

SANYO	No.2539B	2SB1215/2SD1815
		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 $T_a = 25^\circ\text{C}$

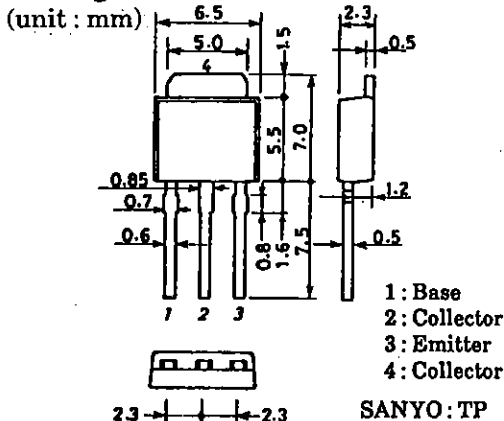
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)100\text{V}, I_E = 0$			(-) 1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-) 1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = (-)5\text{V}, I_C = (-)0.5\text{A}$	70^*		400^*	
	$h_{FE(2)}$	$V_{CE} = (-)5\text{V}, I_C = (-)2\text{A}$	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)		

Continued on next page.

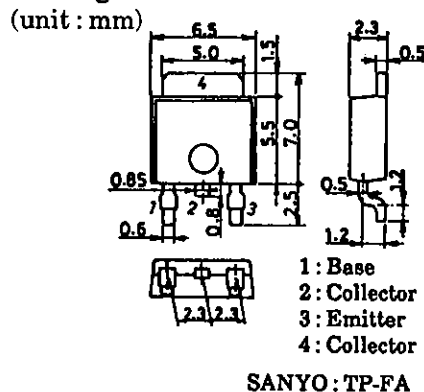
*: The 2SB1215/2SD1815 are classified by 100mA h_{FE} as follows :

70 Q 140	100 R 200	140 S 280	200 T 400
----------	-----------	-----------	-----------

Package Dimensions 2045B



Package Dimensions 2044B



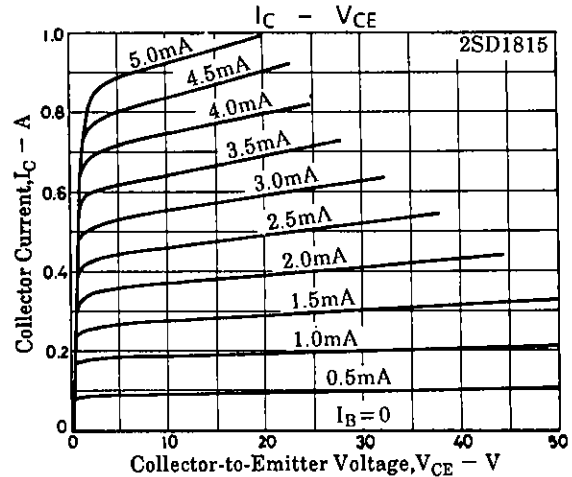
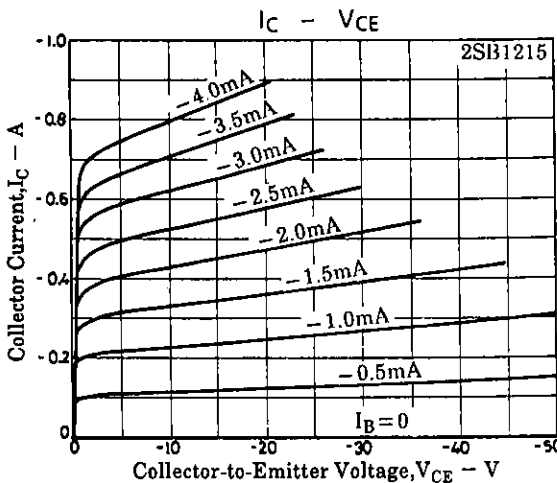
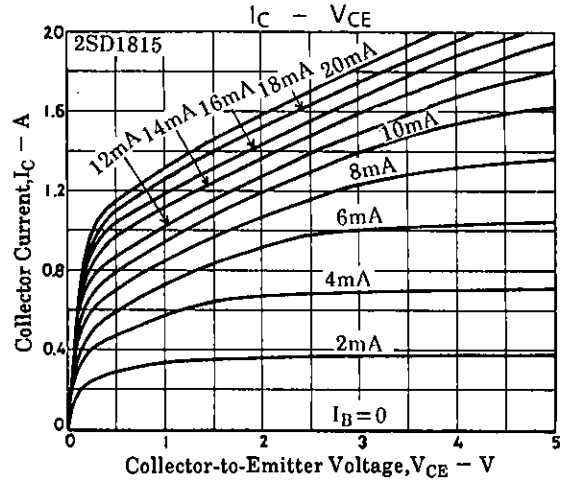
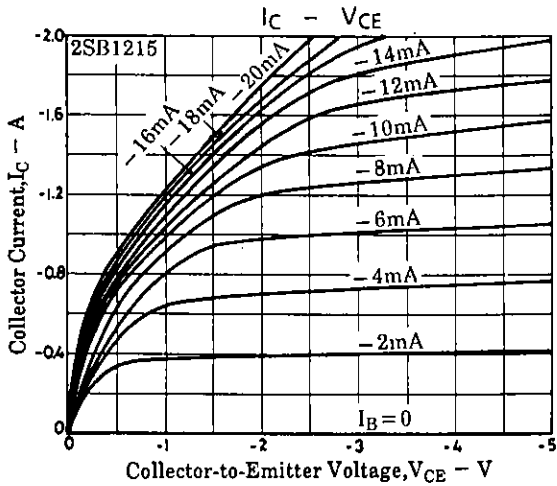
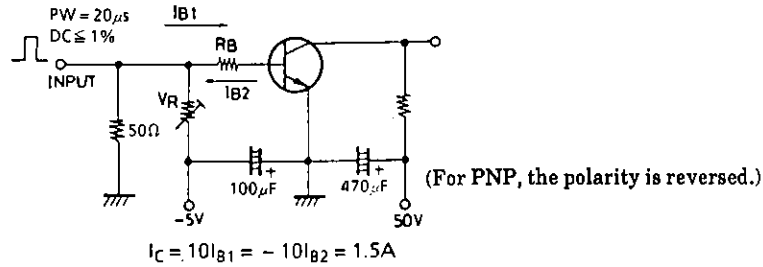
SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

