

**SANYO**

No.1421A

**2SA1338/2SC3392**

PNP/NPN Epitaxial Planar Silicon Transistors

High-Speed Switching Applications

## Features

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

( ): 2SA1338

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
Collector Current(Pulse)	$I_{CP}$	(-)800	mA
Collector Dissipation	$P_C$	200	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

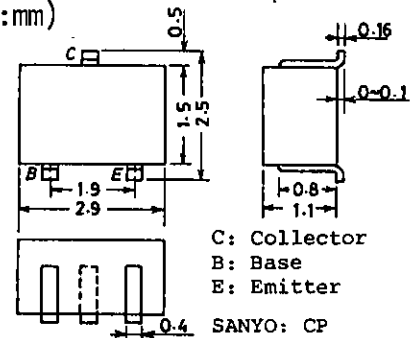
Electrical Characteristics at  $T_a=25^\circ C$ 

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)40V, I_E=0$			(-)0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4V, I_C=0$			(-)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 (200)		MHz
Output Capacitance	$c_{ob}$	$V_{CB}=(-)10V, f=1MHz$		3.7 (5.6)		pF
C-E Saturation Voltage	$V_{CE}(sat)$	$I_C=(-)100mA, I_B=(-)10mA$		0.1 (0.15)	0.3 (0.4)	V
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	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)5			V
Turn-on Time	$t_{on}$	$V_{CC}=20V,$		70(70)		ns
Storage Time	$t_{stg}$	$I_C=10I_{B1}=-10I_{B2}=100mA$	400(400)			ns
Fall Time	$t_f$			70(50)		ns

\* : The 2SA1338/2SC3392 are classified by 10mA  $h_{FE}$  as follows:

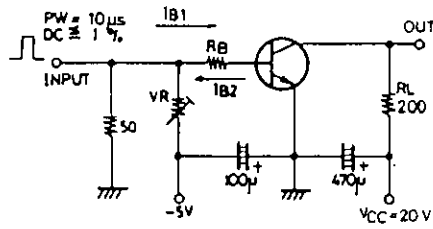
2SA1338/ 2SC3392	100	4	200	140	5	280
	200	6	400	280	7	560

(Note) 2SA1338 marking:AL/2SC3392 marking:AY  
 $h_{FE}$  rank: 4, 5, 6, 7

Package Dimensions 2018A  
(unit:mm)**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

