

**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	$^\circ C$

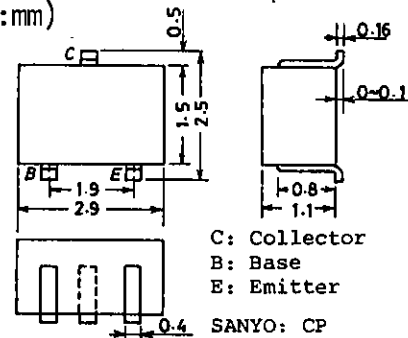
Electrical Characteristics at  $T_a = 25^\circ C$ 

			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:

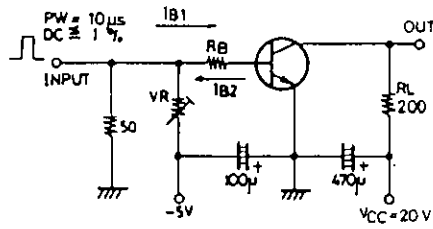
2SA1338/ 2SC3392	100	4	200	140	5	280
	200	6	400	280	7	560

(Note) 2SA1338 marking:AL/2SC3392 marking:AY

 $h_{FE}$  rank: 4, 5, 6, 7Package Dimensions 2018A  
(unit:mm)**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

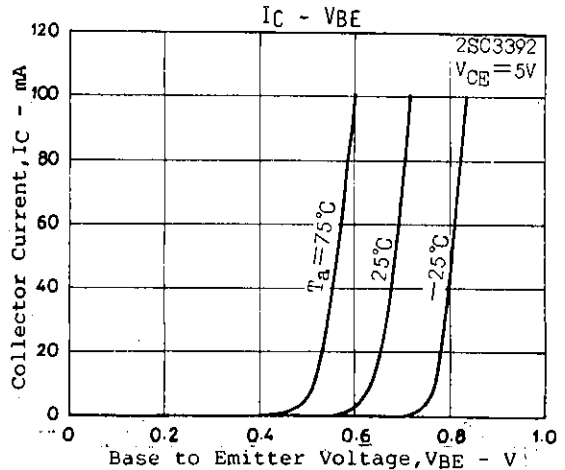
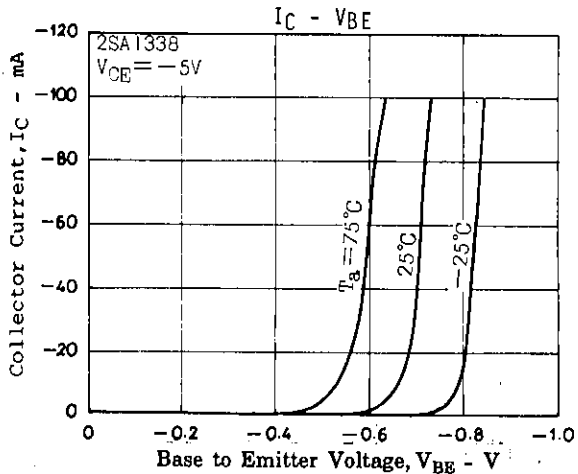
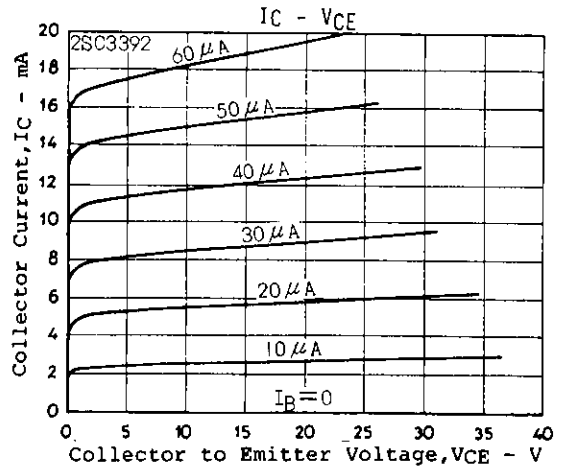
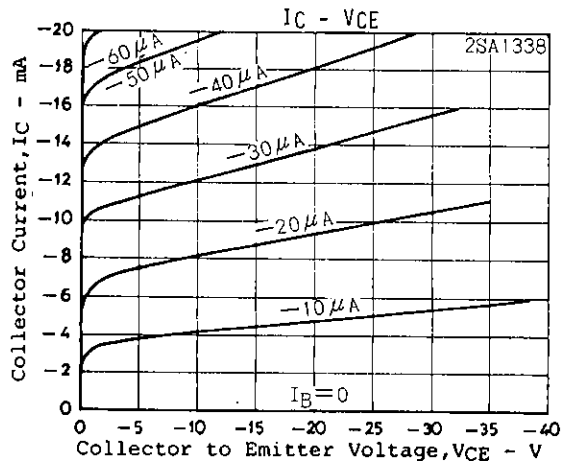
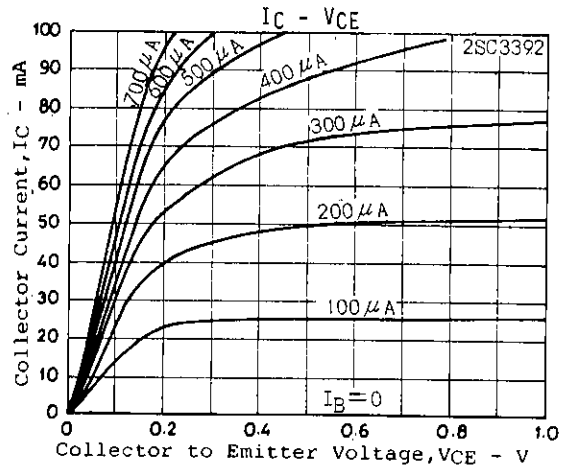
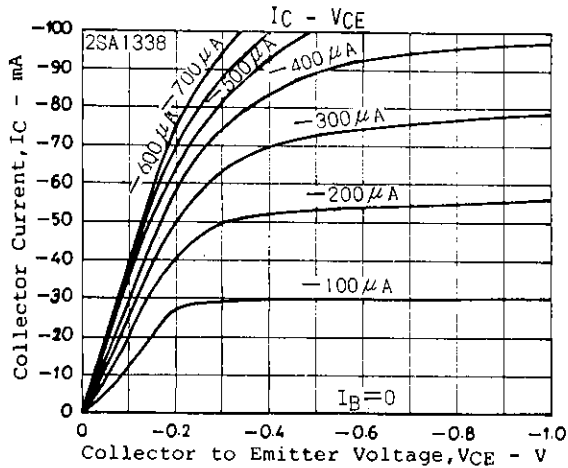
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Switching Time Test Circuit

