

<b>SANYO</b>	No.1392A	<b>2SA1339/2SC3393</b>
PNP/NPN Epitaxial Planar Silicon Transistors		
<b>High-Speed Switching Applications</b>		

**Features**

- Very small-sized package permitting sets to be small-sized, slim
- High breakdown voltage:  $V_{CEO}(-)50V$
- Complementary pair transistor having large current capacity and high  $f_T$
- Adoption of FBET process

( ): 2SA1339

**Absolute Maximum Ratings at  $T_a=25^\circ C$**

			unit
Collector to Base Voltage	$V_{CBO}$	(-)60	V
Collector to Emitter Voltage	$V_{CEO}$	(-)50	V
Emitter to Base Voltage	$V_{EBO}$	(-)5	V
Collector Current	$I_C$	(-)500	mA
<b>Collector Current(Pulse)</b>	<b><math>I_{CP}</math></b>	(-)800	mA
Collector Dissipation	$P_C$	300	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

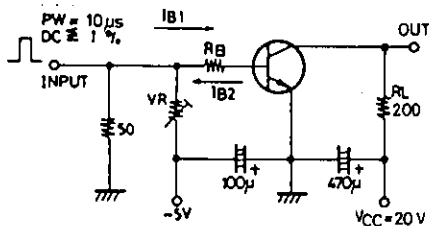
**Electrical Characteristics at  $T_a=25^\circ C$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}(-)40V, I_E=0$			(-)0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}(-)4V$			(-)0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}(-)5V, I_C(-)10mA$	100*		560*	
Gain Bandwidth Product	$f_T$	$V_{CE}(-)10V, I_C(-)50mA$		300		MHz
				(200)		
Output Capacitance	$c_{ob}$	$V_{CB}(-)10V, f=1MHz$		3.7		pF
				(5.6)		
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C(-)100mA, I_B(-)10mA$		0.1	0.3	V
				(0.15)	(0.4)	
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C(-)100mA, I_B(-)10mA$		0.8	1.2	V
C-B Breakdown Voltage	$V(BR)_{CBO}$	$I_C(-)10\mu A, I_E=0$	(-)60			V
C-E Breakdown Voltage	$V(BR)_{CEO}$	$I_C(-)100\mu A, R_{BE}=\infty$	(-)50			V
E-B Breakdown Voltage	$V(BR)_{EBO}$	$I_E(-)10\mu A, I_C=\infty$	(-)5			V
Rise Time	$t_{on}$	$\left[ \begin{array}{l} V_{CC}=20V \\ I_C=10I_{B1}=-10I_{B2}=100mA \end{array} \right]$		70 (70)		ns
Storage Time	$t_{stg}$			400 (400)		ns
Fall Time	$t_f$			70 (50)		ns

\* : The 2SA1339/2SC3393 are classified by 10mA  $h_{FE}$  as follows:

100 R	200	140 S	280
200 T	400	280 U	560

**Switching Time Test Circuit**

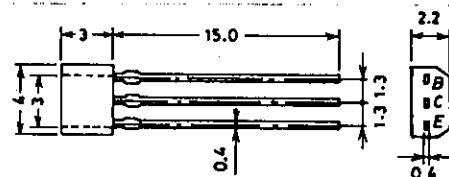


(For PNP, the polarity is reversed.)

Unit(Resistance :  $\Omega$ , Capacitance : F)

