Ordering number:EN3260A

2SB1231 : PNP Epitaxial Planar Silicon Transistor
2SD1841 : NPN Triple Diffused Planar Silicon Transistor

2SB1231/2SD1841

100V/25A Switching Applications

Applications

· Motor drivers, relay drivers, converters, and other general high-current switching applications.

Features

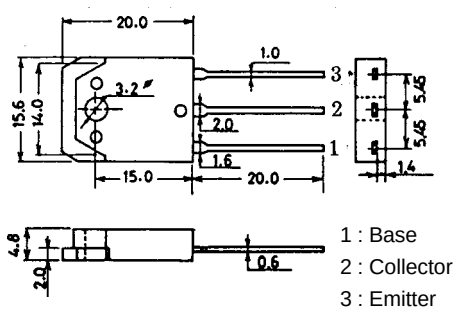
· Large current capacity and wide ASO.
· Low saturation voltage.

Package Dimensions

unit:mm

2022A

[2SB1231/2SD1841]



1 : Base
2 : Collector
3 : Emitter

SANYO : TO-3PB

( ) : 2SB1231

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)110	V
Collector-to-Emitter Voltage	V_{CEO}		(–)100	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)25	A
Collector Current (Pulse)	I_{CP}		(–)40	A
Base Current	I_B		(–)8	A
Collector Dissipation	P_C		3.0	W
		Tc=25˚C	120	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}=(–)100V, I_E=0			(–)0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)5V, I_C=0			(–)0.1	mA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)2.5A	50*		140*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)10A	20			
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)10A, I_B=(–)1A			(–)0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)10A, I_B=(–)1A			(–)1.5	V

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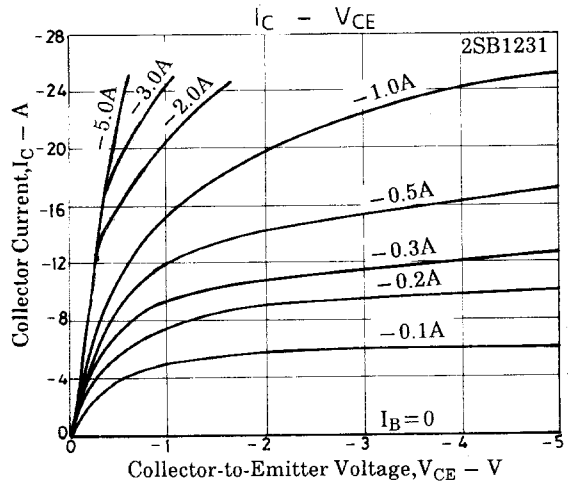
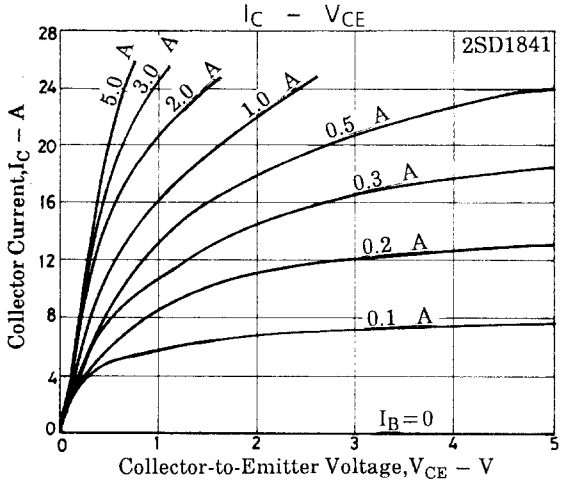
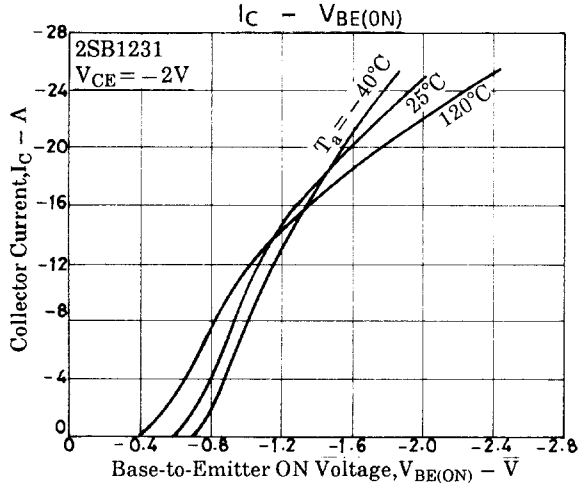
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)110			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)5mA, R_{BE}=∞	(–)100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_C=(–)1mA, I_C=0	(–)6			V