2SB1215/2SD1815

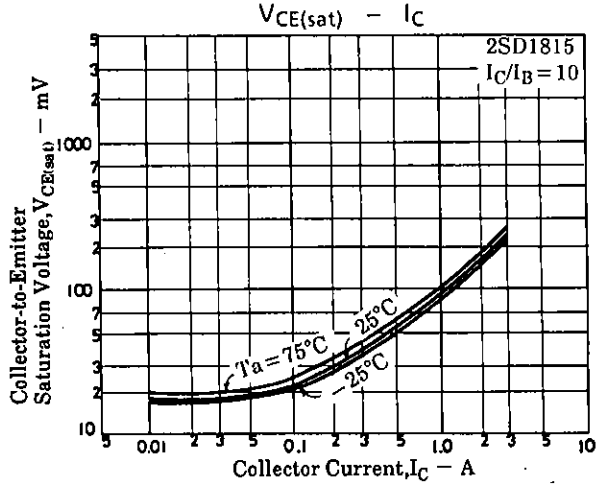
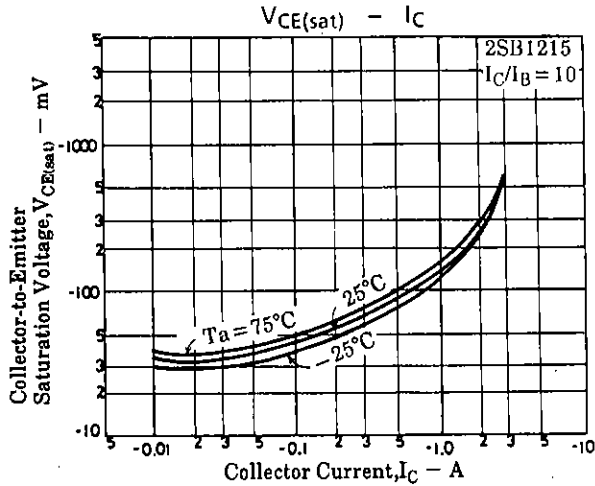
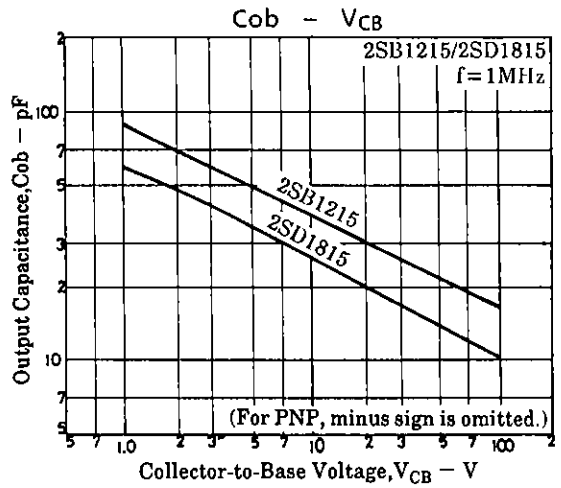
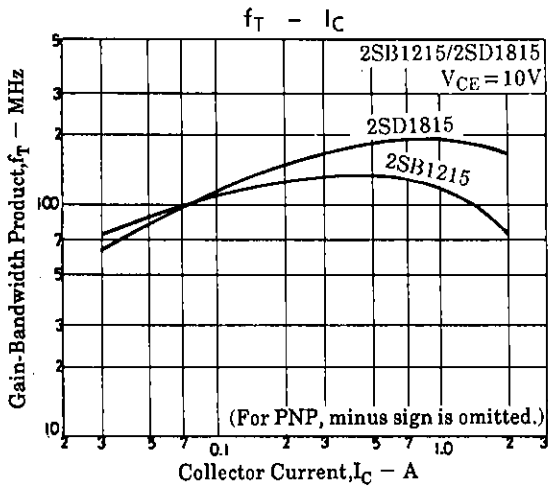
