

# 2SA1338/2SC3392

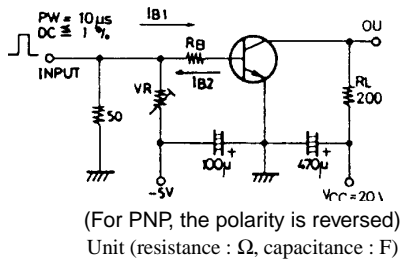


## High-Speed Switching Applications

### 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.

### Switching Time Test Circuit



( ) : 2SA1338

### Specifications

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

Parameter	Symbol	Conditions	Ratings	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 $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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
Common Base Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		3.7 (5.6)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)100mA, I_B = (-)10mA$		0.1 (0.15)	0.3 (0.4)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)100mA, I_B = (-)10mA$		0.8	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)100\mu A, R_{BE} = \infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V
Turn-ON Time	$t_{on}$			70(70)		ns
Storage Time	$t_{stg}$	$V_{CC} = 20V, I_C = 10I_{B1} = -10I_{B2} = 100mA$		400 (400)		ns
Fall Time	$t_f$			70(50)		ns

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

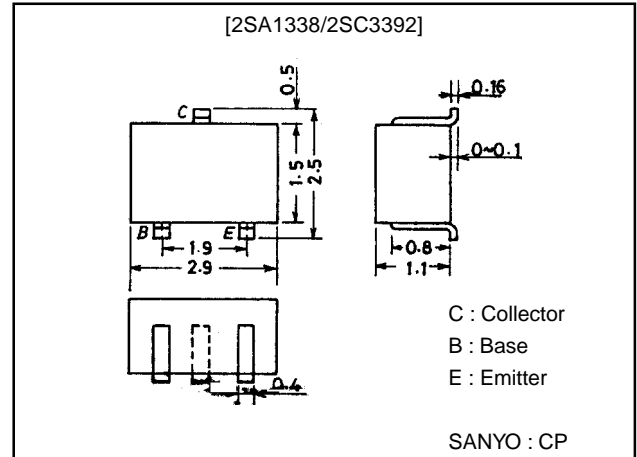
2SA1338			2SC3392		
100	4	200	140	5	280
200	6	400	280	7	560