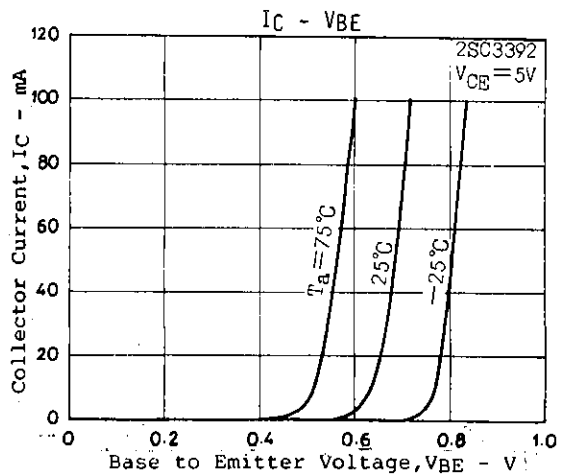
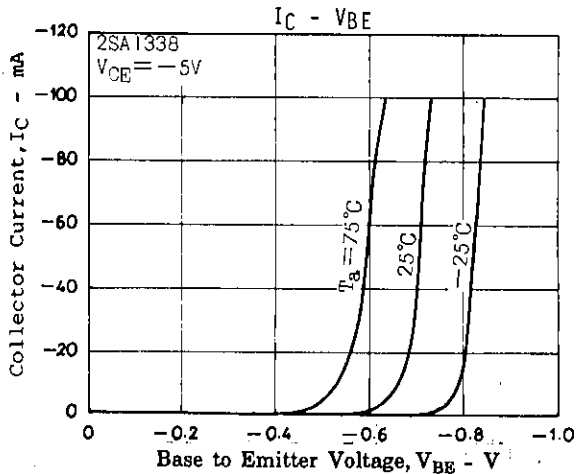
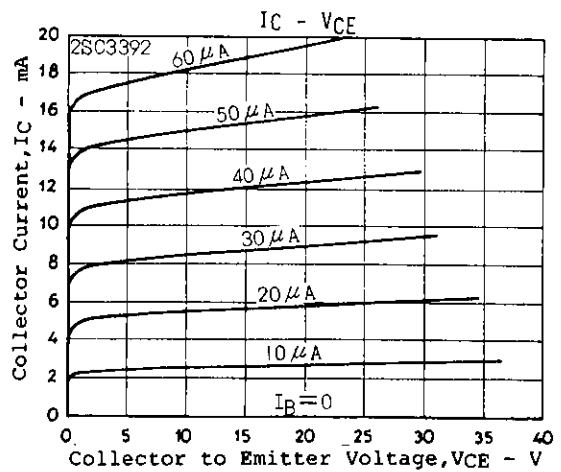
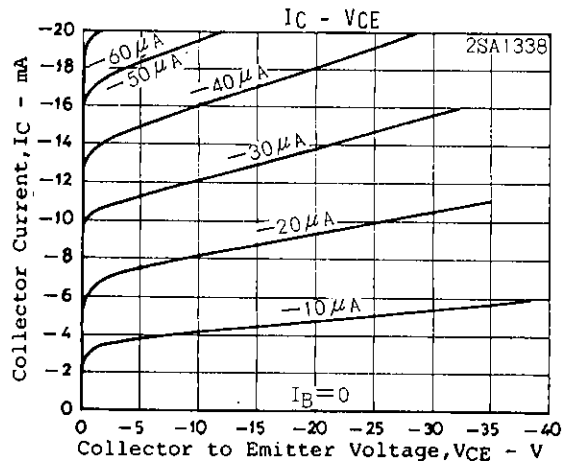
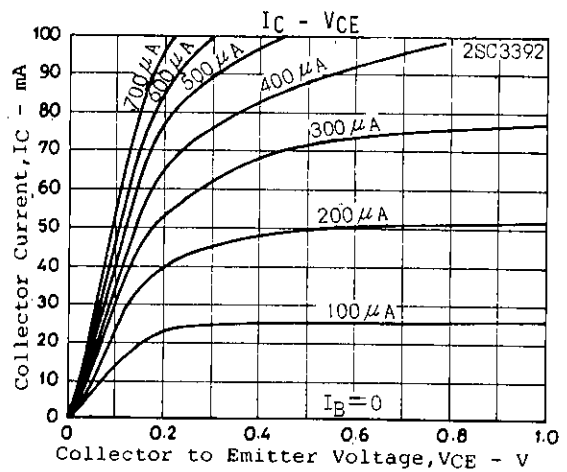
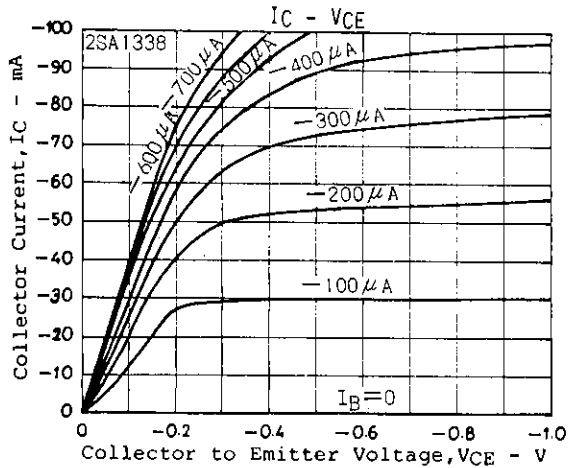
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Switching Time Test Circuit

