

SANYO

No.2115B

2SD1805

NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- Strobes, voltage regulators, relay drivers, lamp drivers

Features

- Low saturation voltage
- Fast switching time
- Large current capacity
- Small and slim package making it easy to make 2SD1805-applied sets smaller

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	60	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current	I_C	5	A
Collector Current(Pulse)	I_{CP}	8	A
Collector Dissipation	P_C	1	W
		15	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}	$V_{CB} = 50\text{V}, I_E = 0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	120*		560*	
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 3\text{A}$	95			
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$		120		MHz
Output Capacitance	c_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		45		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 60\text{mA}$	220		500	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 3\text{A}, I_B = 60\text{mA}$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	20			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V

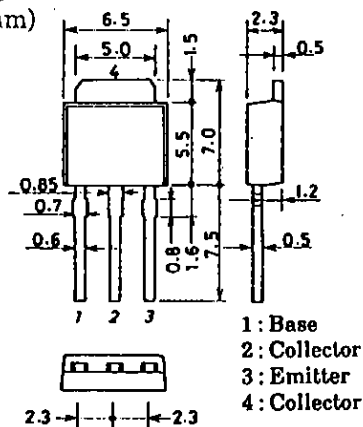
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* : The 2SD1805 is classified by 500mA h_{FE} as follows :

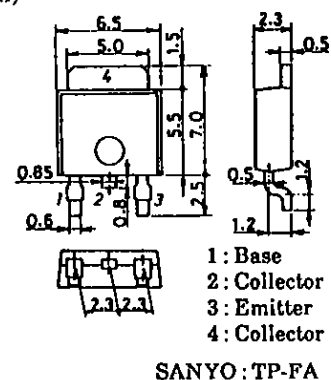
120	E	200	160	F	320	280	G	560
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Package Dimensions 2045B

(unit : mm)

**Package Dimensions 2044B**

(unit : mm)