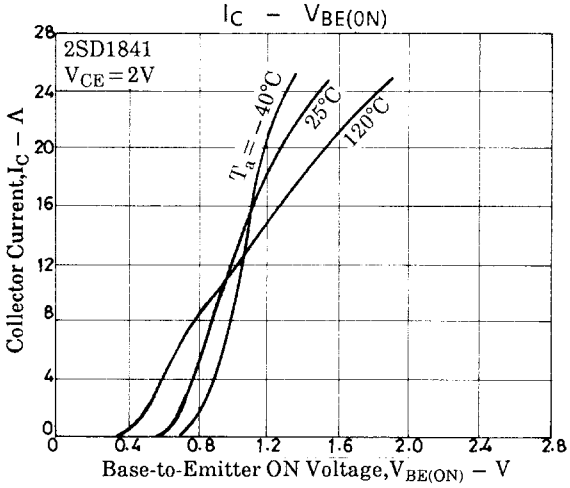
* : For the h_{FE}1 of the 2SB1231/2SD1841, specify at least two ranks in principle.

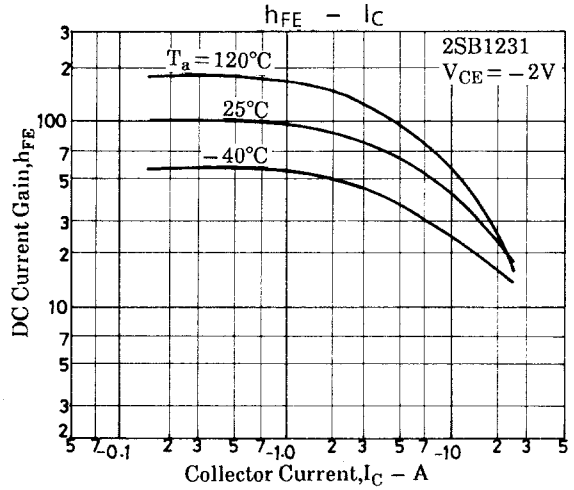
50	P	100	70	Q	140

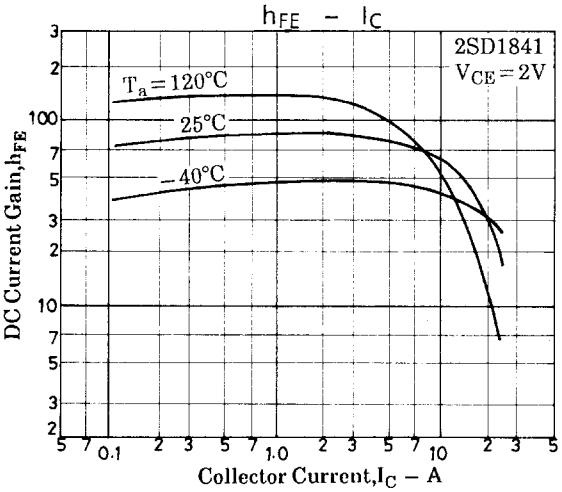


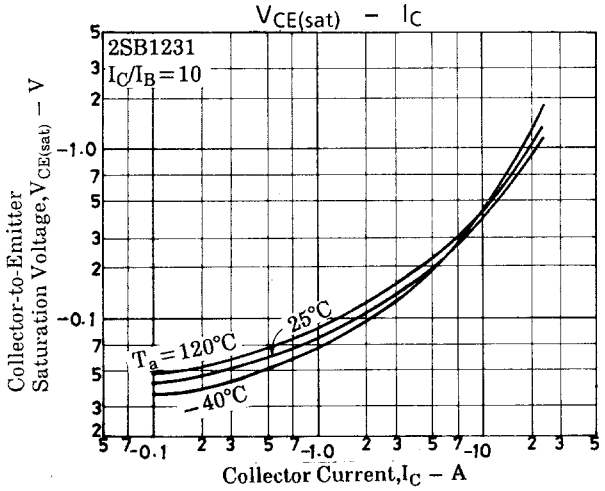


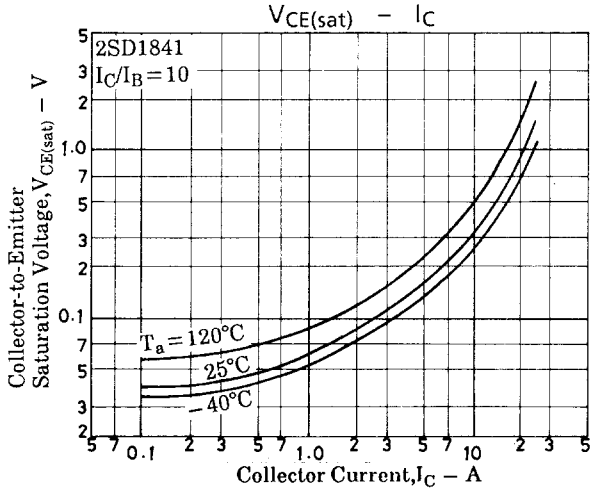


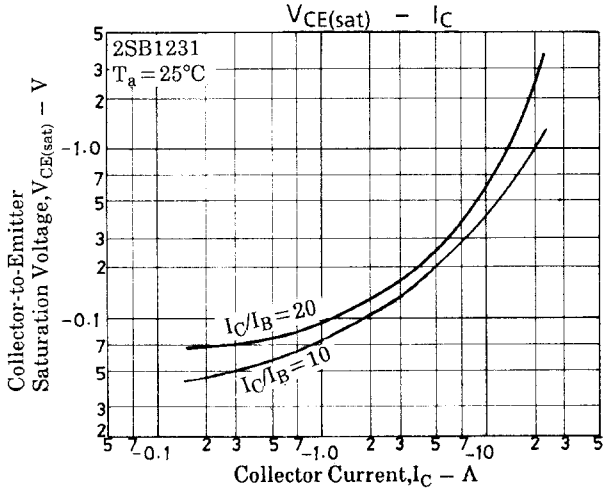


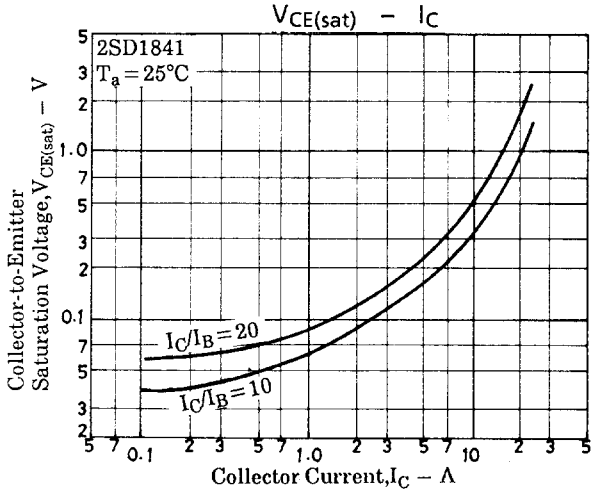


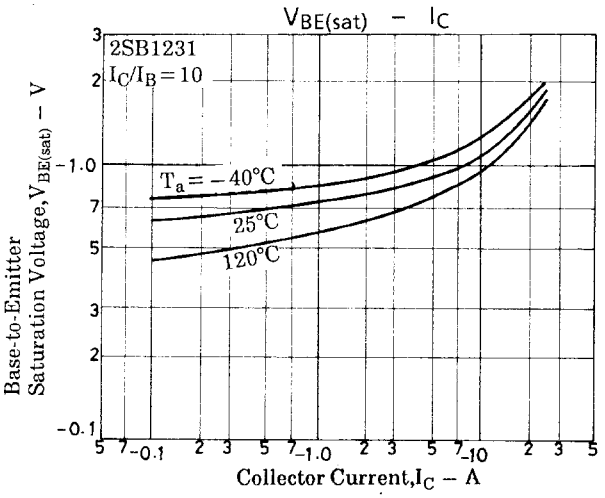


