Ordering number:ENN1028B

PNP/NPN Epitaxial Planar Silicon Darlington Transistors

2SB912/2SD1229

Driver Applications

Applications

· Motor drivers, printer hammer drivers, relay drivers, voltage reguraltor control.

Features

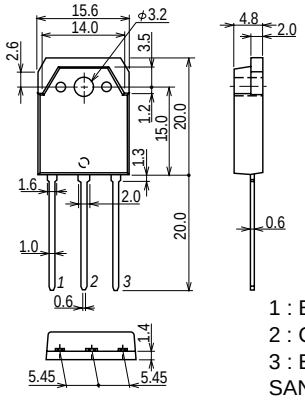
· High DC current gain.
· High current capacity and wide ASO.
· Low saturation voltage.

Package Dimensions

unit:mm

2022A

[2SB912/2SD1229]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO-3PB

( ) : 2SB912

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)70	V
Collector-to-Emitter Voltage	V_{CEO}		(–)60	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)10	A
Collector Current (Pulse)	I_{CP}		(–)15	A
Collector Dissipation	P_C		2.5	W
		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}=(–)5V, I_C=0			(–)3.0	mA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)5A	2000	5000		
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)5A		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)5A, I_B=(–)10mA		0.9	(–)1.5	V
				(–1.0)		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)5A, I_B=(–)10mA			(–)2.0	V

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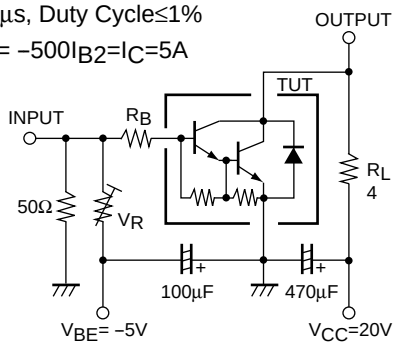
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)5mA, I_E=0	(–)70			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)50mA, R_{BE}=∞	(–)60			V
Turn-ON Time	t_{on}	See specified Test Circuit		(0.5)		μs
				0.6		μs
Storage Time	t_{stg}	See specified Test Circuit		(1.5)		μs
				3.0		μs
Fall Time	t_f	See specified Test Circuit		(1.7)		μs
				1.8		μs

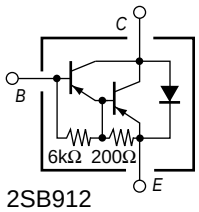
Switching Time Test Circuit

PW=50μs, Duty Cycle≤1%
$500I_{B1}$= $-500I_{B2}$=I_C=5A

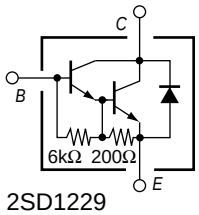


(For PNP, the polarity is reversed.)

