

<b>SANYO</b>	No.2511A	<b>2SA1593/2SC4135</b>
		PNP/NPN Epitaxial Planar Silicon Transistors High-Voltage Switching Applications

**Applications**

- Power supplies, relay drivers, lamp drivers

**Features**

- Adoption of FBET, MBIT processes
- High breakdown voltage and large current capacity
- Fast switching speed
- Small and slim package permitting 2SA1593/2SC4135-applied sets to be made more compact

( ): 2SA1593

**Absolute Maximum Ratings at Ta=25°C**

Collector to Base Voltage	$V_{CB0}$	(-)120	V
Collector to Emitter Voltage	$V_{CEO}$	(-)100	V
Emitter to Base Voltage	$V_{EBO}$	(-)6	V
Collector Current	$I_C$	(-)2	A
Collector Current(Pulse)	$I_{CP}$	(-)3	A
Collector Dissipation	$P_C$	1	W
Junction Temperature	$T_j$	15	W
Storage Temperature	$T_{stg}$	-55 to +150	°C

$T_c=25^\circ C$

**Electrical Characteristics at Ta=25°C**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)100V, I_E=0$			(-)100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4V, I_C=0$			(-)100	nA
DC Current Gain	$h_{FE}$	$V_{CE}=(-)5V, I_C=(-)100mA$	100*		400*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10V, I_C=(-)100mA$		120		MHz
Output Capacitance	$c_{ob}$	$V_{CB}=(-)10V, f=1MHz$		(25)		pF
				16		pF

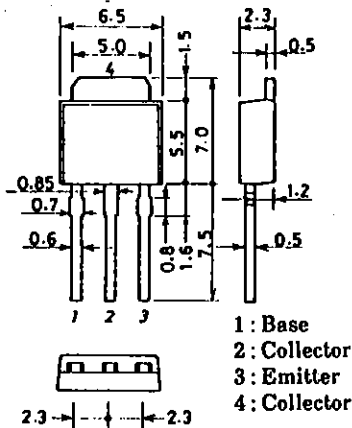
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\*: The 2SA1593/2SC4135 are classified by 100mA  $h_{FE}$  as follows:

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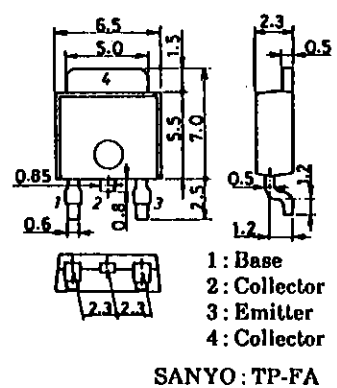
**Package Dimensions 2045B**

(unit:mm)



