Ordering number : EN3259A

SANYO Semiconductors

DATA SHEET

PNP / NPN Epitaxial Planar Silicon Transistors

2SB1230 / 2SD1840 — High-Current 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.

Specifications ( ) : 2SB1230

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		(–)15	A
Collector Current (Pulse)	I_{CP}		(–)25	A
Base Current	I_B		(–)5	A
Collector Dissipation	P_C		3.0	W
		Tc=25°C	100	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=0A			(–)0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0A			(–)0.1	mA
DC Current Gain	$h_{FE}1$	V_{CE}=(-)2V, I_C=(-)1.5A	50*		140*	
	$h_{FE}2$	V_{CE}=(-)2V, I_C=(-)6A	20			
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(-)6A, I_B=(-)0.6A			(–)0.8	V
Base-to-Emitterr Saturation Voltage	V_{BE}(sat)	I_C=(-)6A, I_B=(-)0.6A			(–)1.5	V

Continued on next page.

* : For the $h_{FE}1$ of the 2SB1230 / 2SD1840, specify two ranks or more in principle.

Rank	P	Q
h_{FE}	50 to 100	70 to 140

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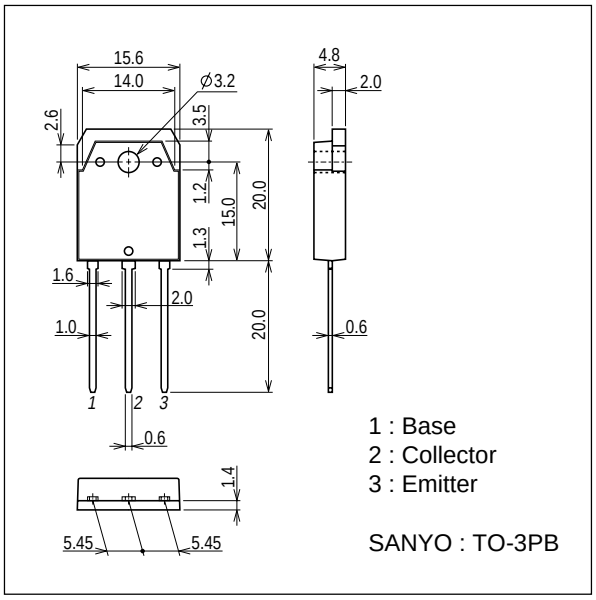
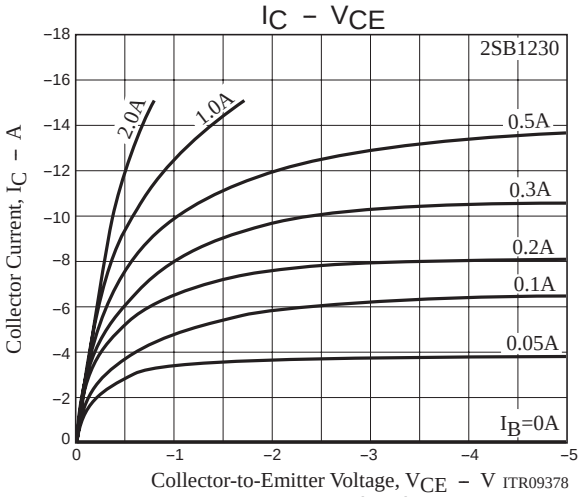
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)1mA, I_E=0A	(-)110			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)5mA, R_{BE}=∞	(-)100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)1mA, I_C=0A	(-)6			V