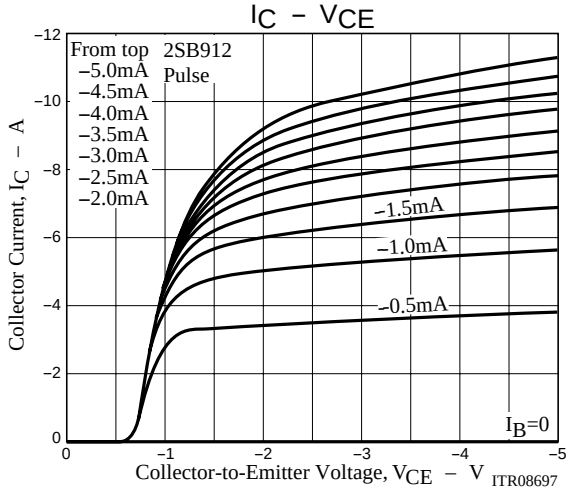
Electrical Connection

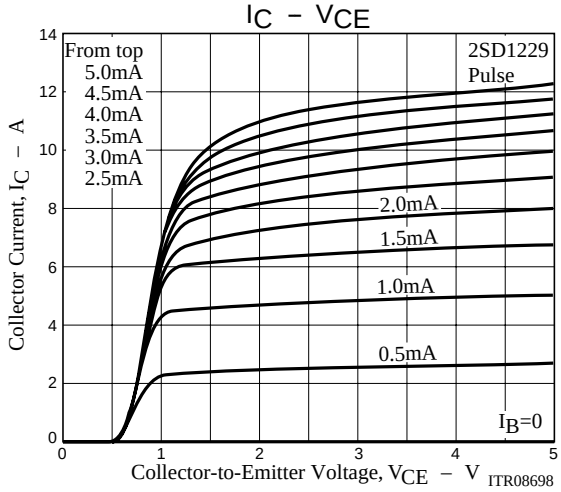


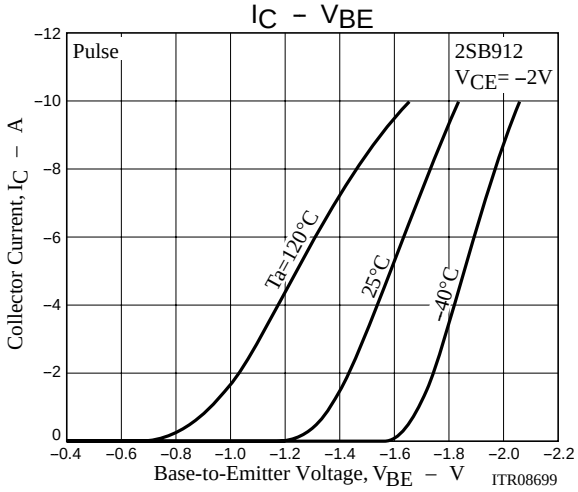
2SB912

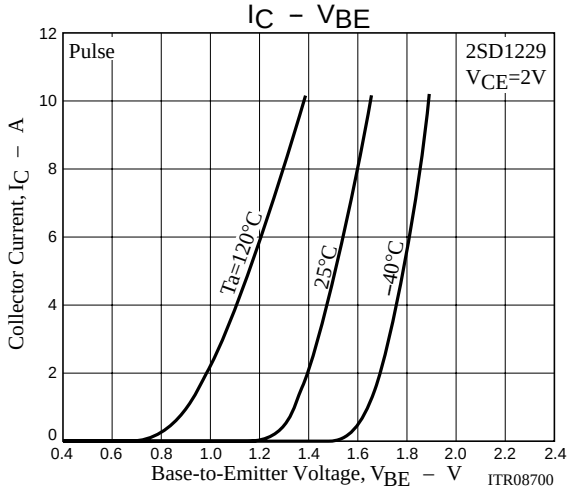


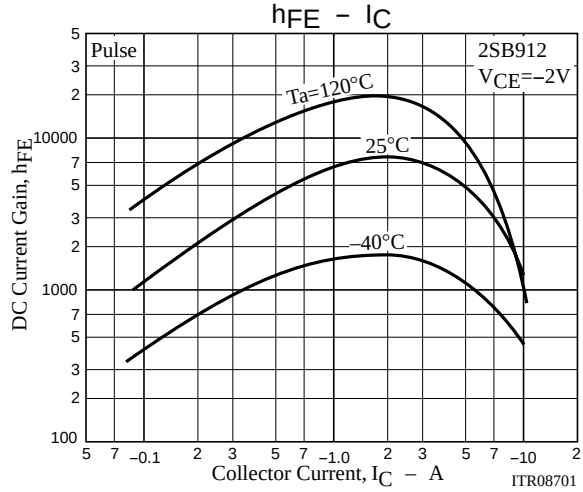
2SD1229

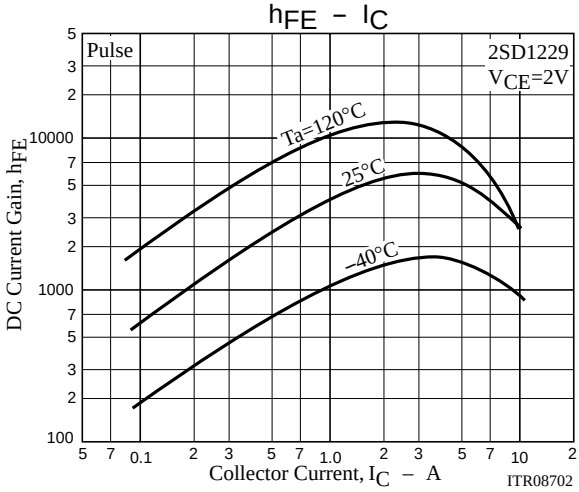


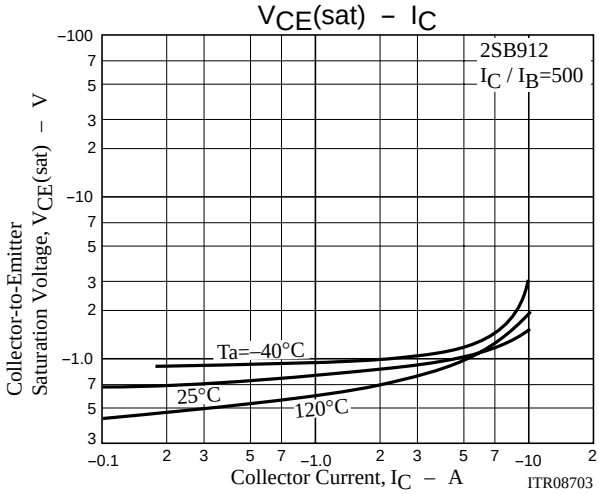


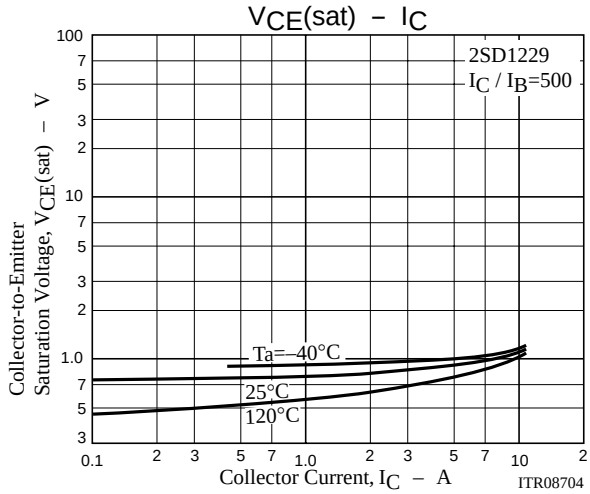


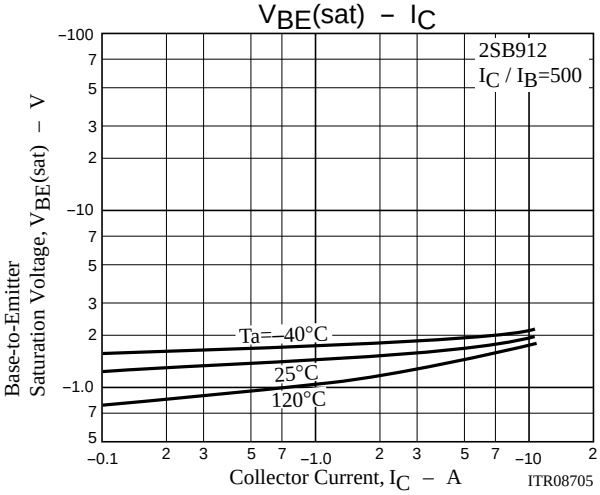


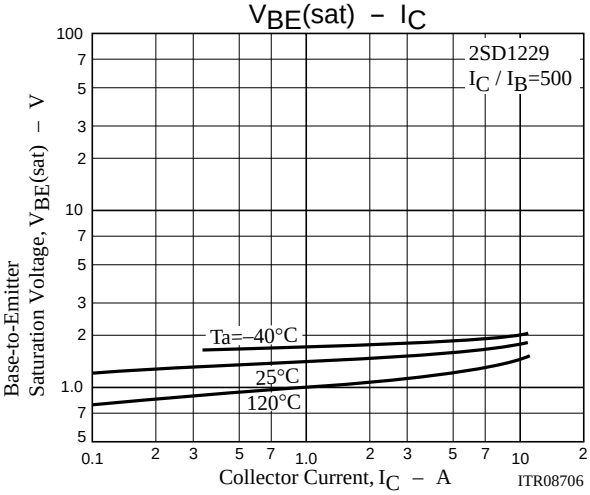

hFE – IC
Pulse
2SB912
VCE=–2V
