

SANYO	No.2511A	2SA1593/2SC4135
		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	unit
Collector to Emitter Voltage	V_{CE0}	(-)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	
		15	W	$T_c=25^\circ C$
Junction Temperature	T_j	150	°C	
Storage Temperature	T_{stg}	-55 to +150	°C	

Electrical Characteristics at Ta=25°C

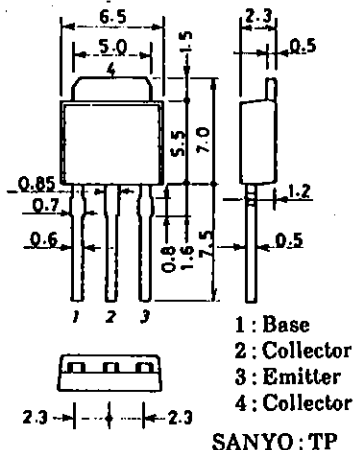
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)100V, I_E=0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE}=(-)5V, I_C=(-)100mA$	100*		400*	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)100mA$		120		MHz
Output Capacitance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

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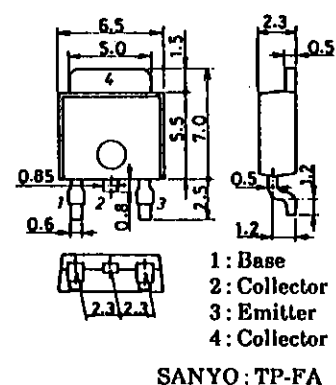
*: The 2SA1593/2SC4135 are classified by 100mA h_{FE} as follows:

100	R	200	140	S	280	200	T	400
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Package Dimensions 2045B
(unit:mm)



Package Dimensions 2044B
(unit:mm)

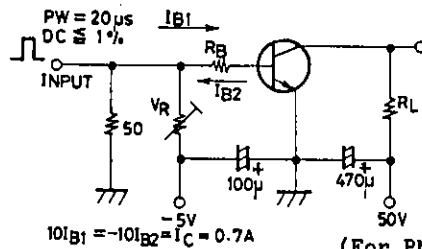


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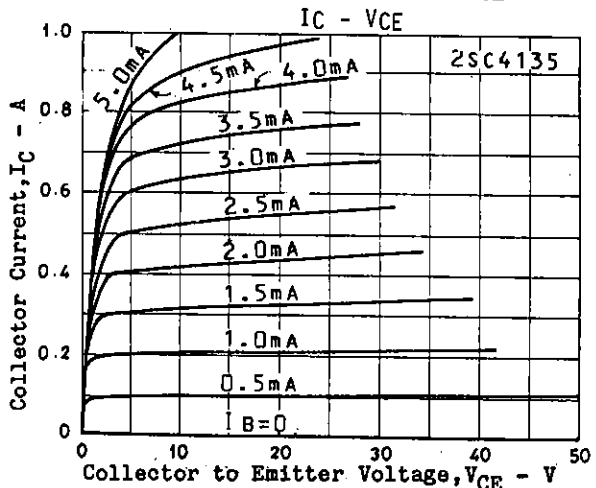
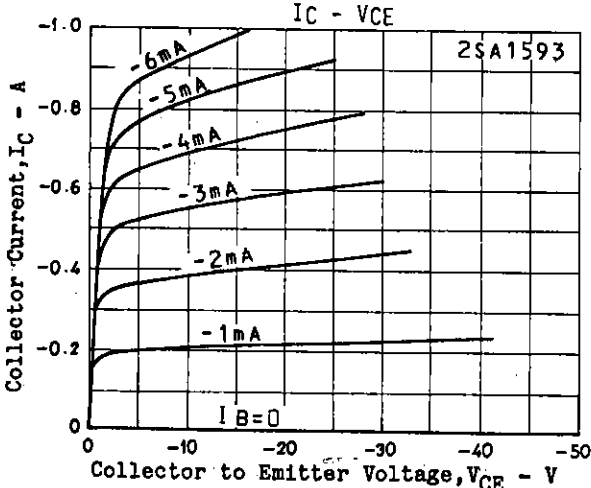
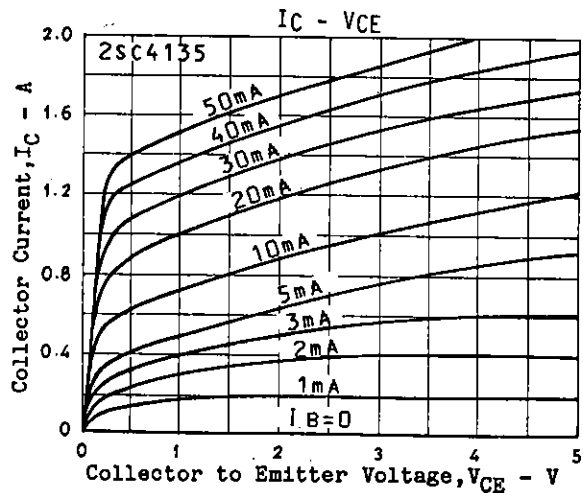
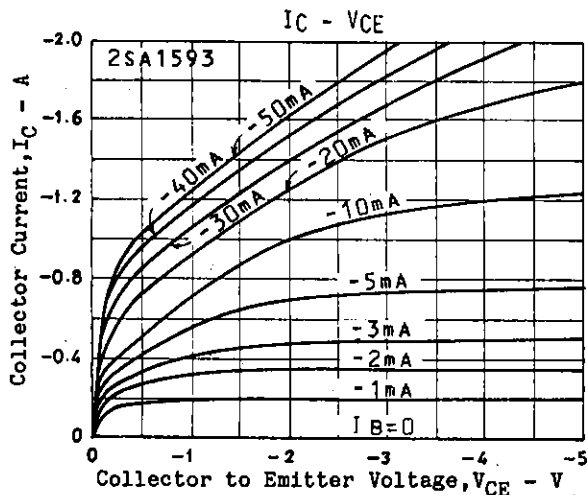
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1A, I_B = (-)100mA$		(-0.22)	(-0.6)	V
				0.13	0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1A, I_B = (-)100mA$		$(-)0.85$	$(-)1.2$	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	$(-)120$			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	$(-)100$			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	$(-)6$			V
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