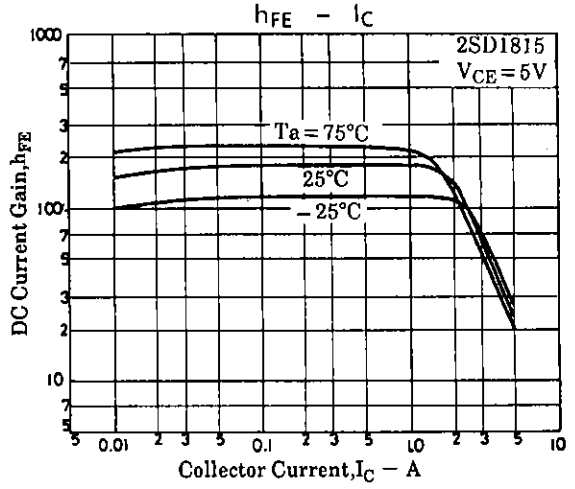
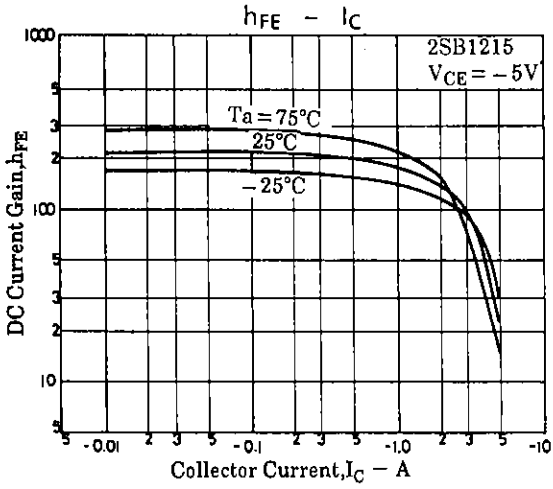
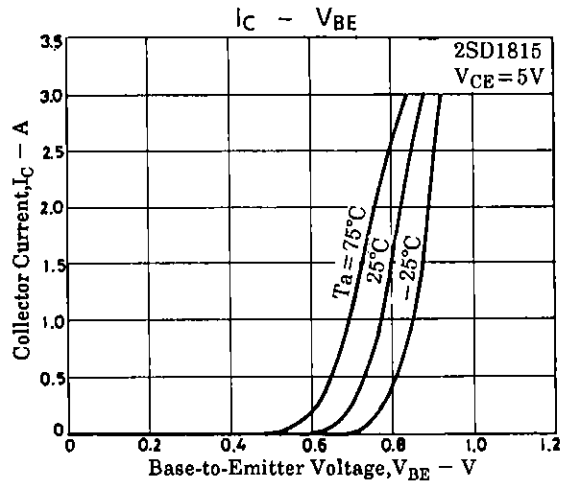
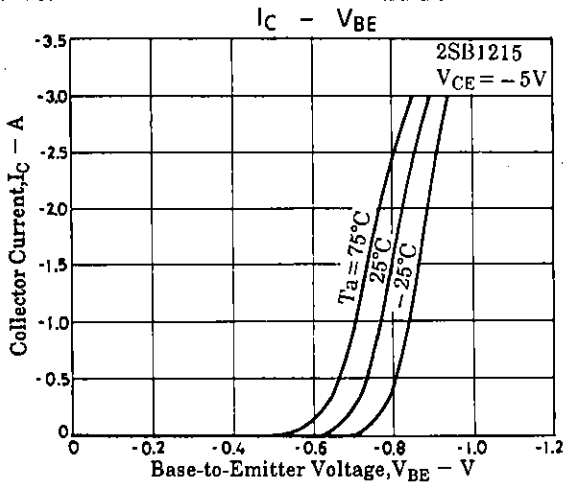
Continued from preceding page.