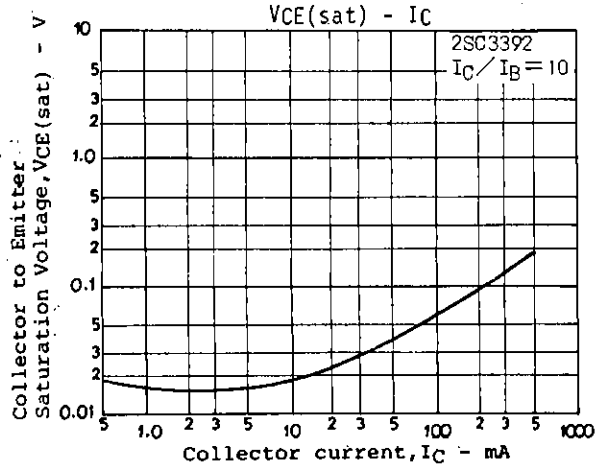
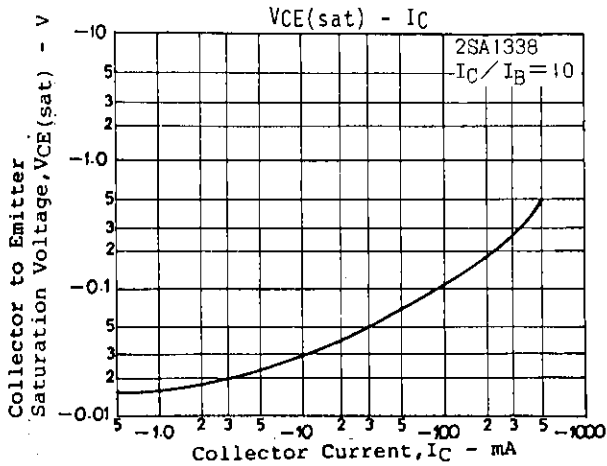
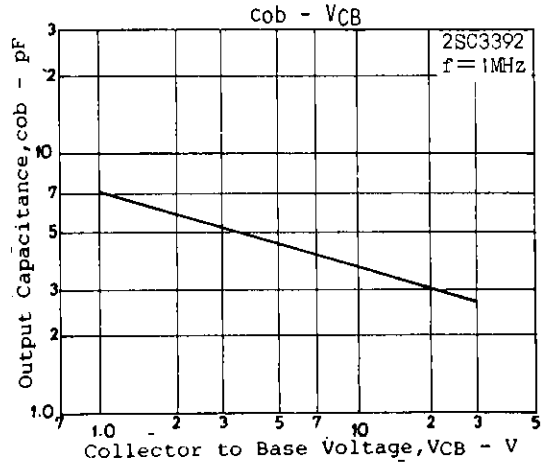
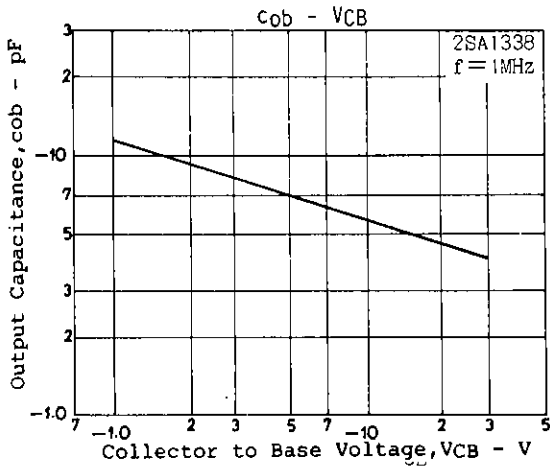