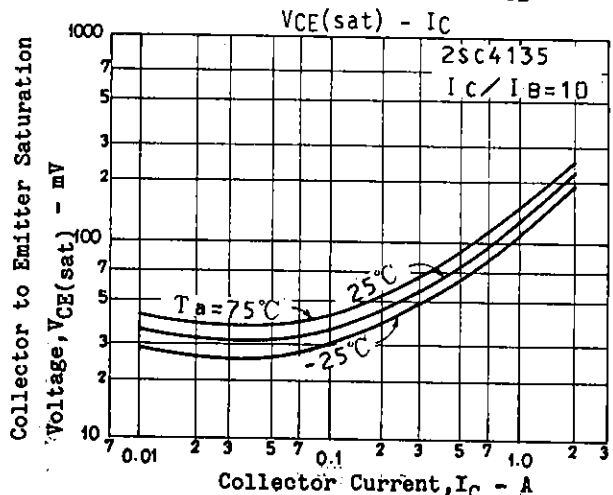
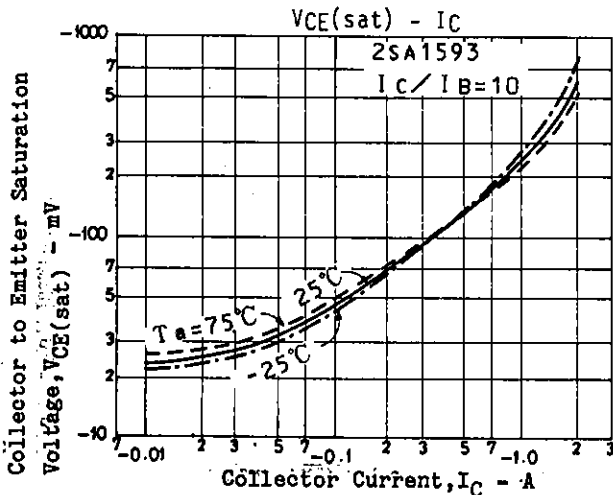
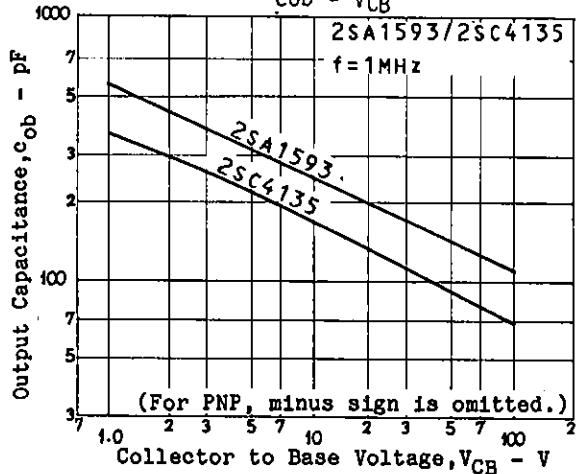
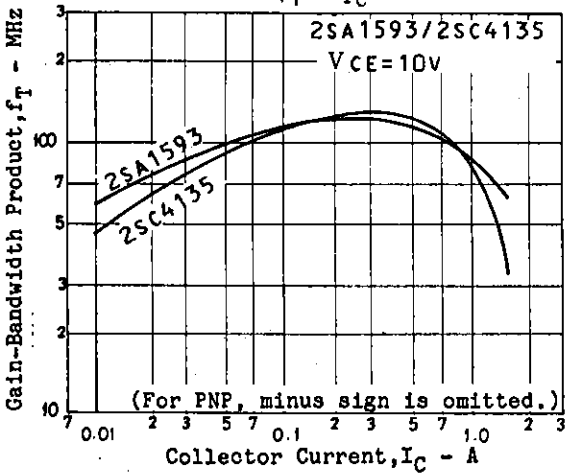