**Package Dimensions 2044B**

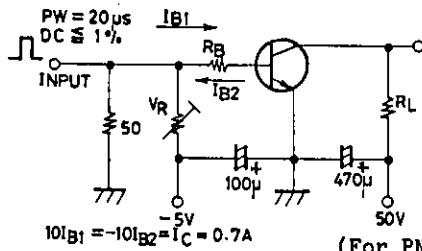
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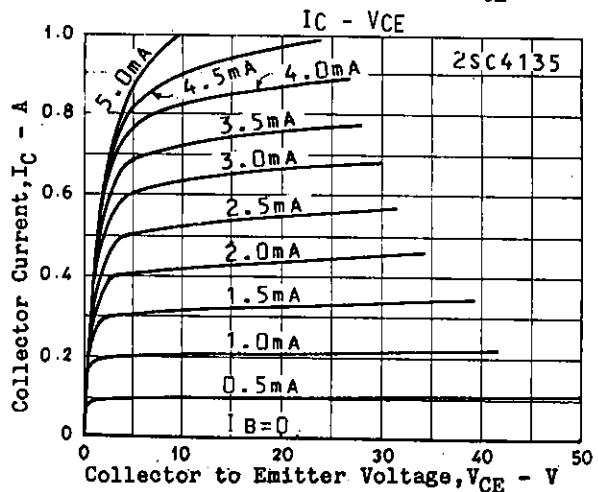
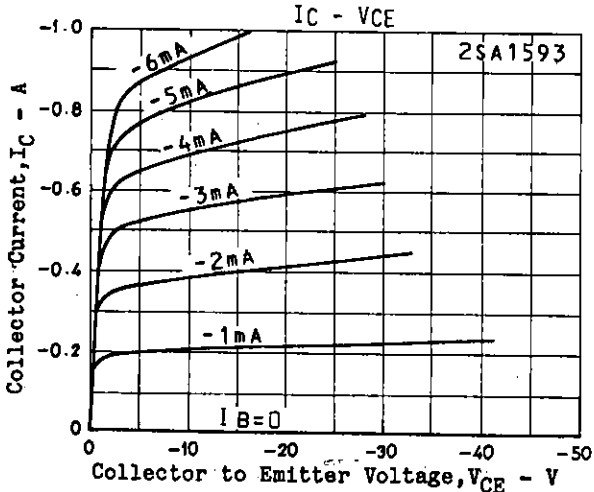
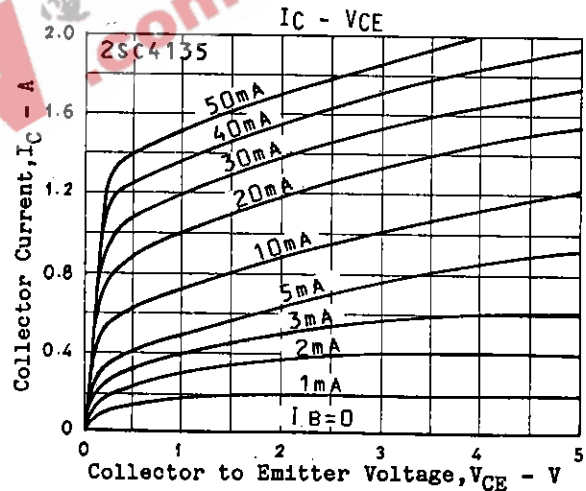
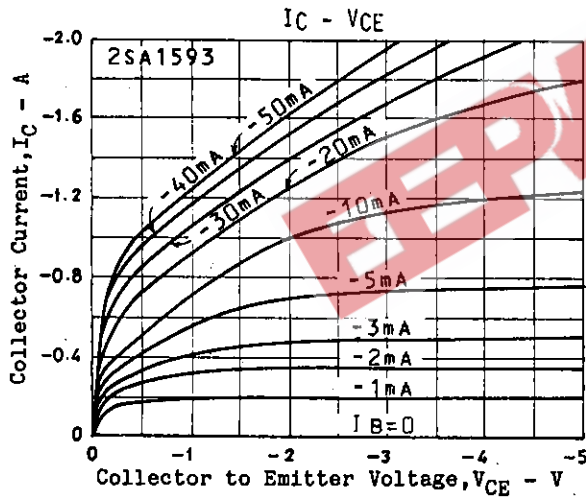
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1A, I_B = (-)100mA$		(-0.22)	(-0.6)	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1A, I_B = (-)100mA$		0.13	0.4	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)	120		V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)	100		V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)	6		V
Turn-on Time	$t_{on}$	See specified Test Circuit.		(80)		ns
				"	80	ns
Storage Time	$t_{stg}$			(750)		ns
				"	1000	ns
Fall Time	$t_f$			(40)		ns
				"	50	ns