Note : 2SA1338 Marking : AL, 2SC3392 Marking : AY  
 $h_{FE}$  rank : 4, 5, 6, 7

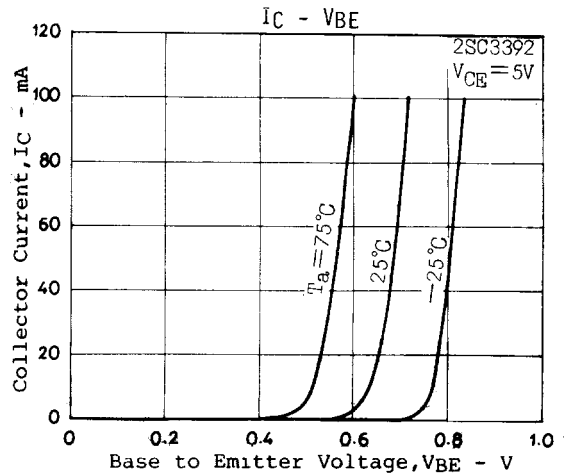
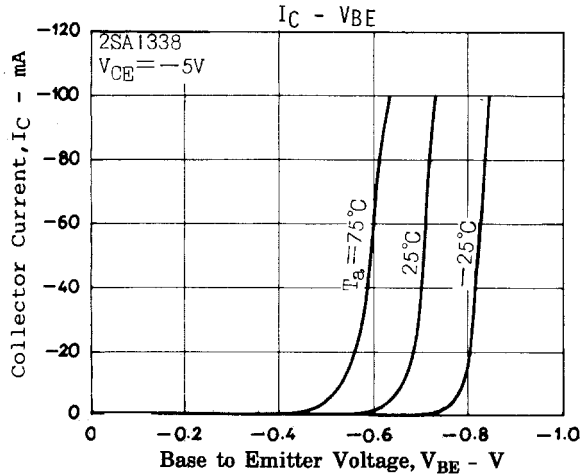
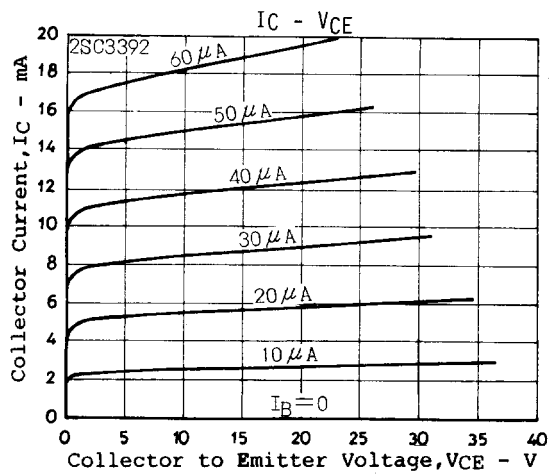
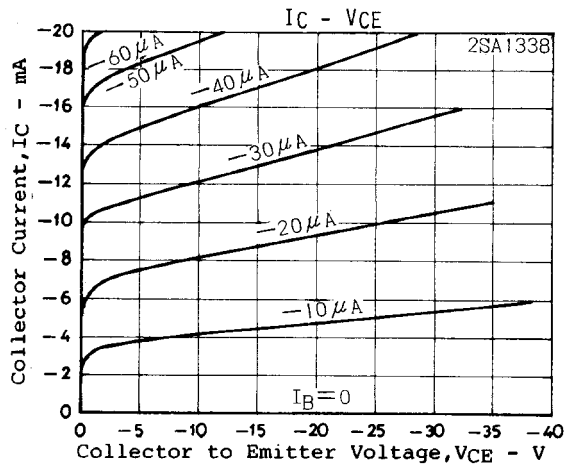
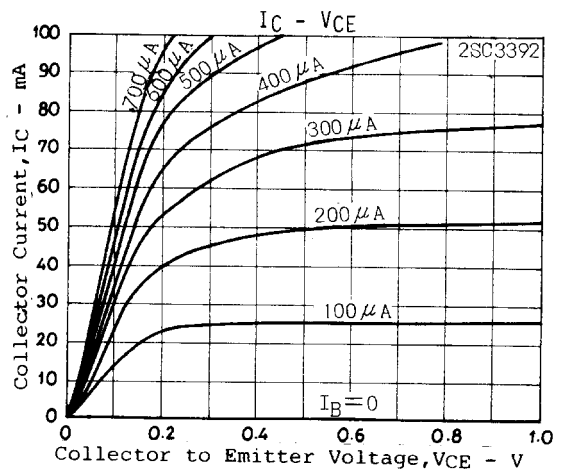
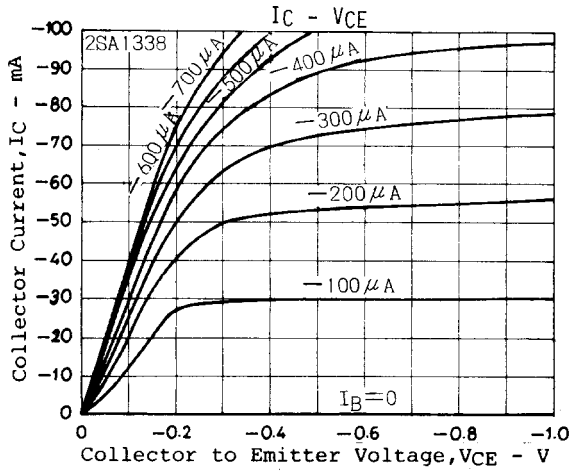
### Package Dimensions