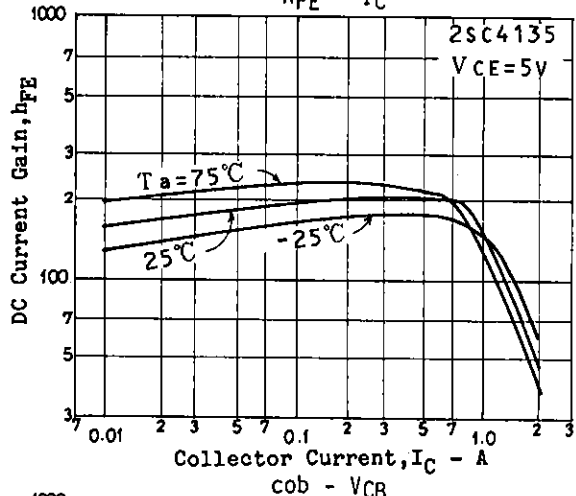
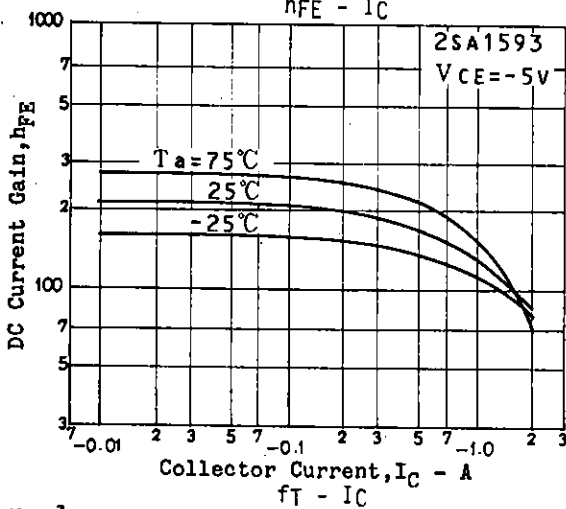
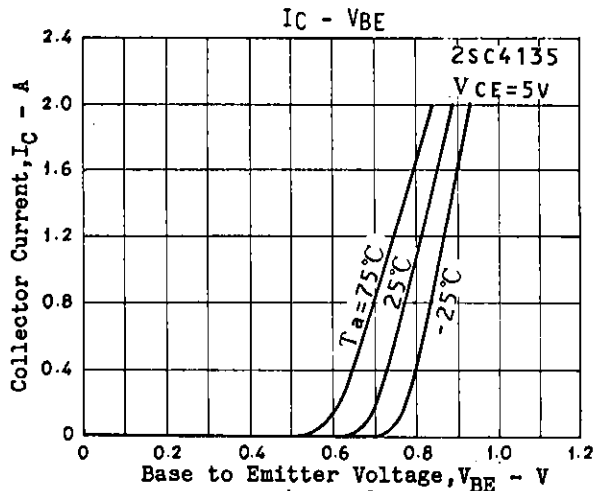
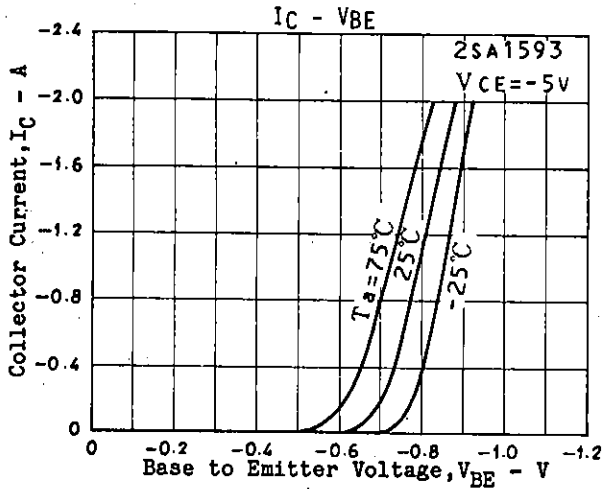