Switching Time Test Circuit

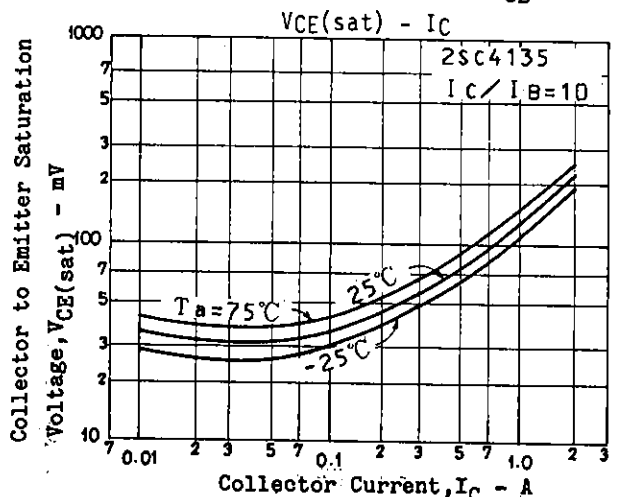
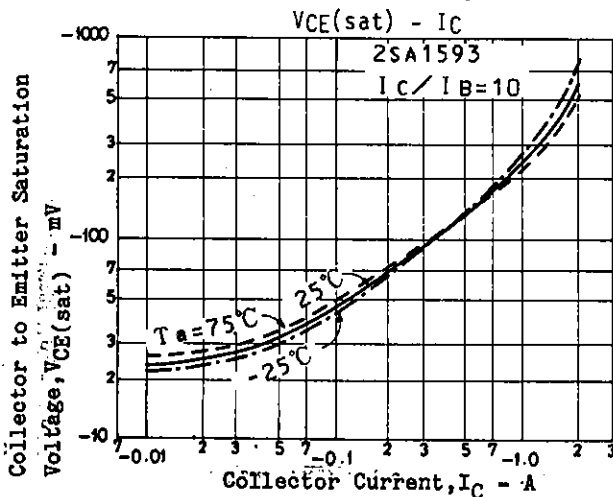
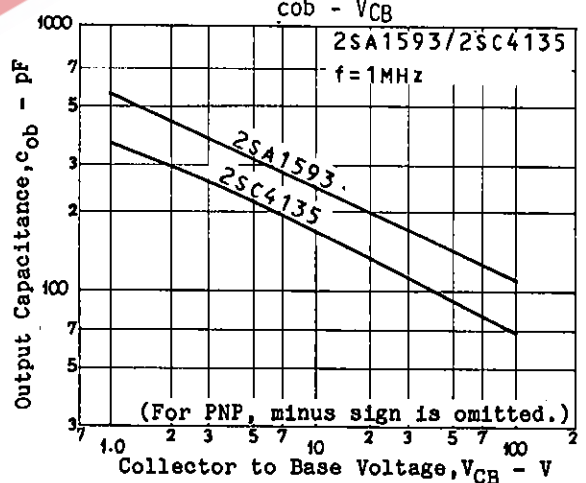
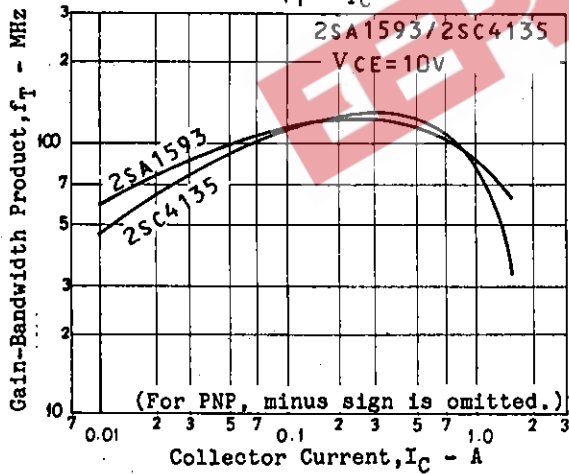
