation Voltage,VCE(sat) - V
Collector Current,IC - A


A S O
2SB827
ICP
IC
1m s
10m s
100m s
DC operation
A single pulse at the rating
of 1ms to 100ms
Collector Current,IC - A
Collector-to-Emitter Voltage,VCE - V


A S O
2SD1063
ICP
IC
1m s
10m s
100m s
DC operation
A single pulse at the rating
of 1ms to 100ms
Collector Current,IC - A
Collector-to-Emitter Voltage,VCE - V


PC - Tc
Collector Dissipation,PC - W
Case Temperature,Tc - °C