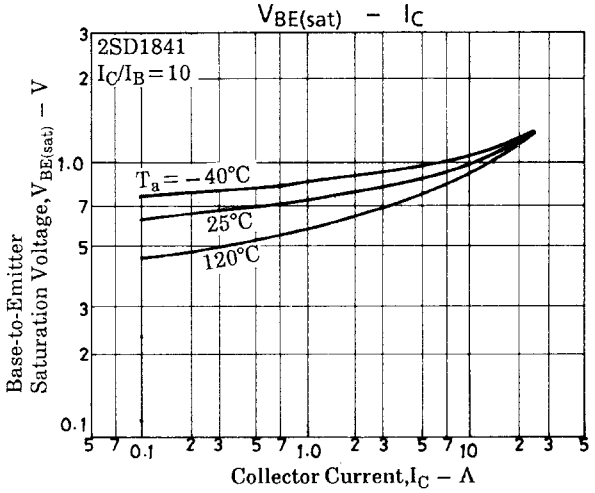

VCE(sat) – IC
2SB1231
IC/IB=10
Ta=120°C
25°C
–40°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A

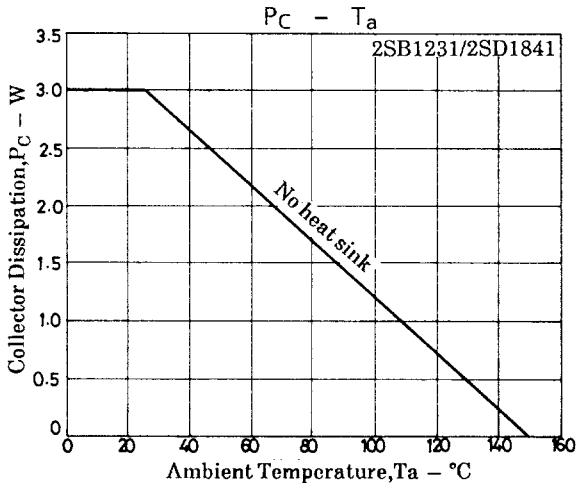

VCE(sat) – IC
2SD1841
IC/IB=10
Ta=120°C
25°C
–40°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A

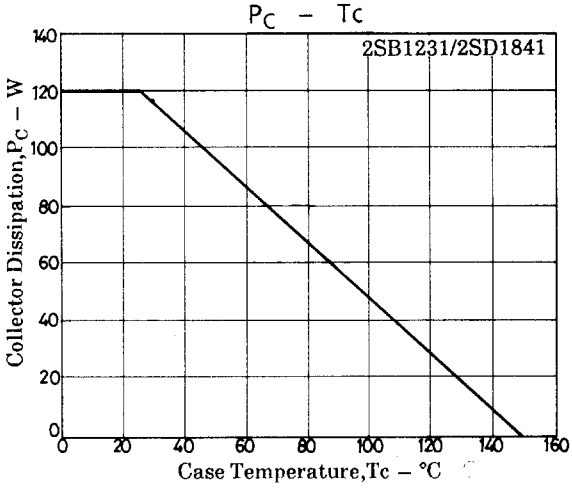

VCE(sat) – IC
2SB1231
Ta=25°C
IC/IB=20
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A


VCE(sat) – IC
2SD1841
Ta=25°C
IC/IB=20
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A


VBE(sat) – IC
2SB1231
IC/IB=10
Ta=–40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A


VBE(sat) – IC
2SD1841
IC/IB=10
Ta=–40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A


PC – Ta
2SB1231/2SD1841
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C


PC – Tc
2SB1231/2SD1841
Collector Dissipation, PC – W
Case Temperature, Tc – °C