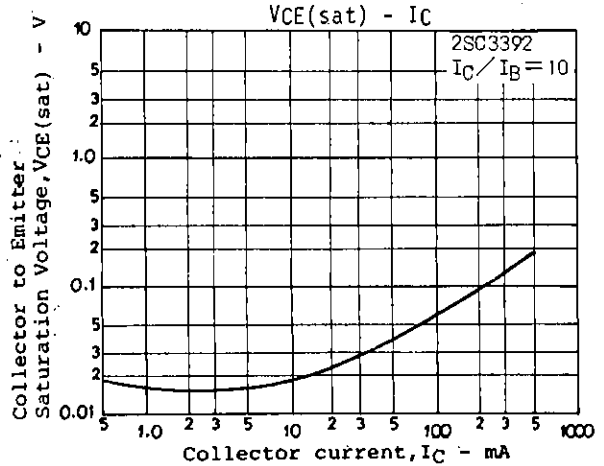
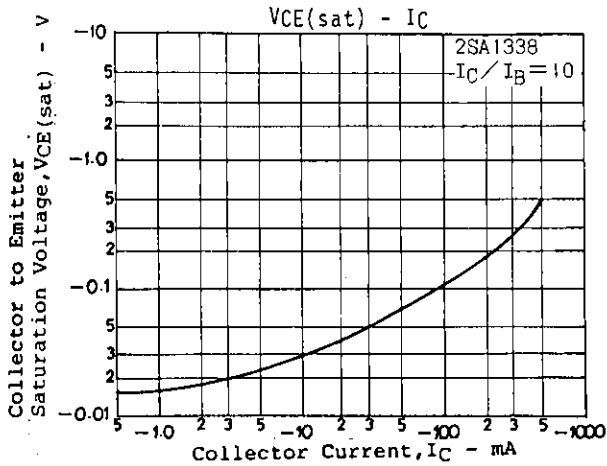
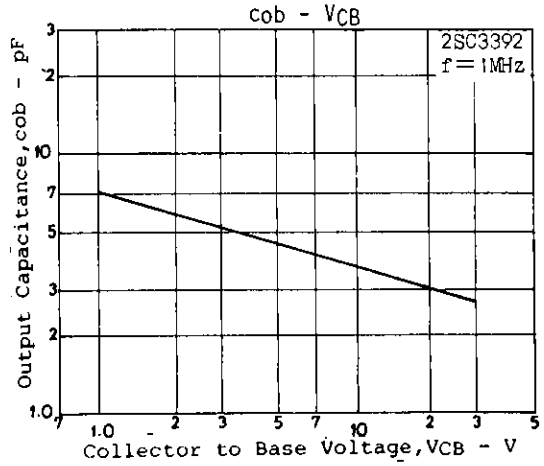
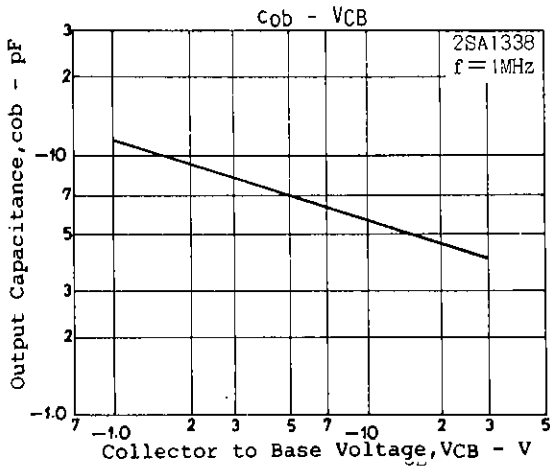
