

<b>SANYO</b>	No.2539B	<b>2SB1215/2SD1815</b>
		PNP/NPN Epitaxial Planar Silicon Transistors

**High-Current Switching Applications**

**Applications**

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

**Features**

- Low collector-to-emitter saturation voltage.
- Excellent linearity of  $h_{FE}$ .
- Small-sized package permitting 2SB1215/2SD1815-applied sets to be made small and slim.
- High  $f_T$ .
- Fast switching time.

( ) : 2SB1215

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$			unit
Collector-to-Base Voltage	$V_{CBO}$	(-)120	V
Collector-to-Emitter Voltage	$V_{CEO}$	(-)100	V
Emitter-to-Base Voltage	$V_{EBO}$	(-)6	V
Collector Current	$I_C$	(-)3	A
Collector Current (Pulse)	$I_{CP}$	(-)6	A
Collector Dissipation	$P_C$	1	W
		20	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

$T_c = 25^\circ\text{C}$

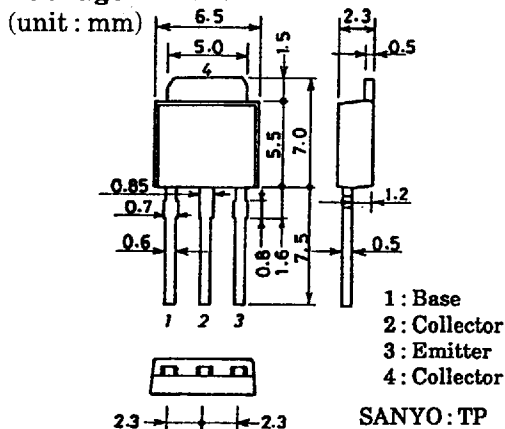
Electrical Characteristics at $T_a = 25^\circ\text{C}$			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)100\text{V}, I_E = 0$			(-)1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)1	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE} = (-)5\text{V}, I_C = (-)0.5\text{A}$	70*		400*	
	$h_{FE(2)}$	$V_{CE} = (-)5\text{V}, I_C = (-)2\text{A}$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10\text{V}, I_C = (-)0.5\text{A}$		180		MHz
				(130)		
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(40)25		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1.5\text{A}, I_B = (-)0.15\text{A}$		150	400	mV
				(-200)	(-500)	

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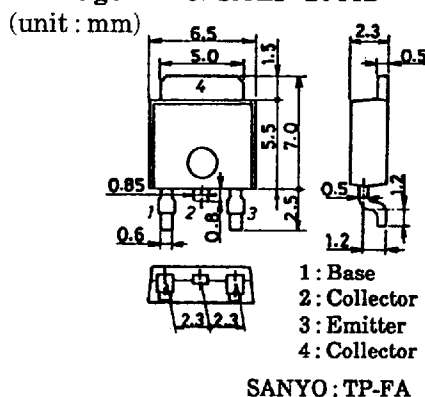
\* : The 2SB1215/2SD1815 are classified by 100mA  $h_{FE}$  as follows :