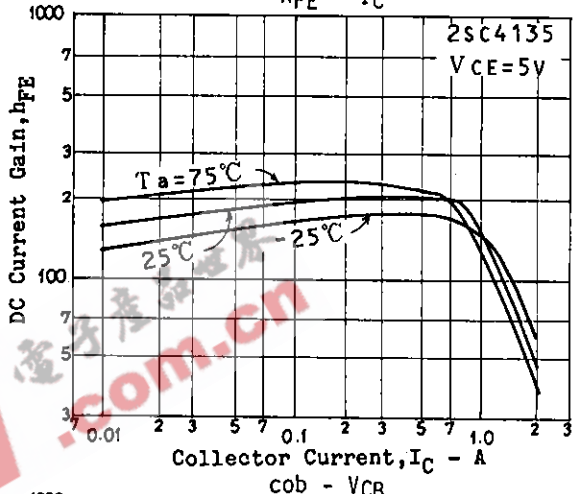
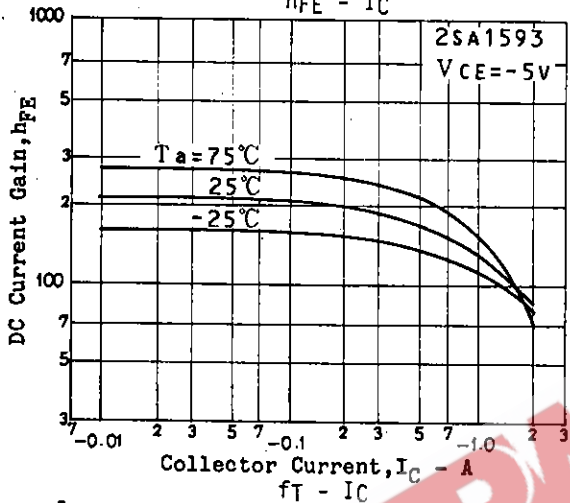
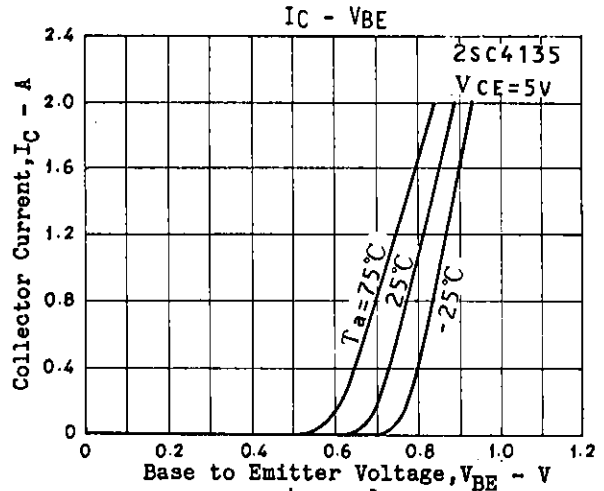
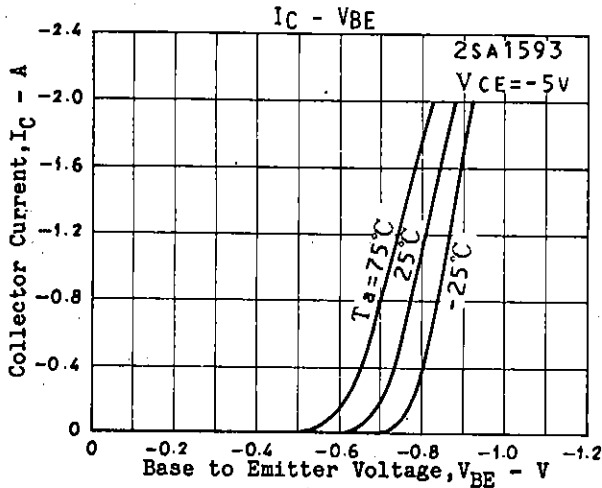