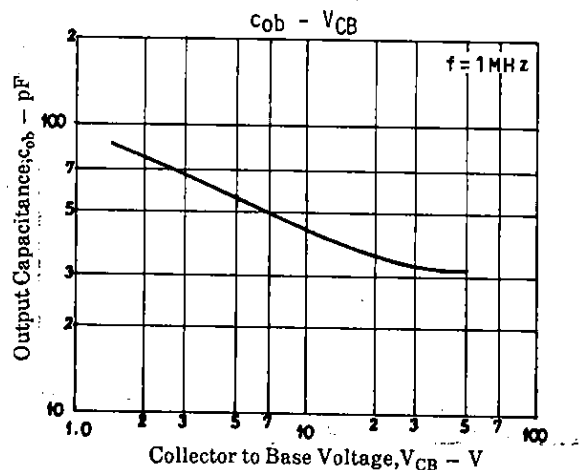
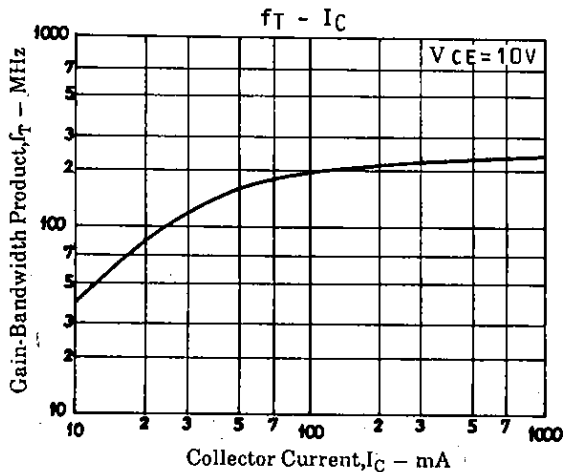
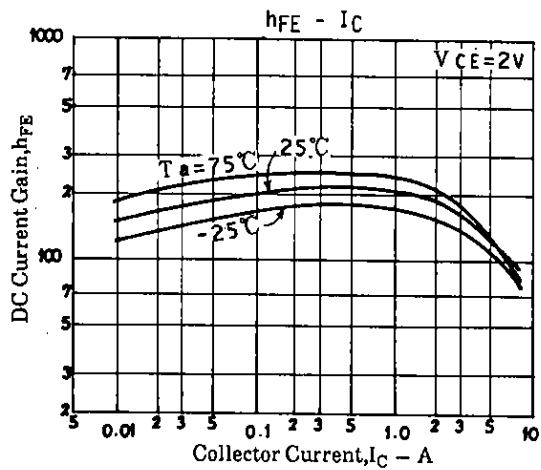
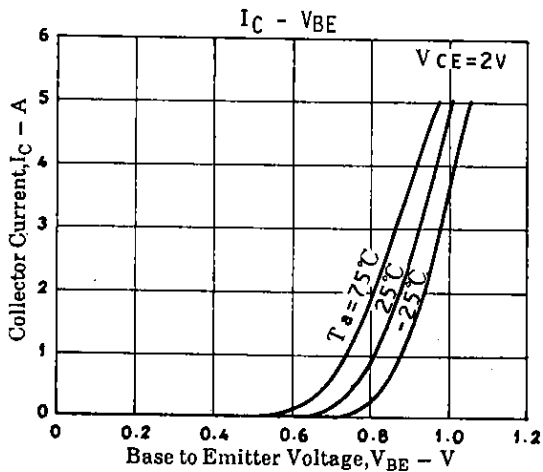
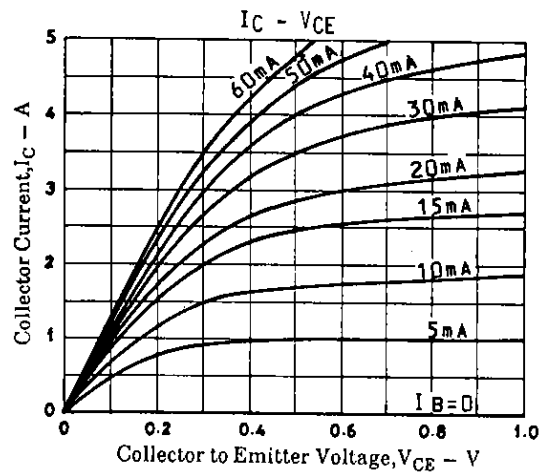
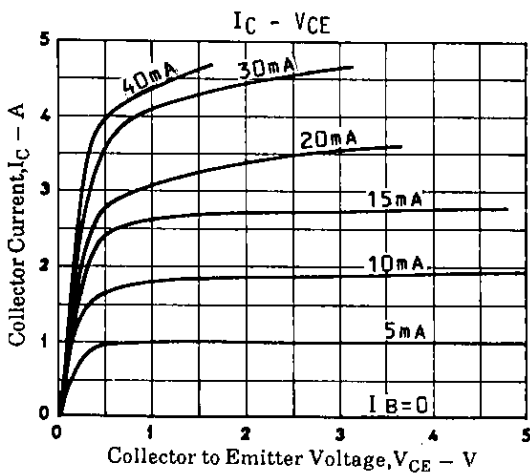
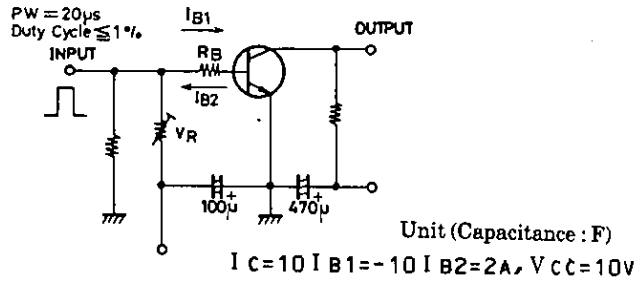
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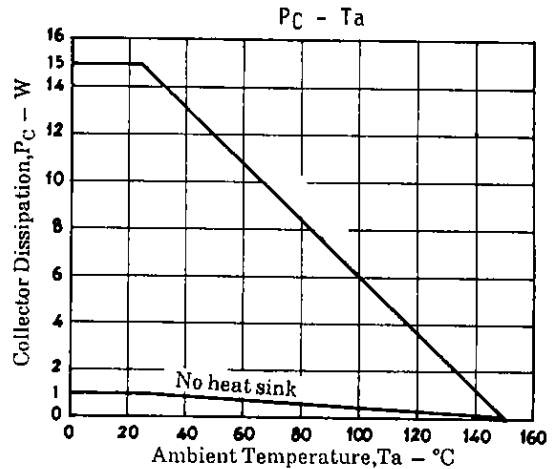
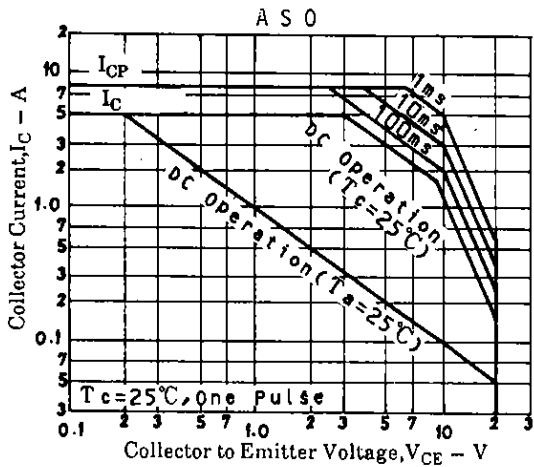
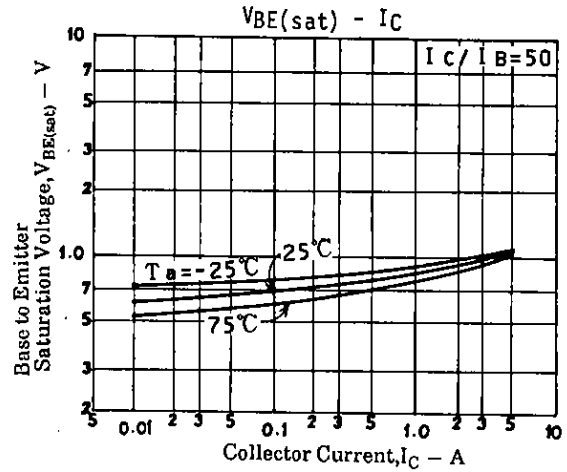
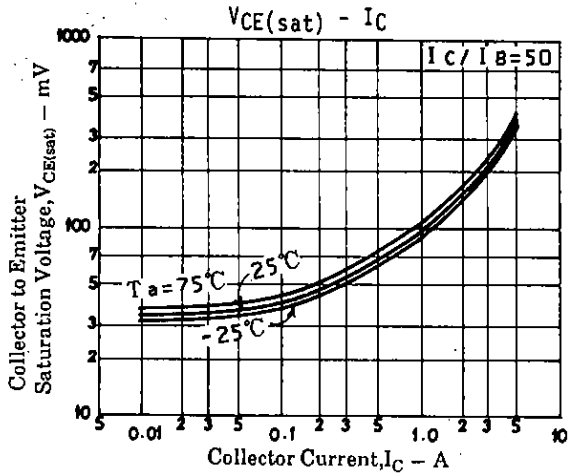
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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			min	typ	max	unit
Turn-on Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	"		300		ns
Fall Time	t_f	"		40		ns

Switching Time Test Circuit





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