70	Q	140	100	R	200	140	S	280	200	T	400
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**Package Dimensions 2045B**



**Package Dimensions 2044B**

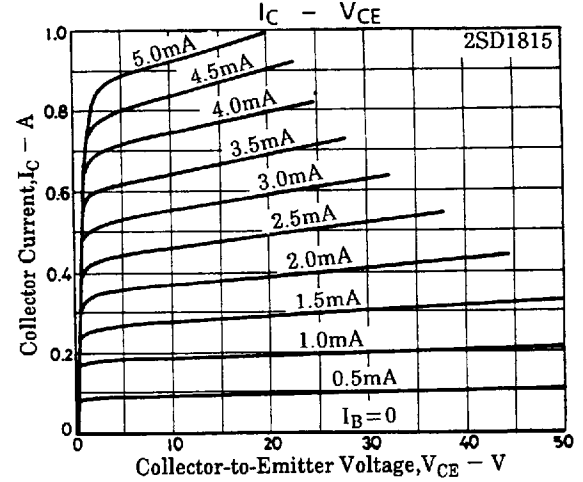
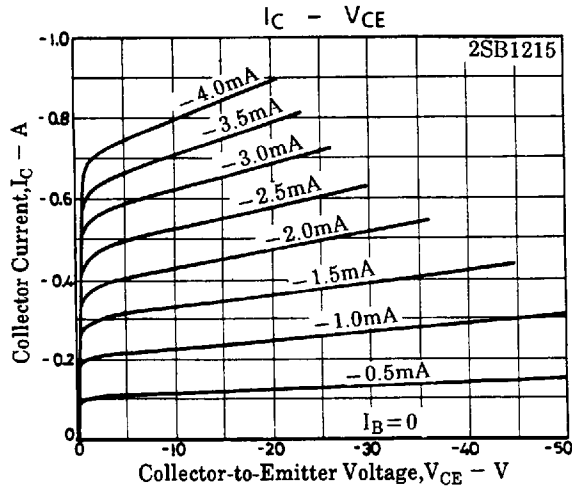
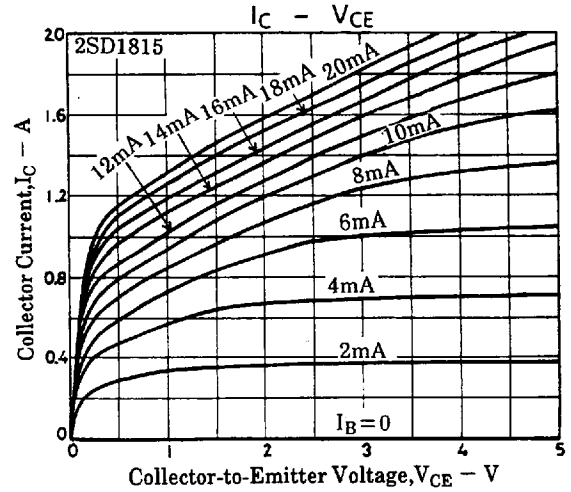
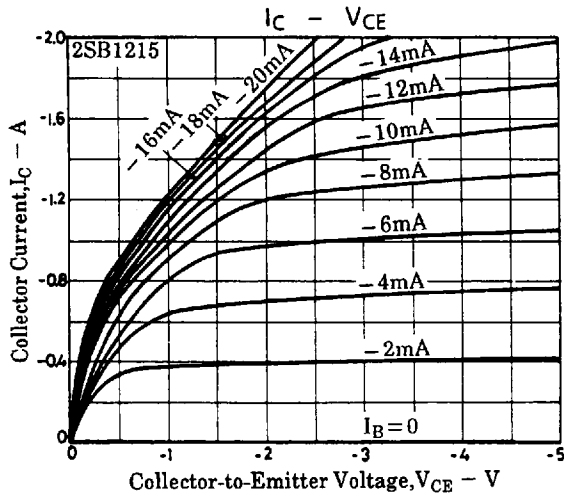
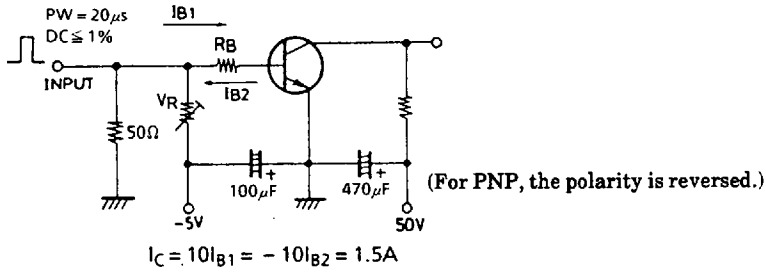