Unit (Resistance : Ω, Capacitance : F)

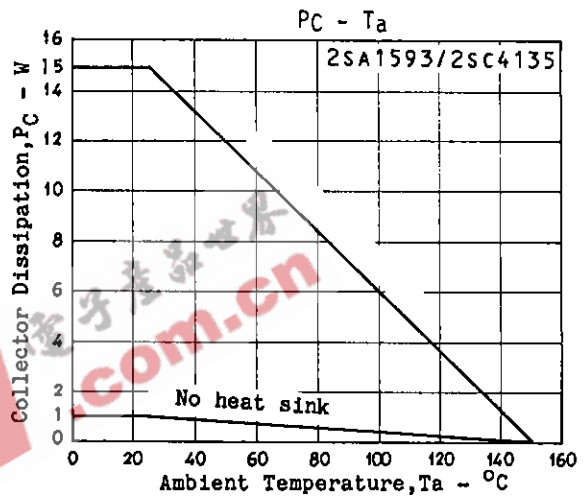
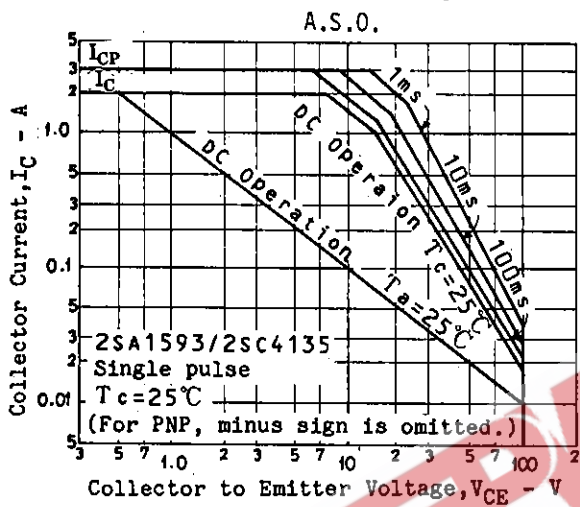
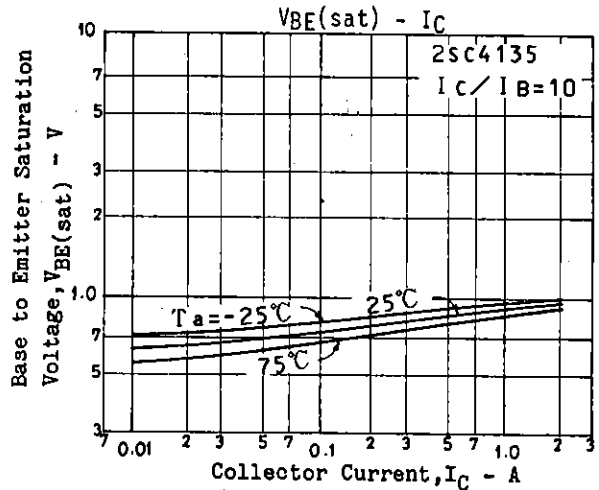
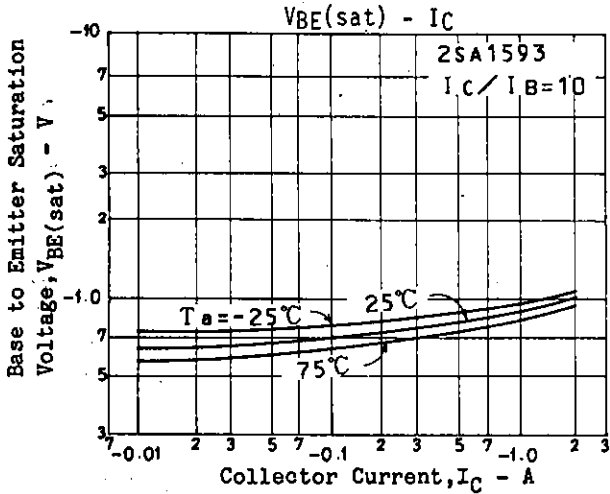
(For PNP, the polarity is reversed.)



2SA1593/2SC4135



2SA1593/2SC4135



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