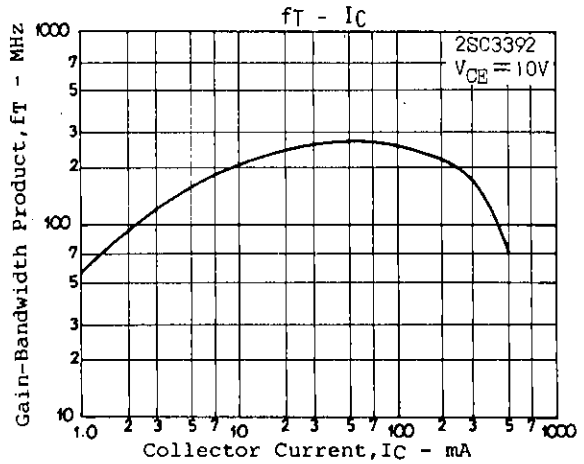
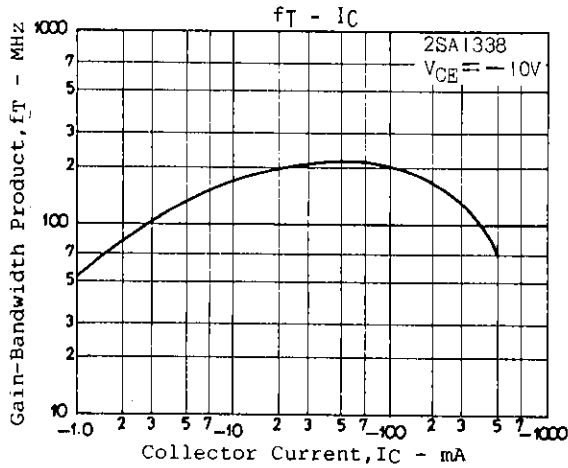
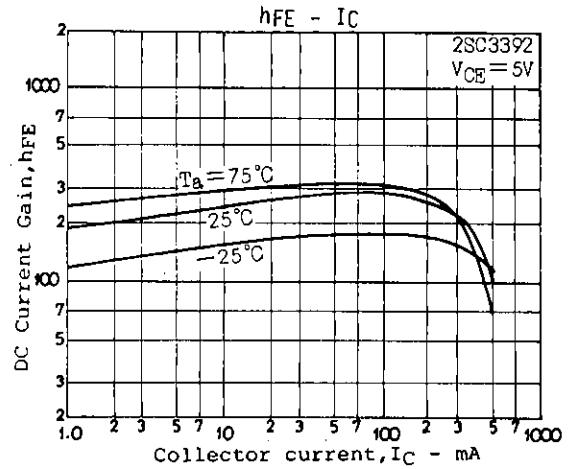
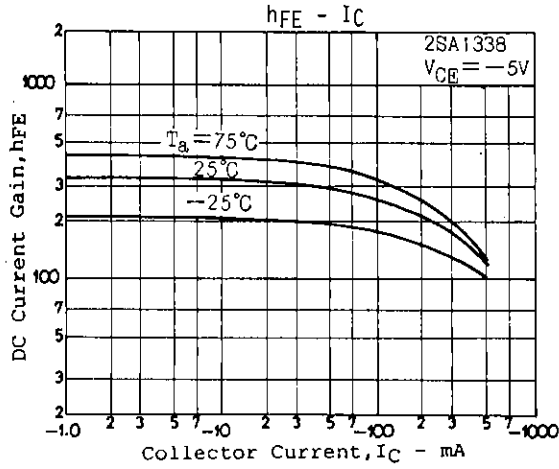