unit:mm

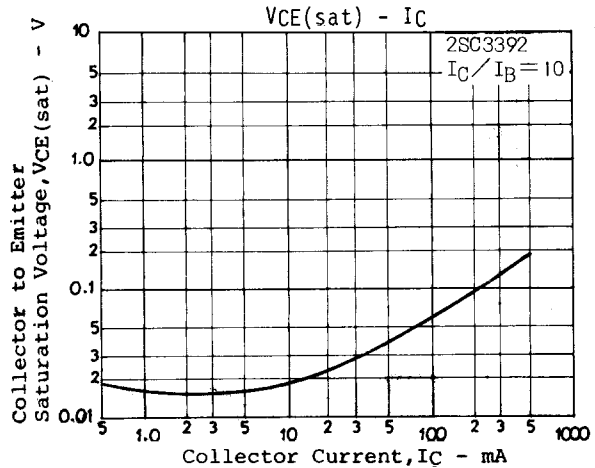
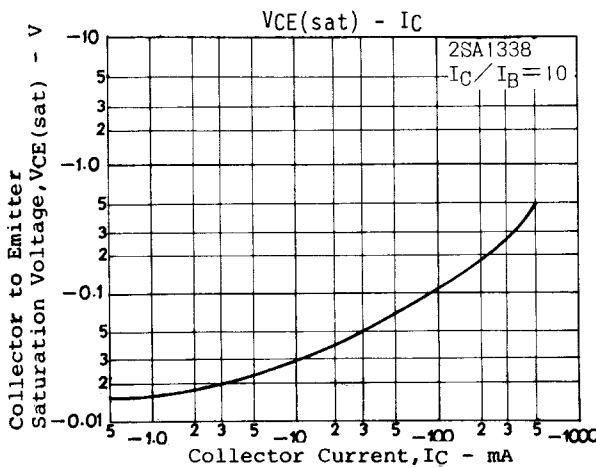
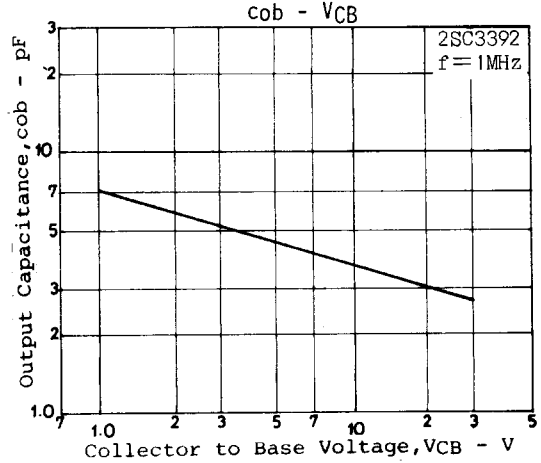
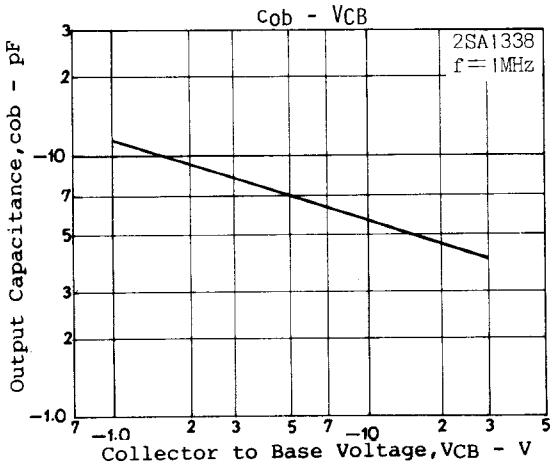
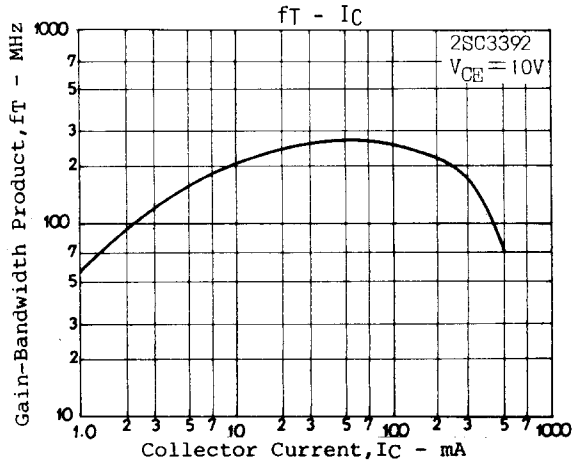