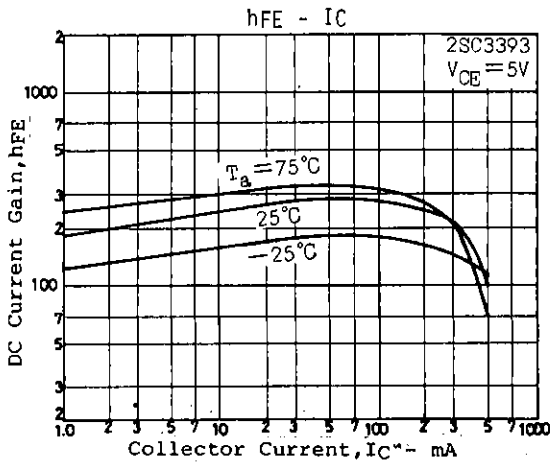
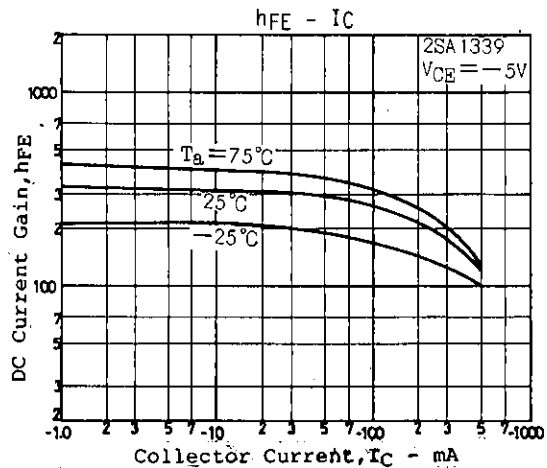
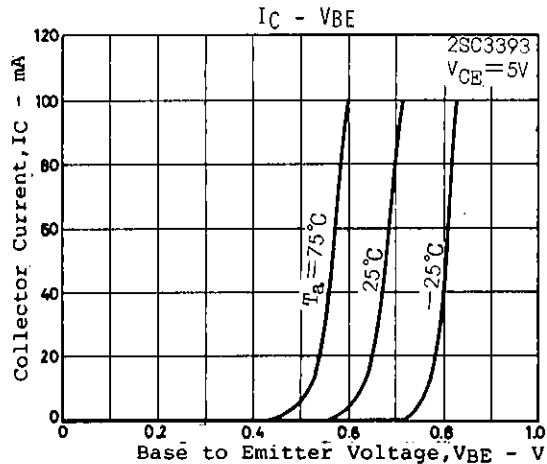
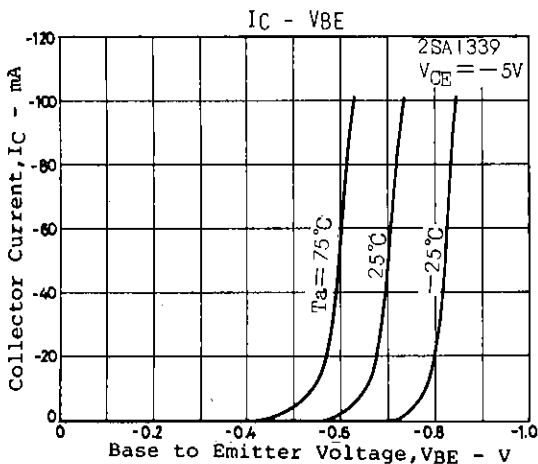
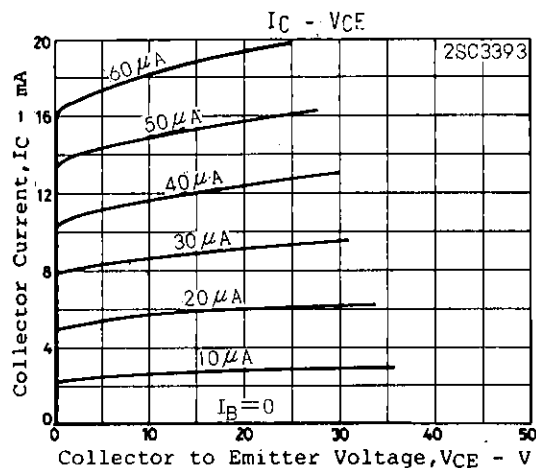
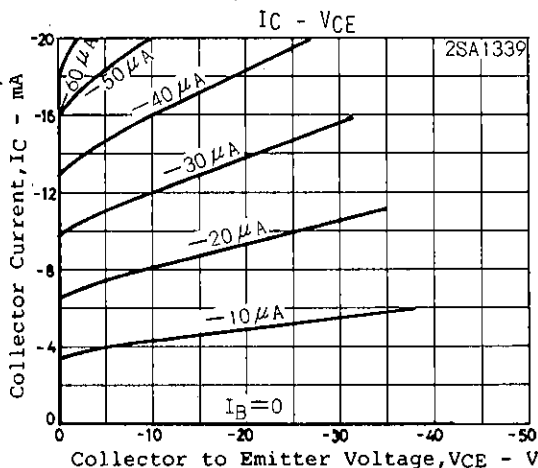
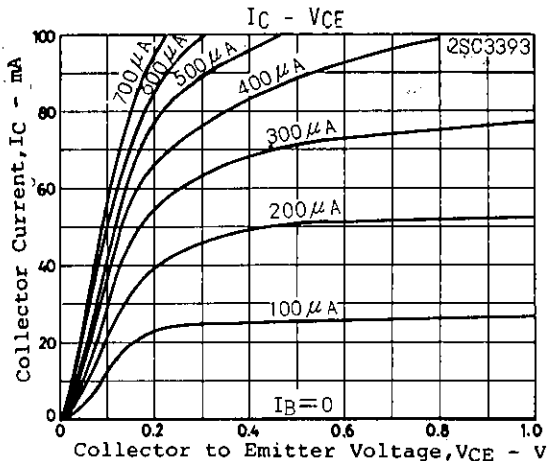
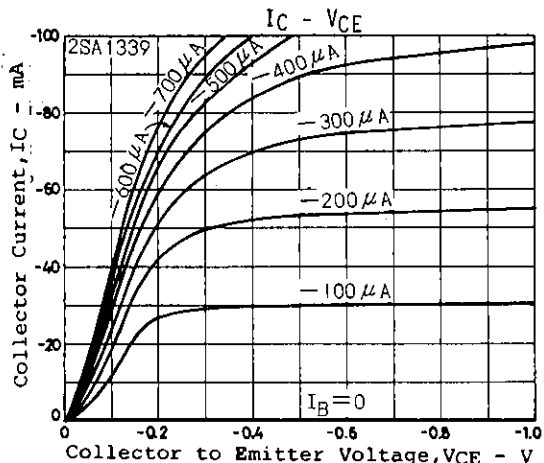
**Package Dimensions 2033**