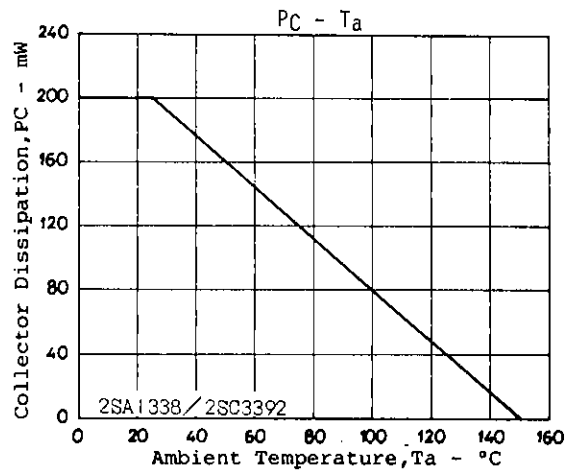
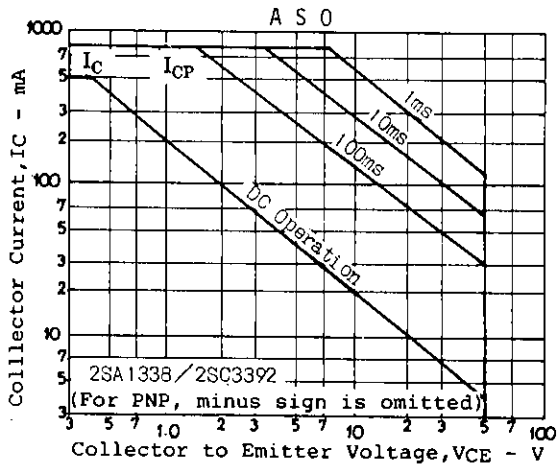
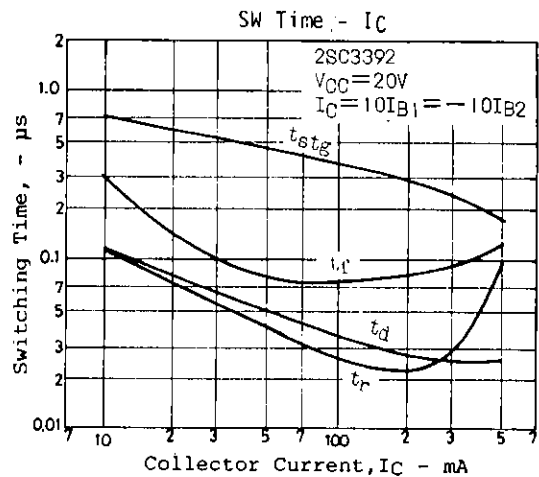
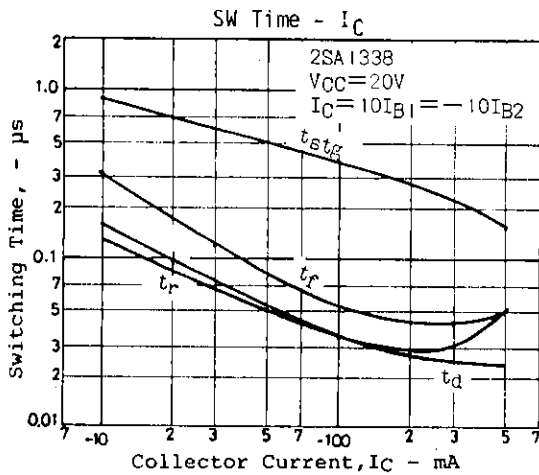
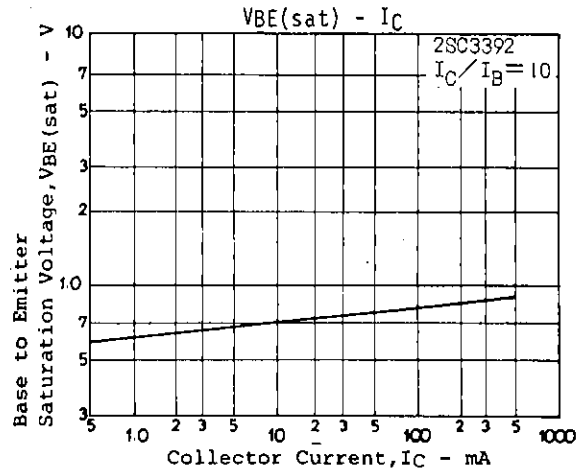
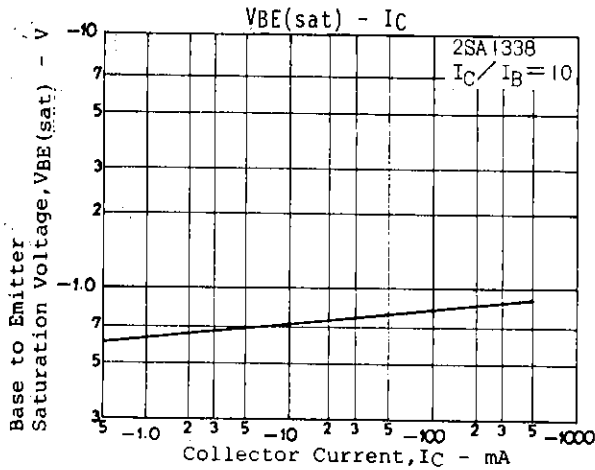
(For PNP, the polarity is reversed.)

Unit (Resistance : Ω, Capacitance : F)



2SA1338/2SC3392





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