Unit (Resistance : Ω , Capacitance : F)

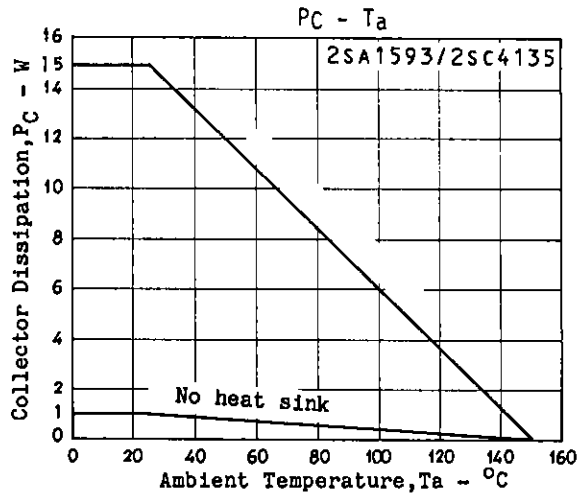
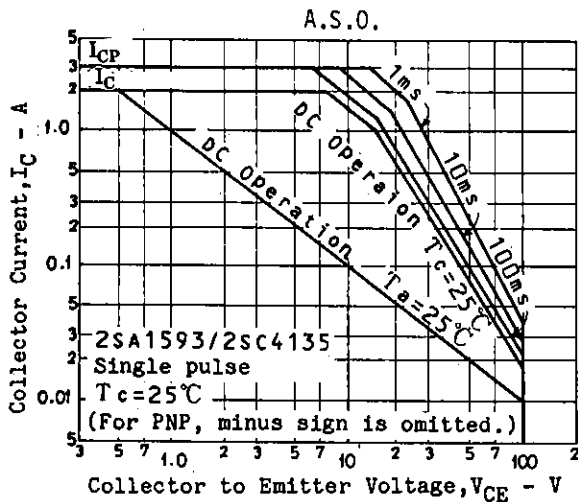
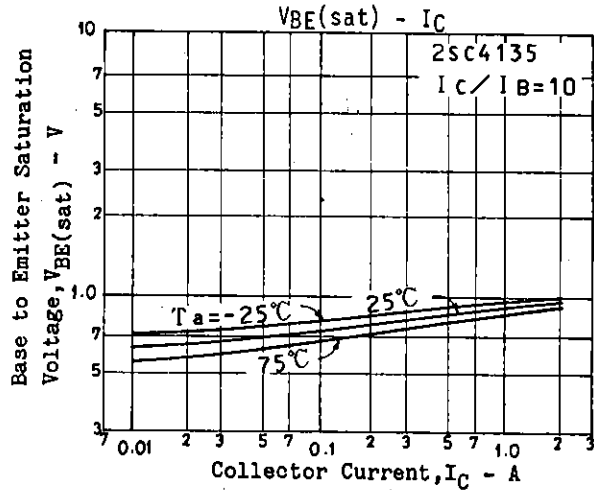
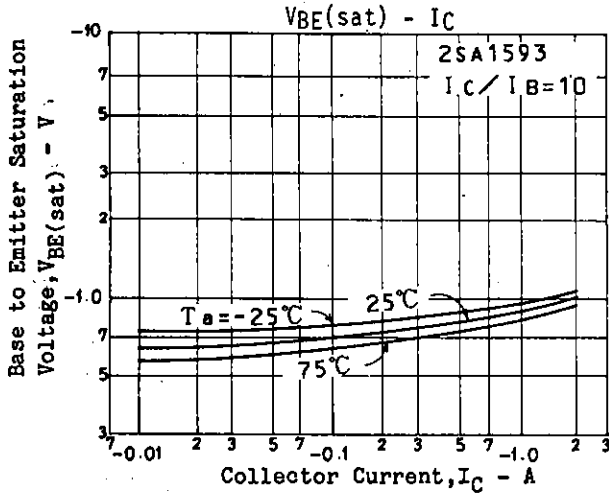
(For PNP, the polarity is reversed.)



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