Ta=120°C
25°C
–40°C
DC Current Gain, hFE
Collector Current, IC – A
ITR08701

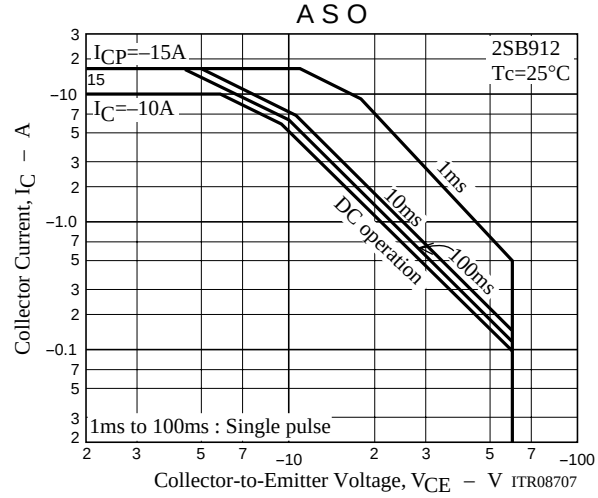

hFE – IC
Pulse
2SD1229
VCE=2V
Ta=120°C
25°C
–40°C
DC Current Gain, hFE
Collector Current, IC – A
ITR08702

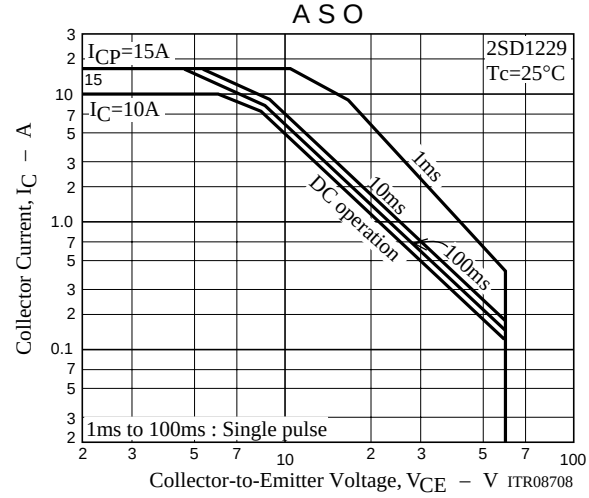

VCE(sat) – IC
2SB912
IC / IB=500
Ta=–40°C
25°C
120°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR08703


VCE(sat) – IC
2SD1229
IC / IB=500
Ta=–40°C
25°C
120°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR08704


VBE(sat) – IC
2SB912
IC / IB=500
Ta=–40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR08705


VBE(sat) – IC
2SD1229
IC / IB=500
Ta=–40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR08706


A S O
2SB912
Tc=25°C
ICP=–15A
IC=–10A
1ms
10ms
DC operation
100ms
1ms to 100ms : Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR08707


A S O
2SD1229
Tc=25°C
ICP=15A
IC=10A
1ms
10ms
DC operation
100ms
1ms to 100ms : Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR08708