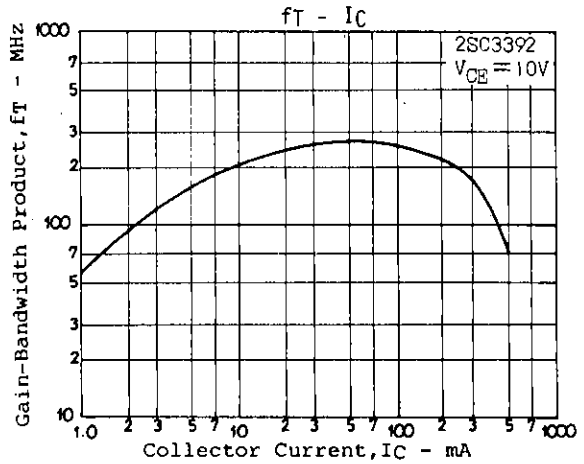
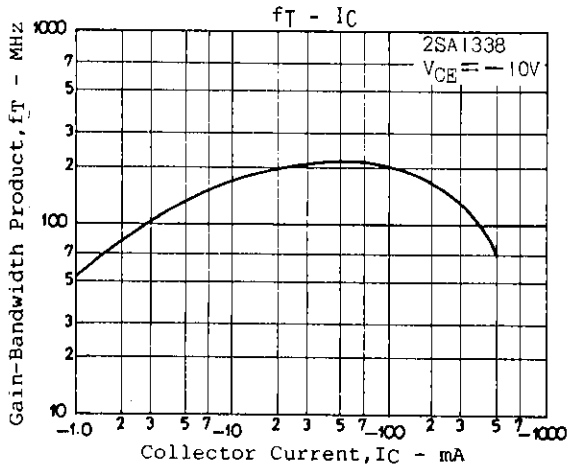
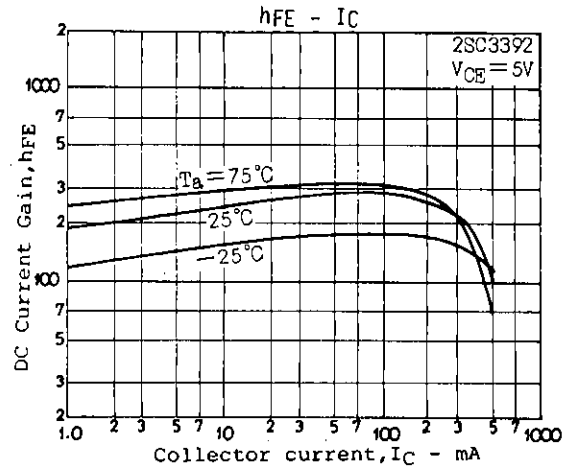
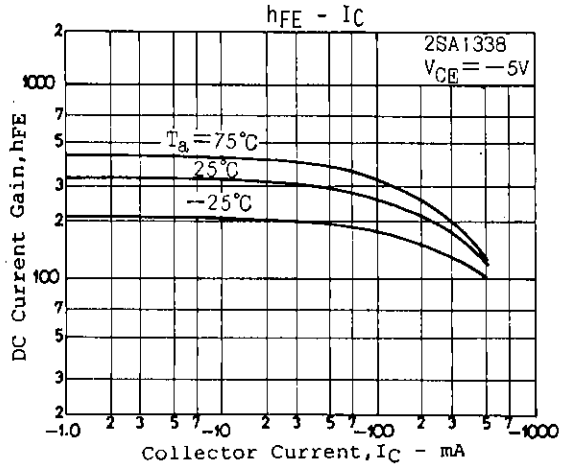