		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

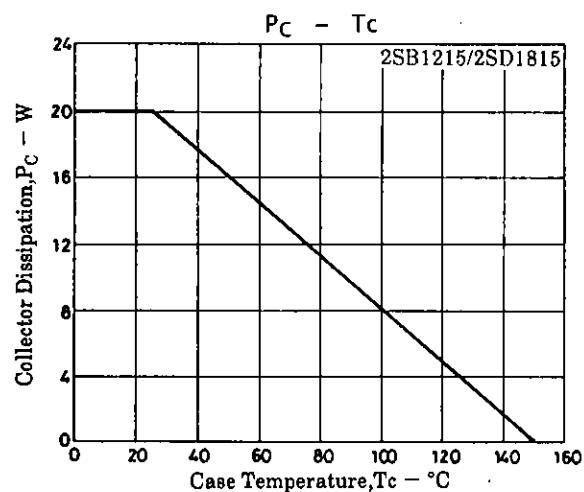
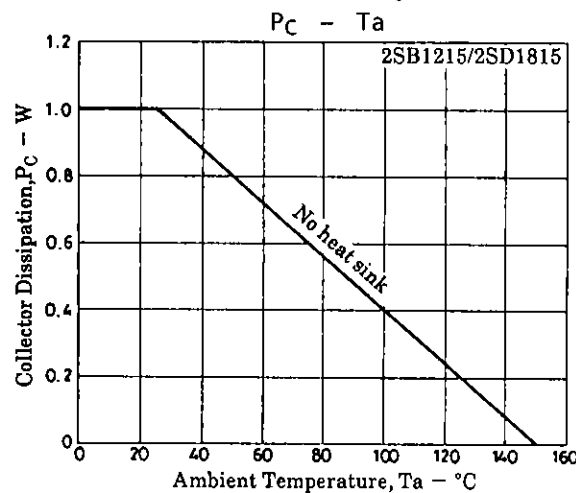
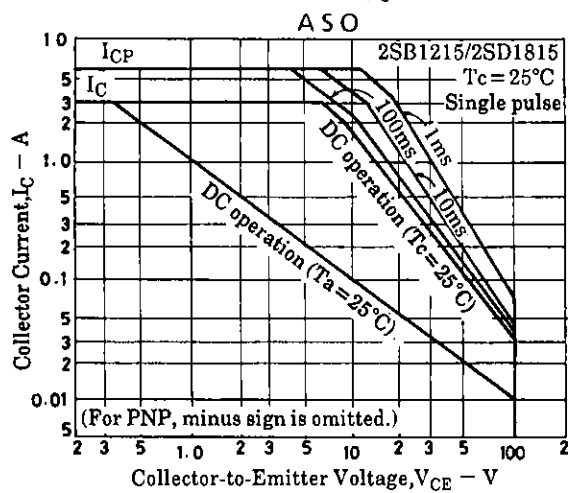
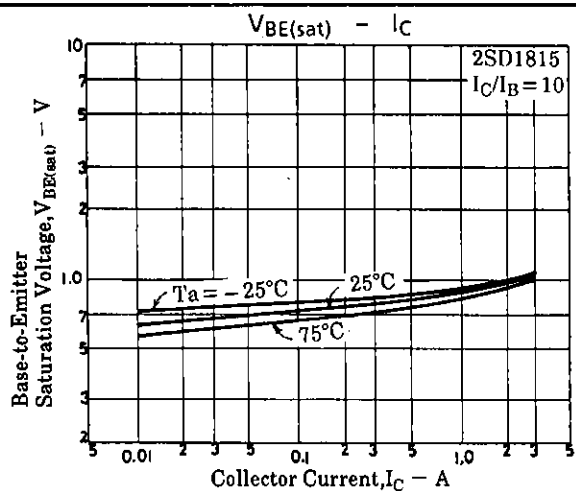
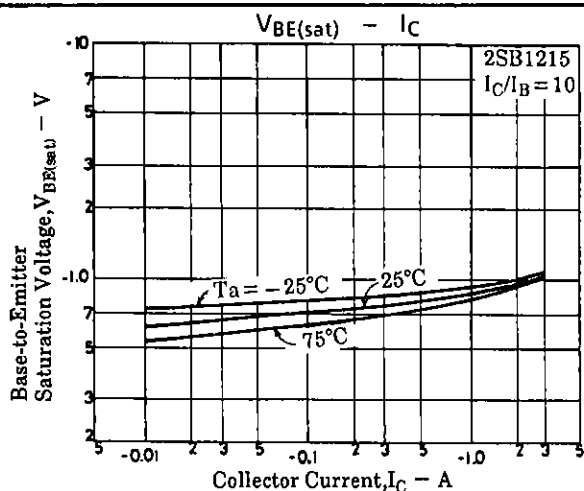
Switching Time Test Circuit



2SB1215/2SD1815



2SB1215/2SD1815



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of April, 1996. Specifications and information herein are subject to change without notice.