## 2SB1215/2SD1815

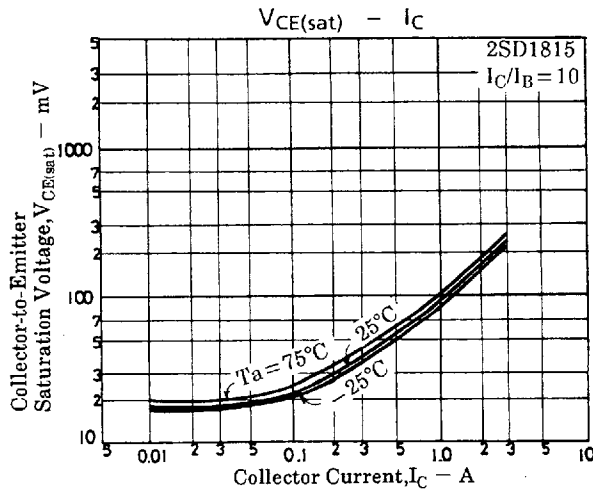
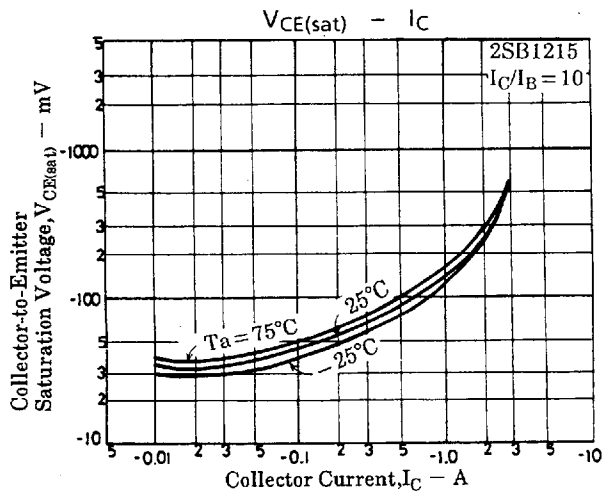
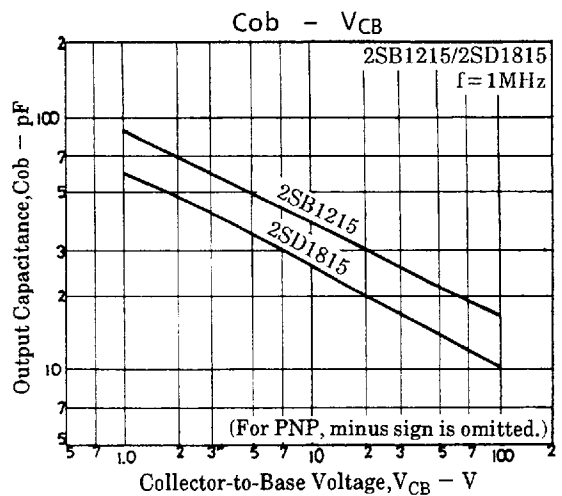
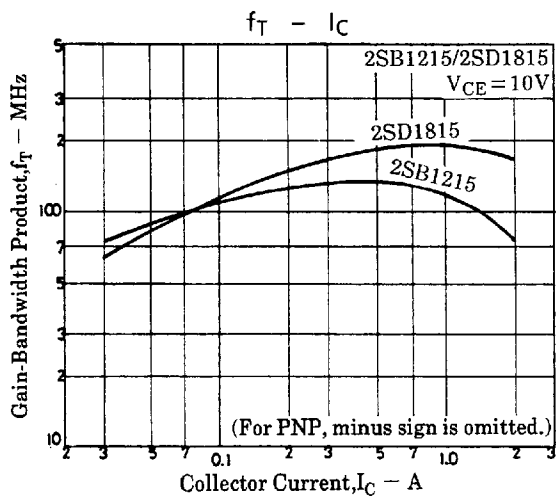
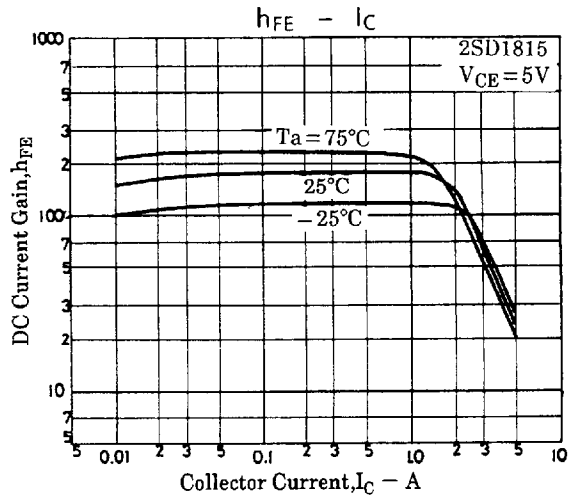
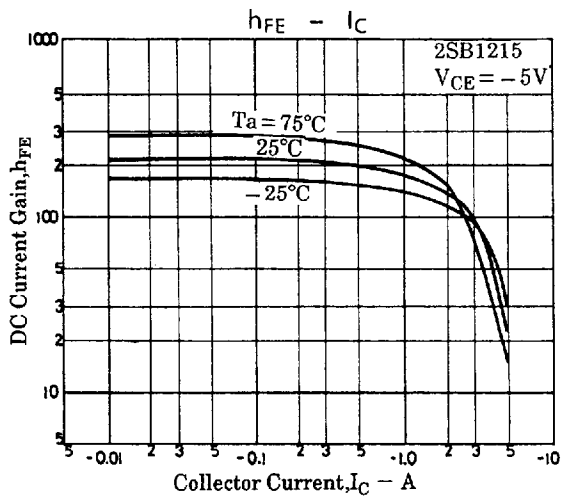
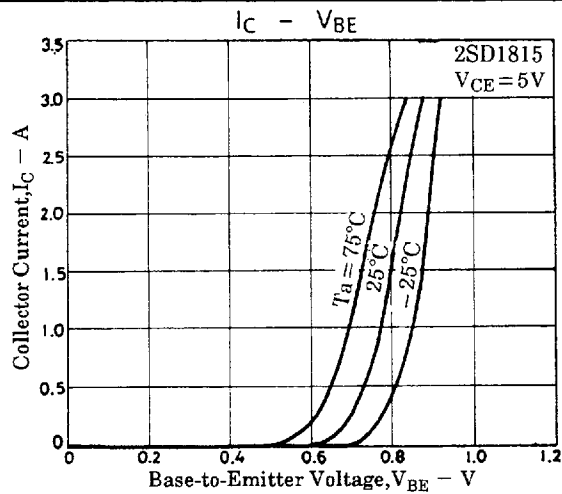
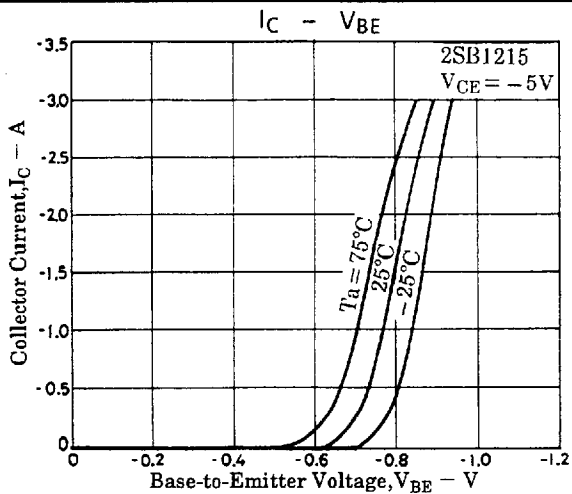
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		min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$ $I_C = (-)1.5A, I_B = (-)0.15A$	(-)0.9	(-)1.2		V
C-B Breakdown Voltage	$V_{(BR)CBO}$ $I_C = (-)10\mu A, I_E = 0$	(-)120			V
C-E Breakdown Voltage	$V_{(BR)CEO}$ $I_C = (-)1mA, R_{BE} = \infty$	(-)100			V
E-B Breakdown Voltage	$V_{(BR)EBO}$ $I_E = (-)10\mu A, I_C = 0$	(-)6			V
Rise Time	$t_{on}$ See specified Test Circuit.		100		ns
Storage Time	$t_{stg}$ "	(800)900			ns
Fall Time	$t_f$ "		50		ns