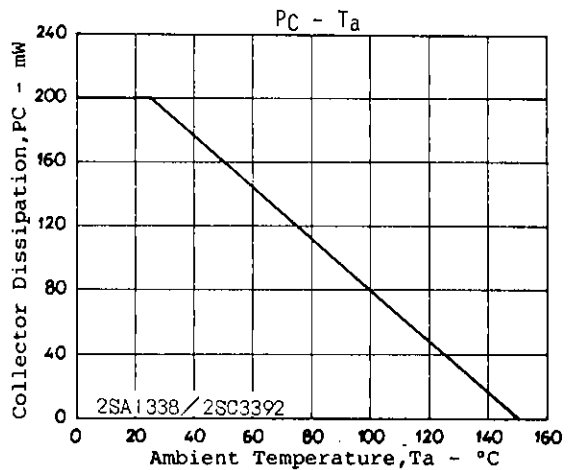
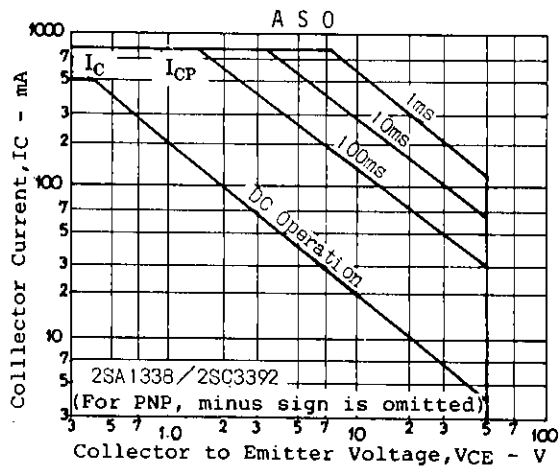
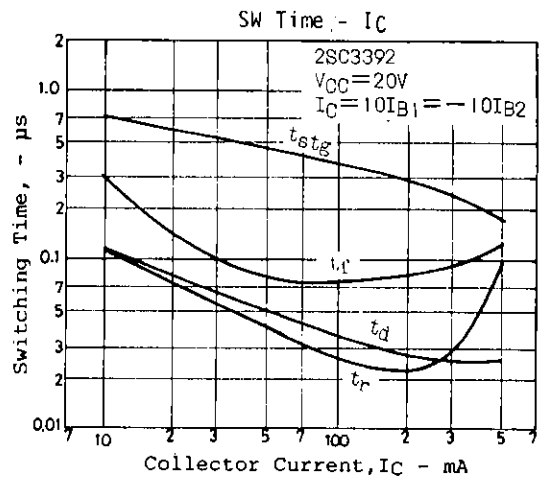
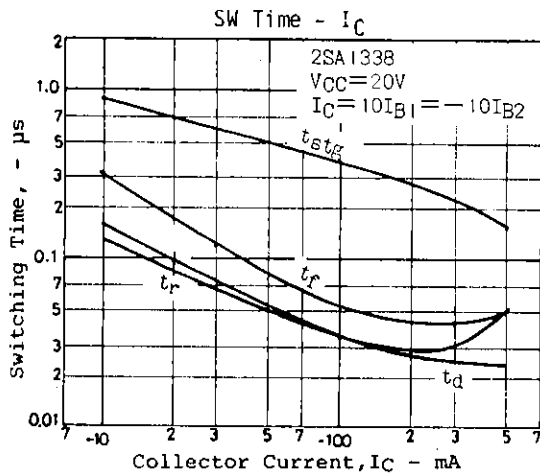
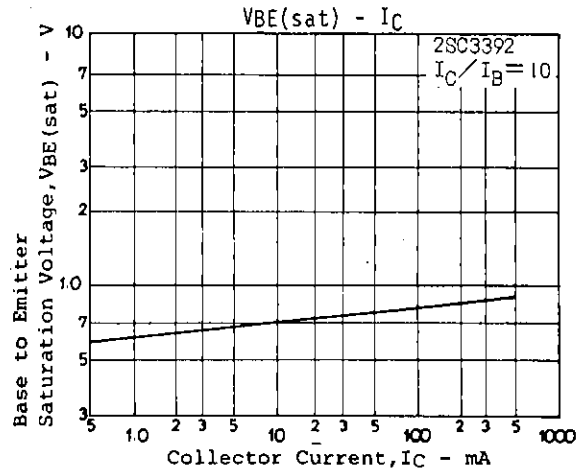
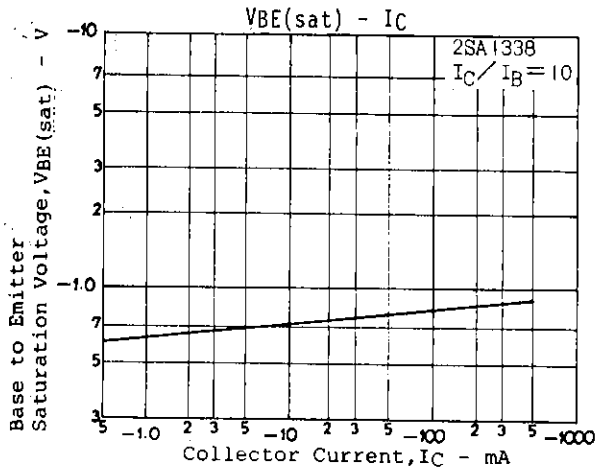
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω, Capacitance : F)



2SA1338/2SC3392





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