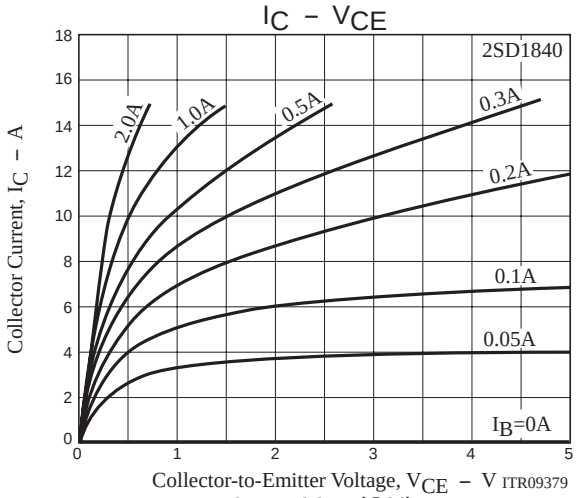
Package Dimensions

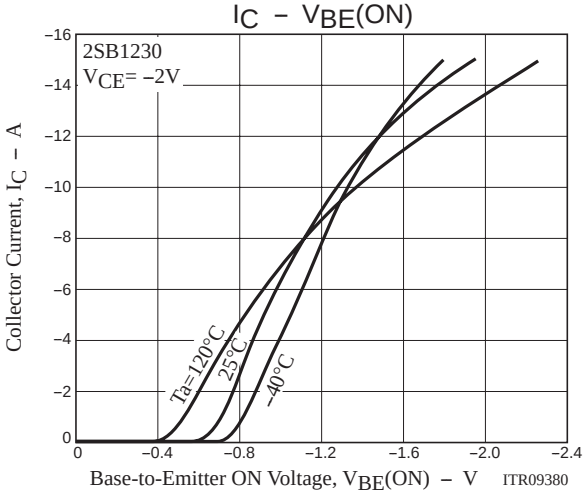
unit : mm

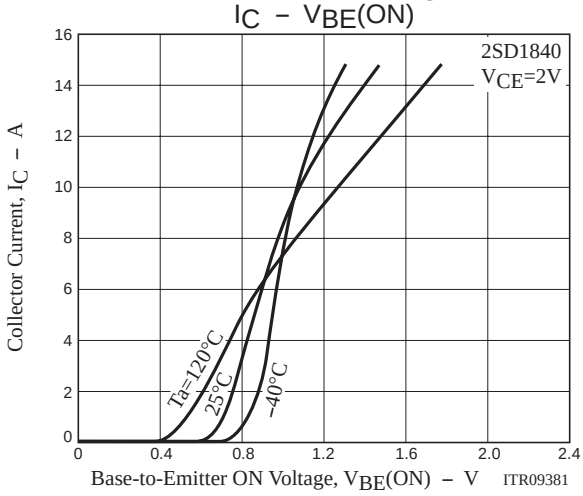
7503-003

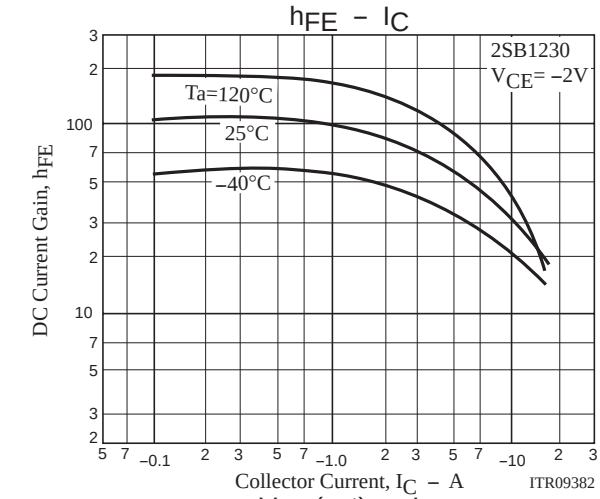


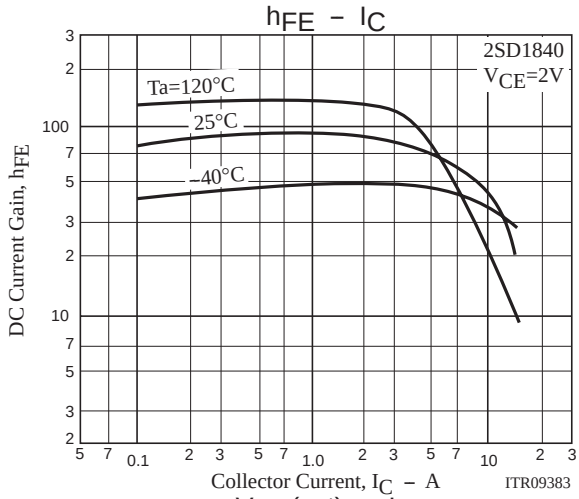


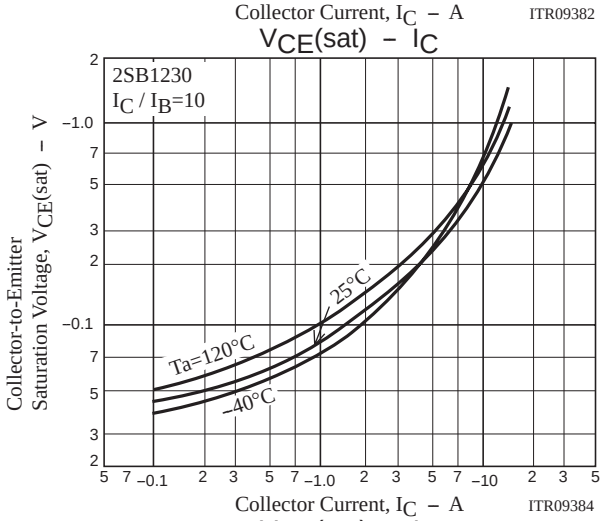


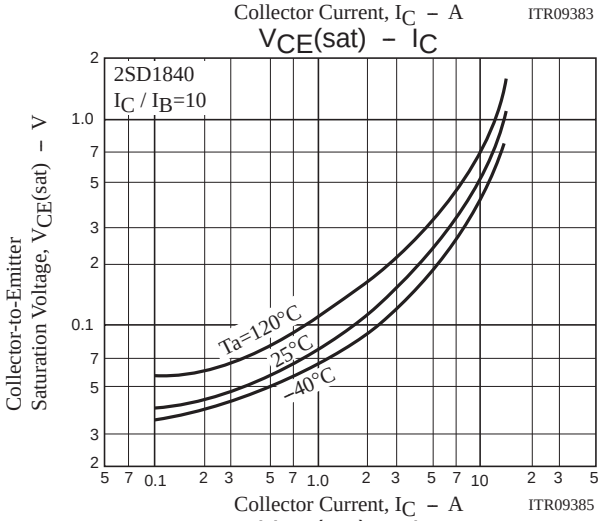


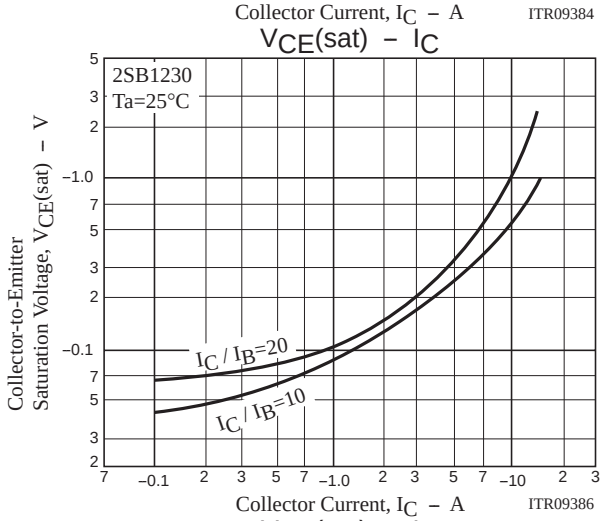


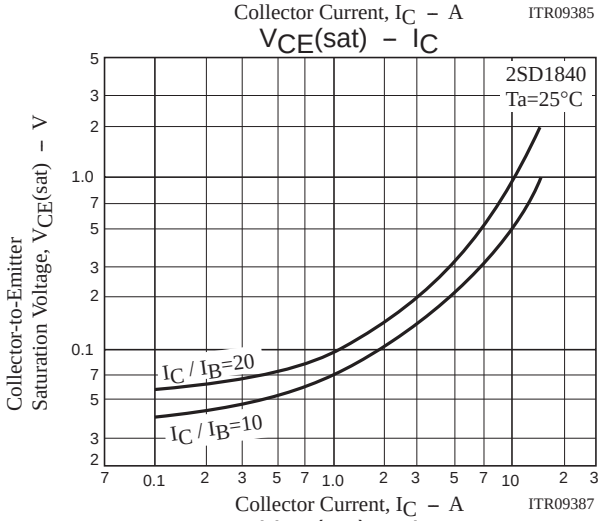

hFE – IC
2SB1230
VCE= –2V