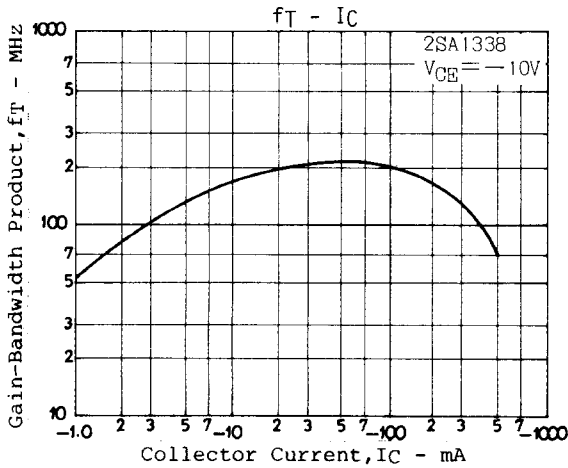
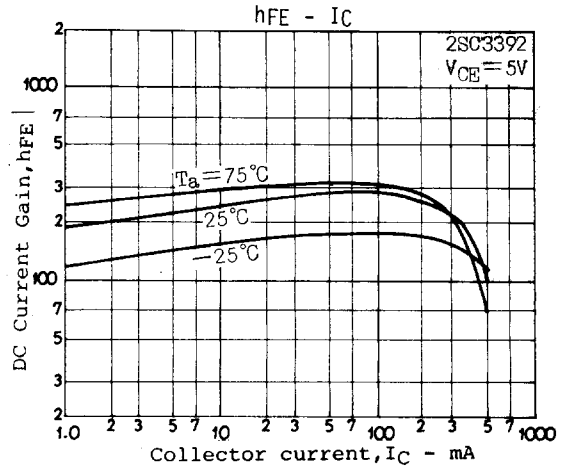
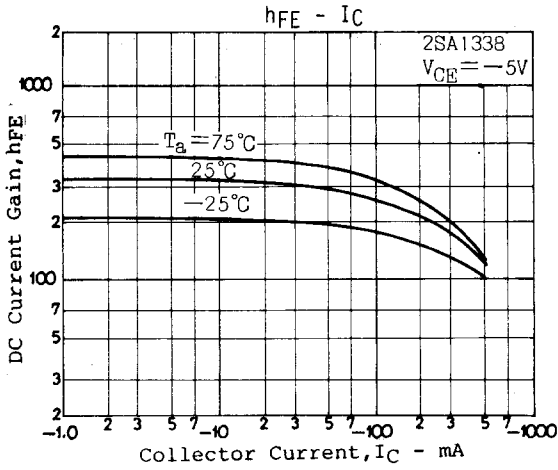
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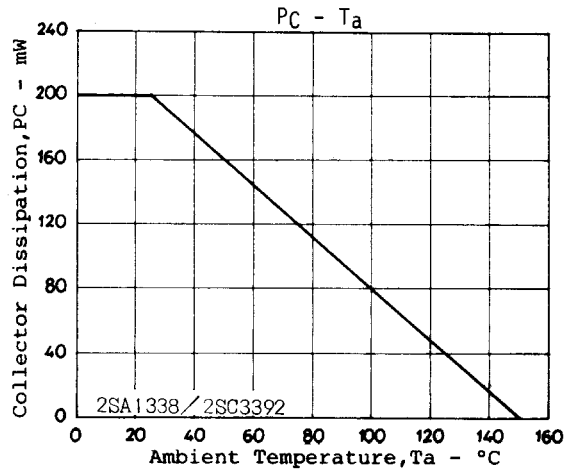
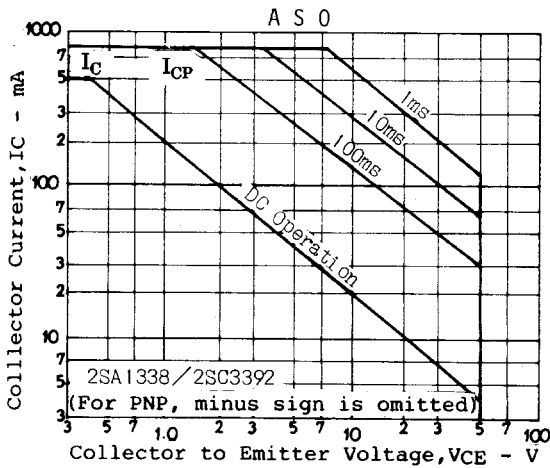