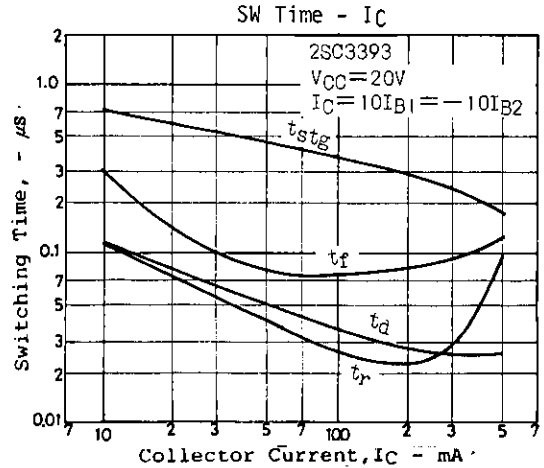
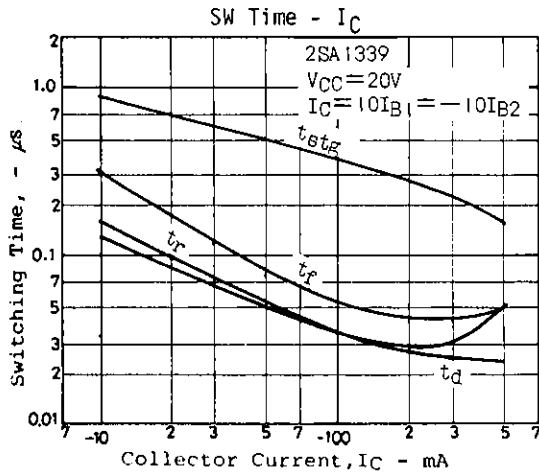
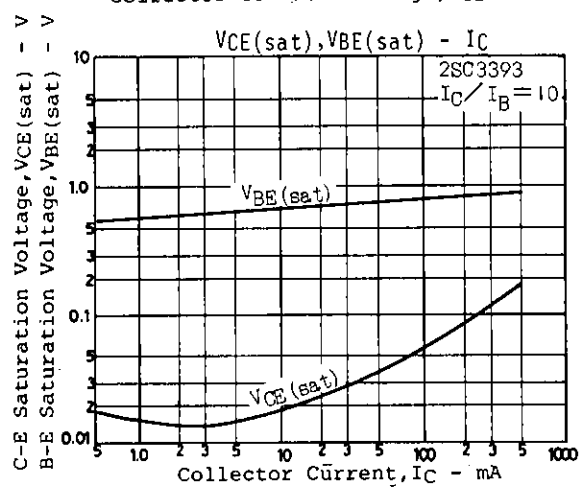
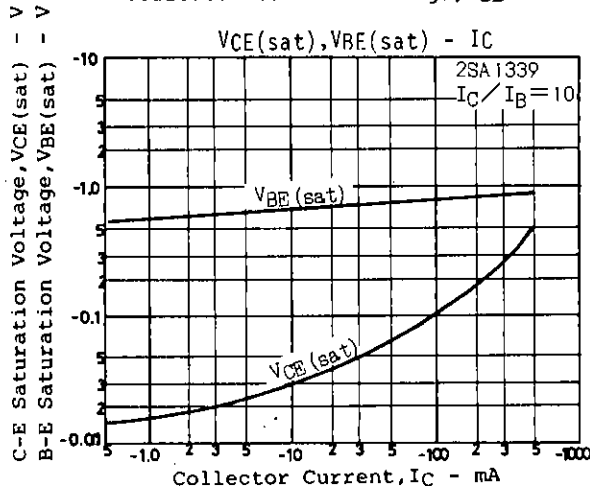
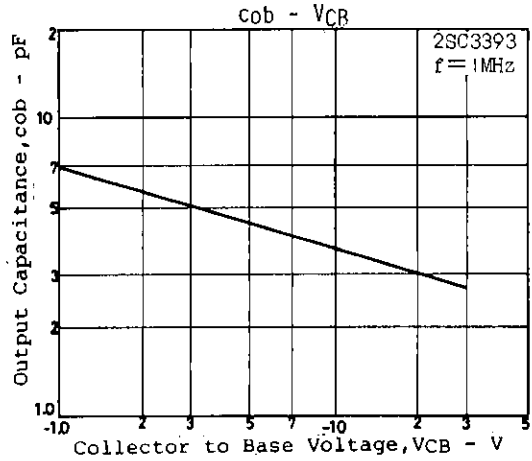
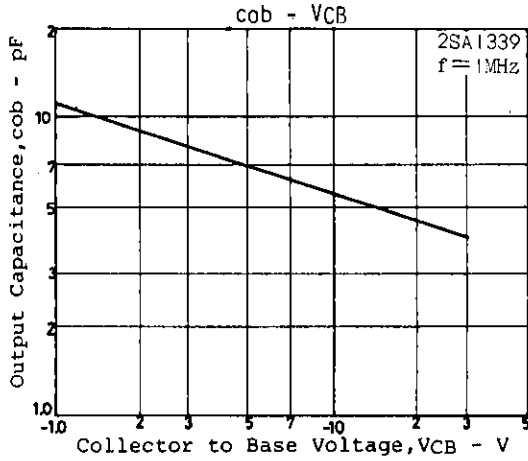
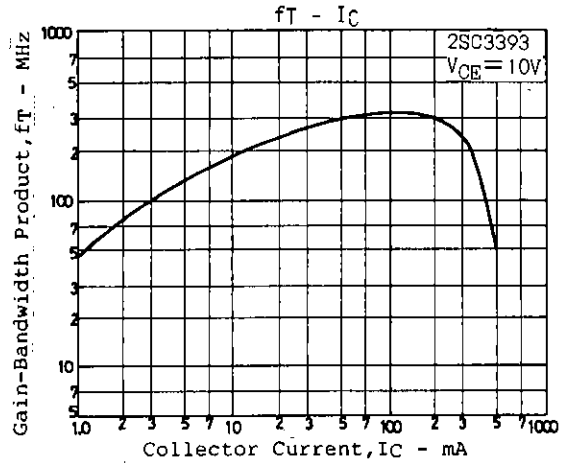
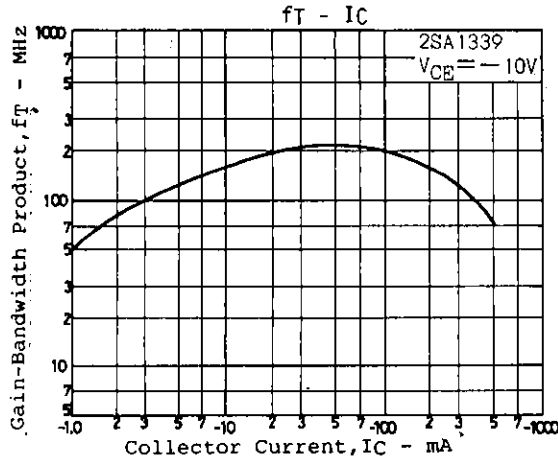
(unit: mm)