Ta=120°C
25°C
–40°C
DC Current Gain, hFE
Collector Current, IC – A
ITR09382

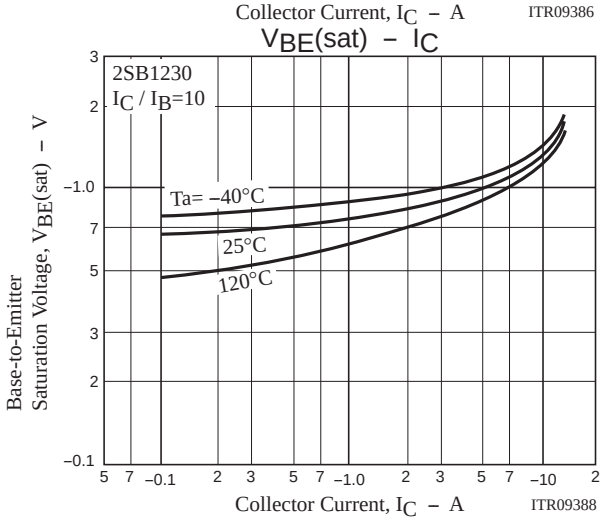

hFE – IC
2SD1840
VCE=2V
Ta=120°C
25°C
–40°C
DC Current Gain, hFE
Collector Current, IC – A
ITR09383

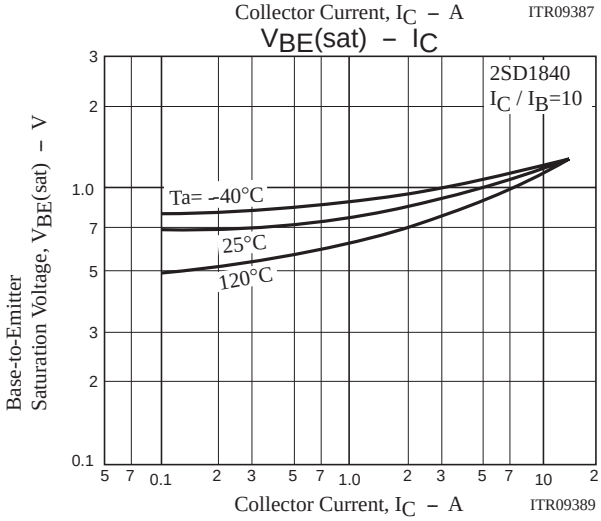

VCE(sat) – IC
2SB1230
IC / IB=10
Ta=120°C
25°C
–40°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR09384


VCE(sat) – IC
2SD1840
IC / IB=10
Ta=120°C
25°C
–40°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR09385


VCE(sat) – IC
2SB1230
Ta=25°C
IC / IB=20
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR09386


VCE(sat) – IC
2SD1840
Ta=25°C
IC / IB=20
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR09387


VBE(sat) – IC
2SB1230
IC / IB=10
Ta= –40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR09388


VBE(sat) – IC
2SD1840
IC / IB=10
Ta= –40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR09389