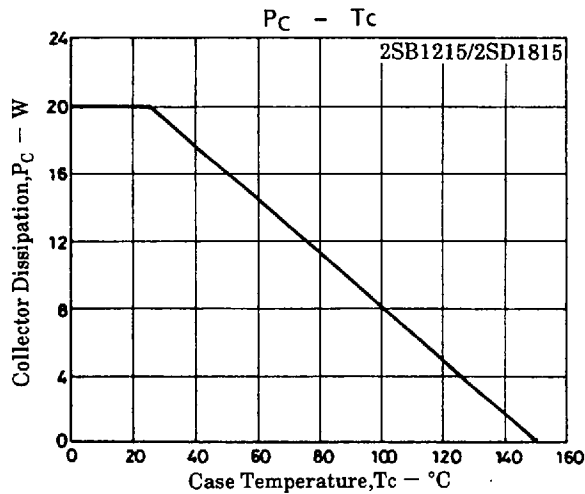
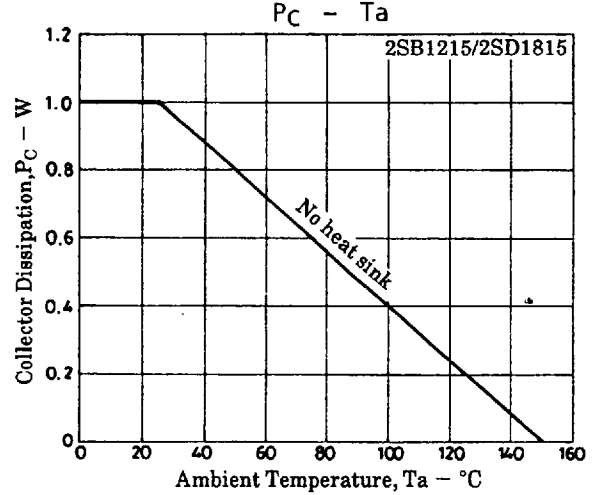
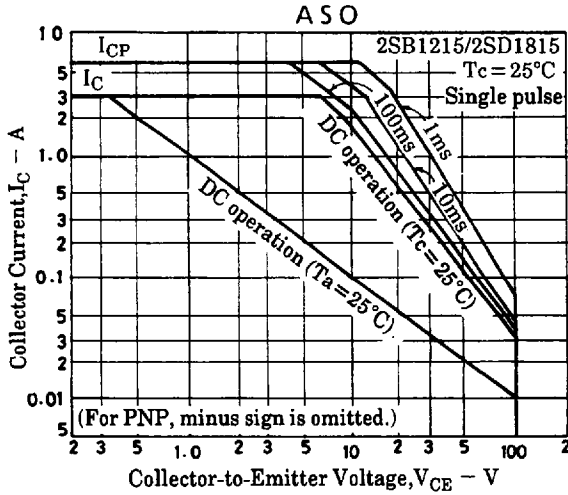
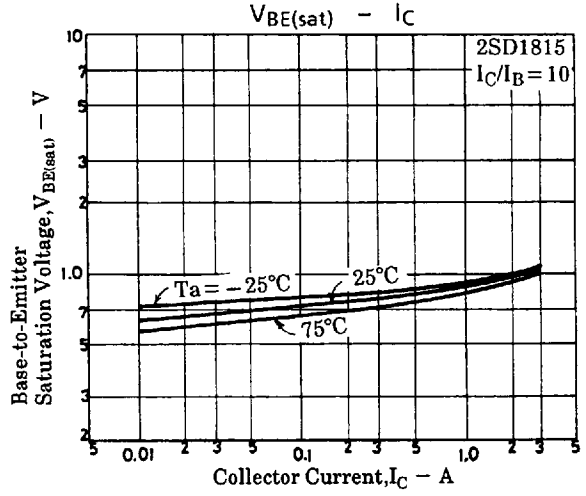
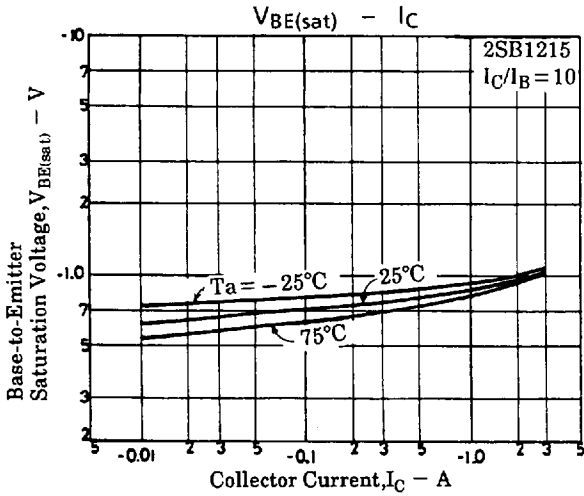
### Switching Time Test Circuit



2SB1215/2SD1815



2SB1215/2SD1815



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