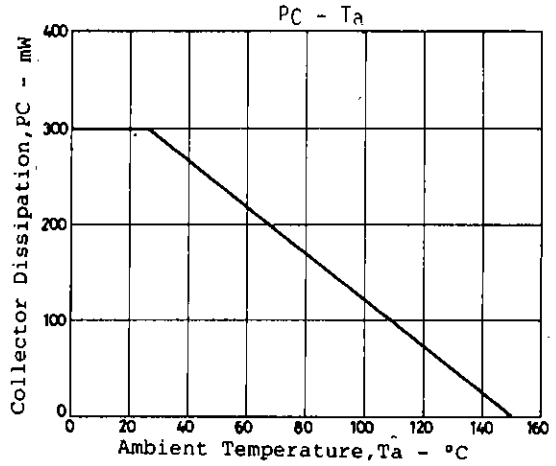
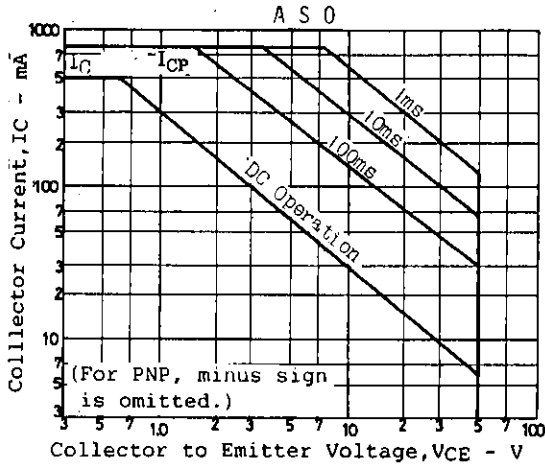


B: Base  
C: Collector  
E: Emitter

SANYO: SPA







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