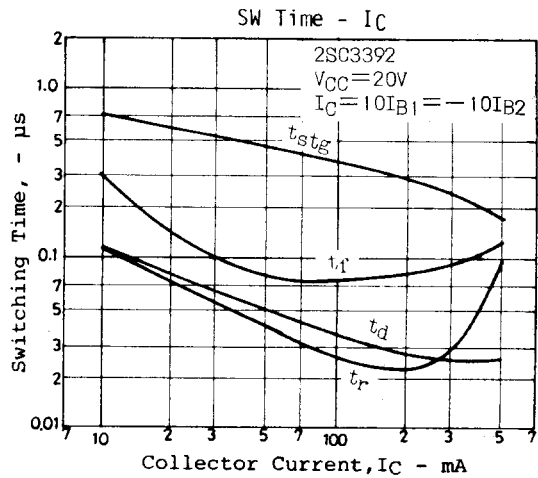
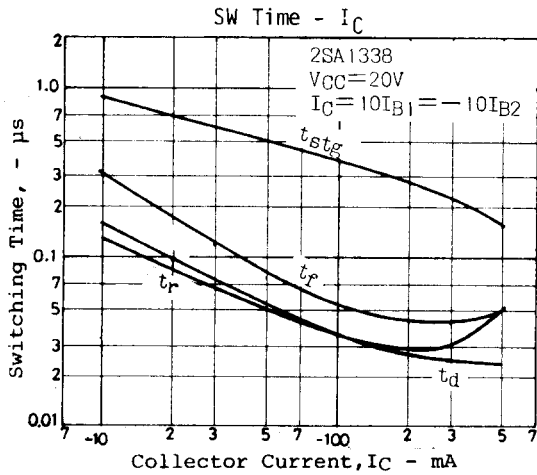
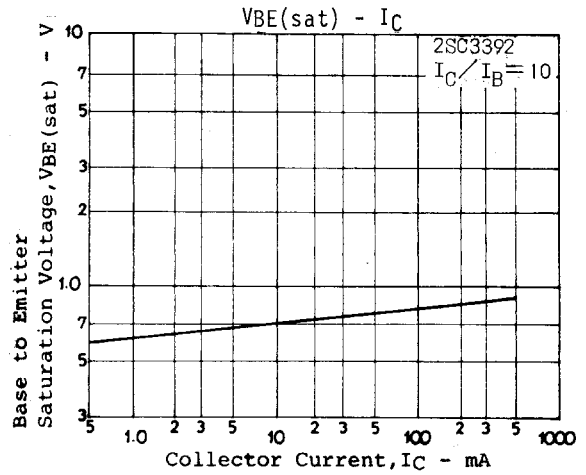
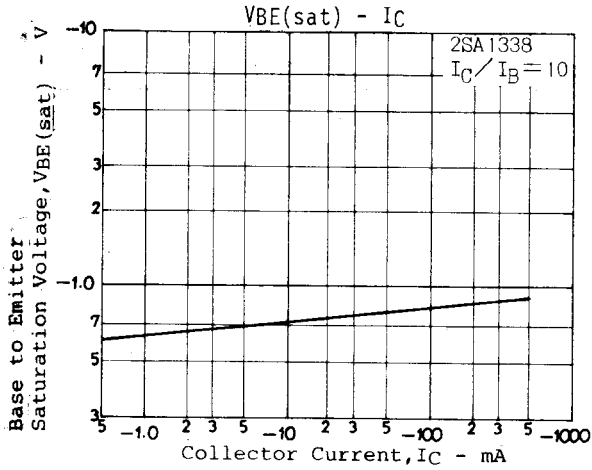
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