

PNP Transistors

2SA1338

■ Features

- Adoption of FBET process.
- High breakdown voltage : $V_{CE0}=-50V$.
- Large current capacity and high fr.
- Ultrasmall-sized package permitting sets to be small sized, slim.
- Complementary to 2SC3392

■ Absolute Maximum Ratings $T_a = 25^\circ C$

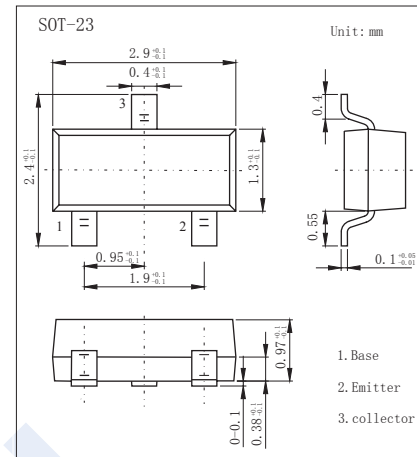
Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-500	mA
Collector current (pulse)	I_{CP}	-800	mA
Collector dissipation	P_C	200	mW
Jumction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = -100 \mu A, I_E = 0$	-60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = -1 mA, I_B = 0$	-50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = -100 \mu A, I_C = 0$	-5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = -40 V, I_E = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4V, I_C = 0$			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100 mA, I_B = -10 mA$		0.15	0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -100 mA, I_B = -10 mA$		0.8	1.2	
DC current gain	h_{FE}	$V_{CE} = -5V, I_C = -10 mA$	100		560	
Turn-on time	t_{on}	$V_{CC} = -20V, I_C = -10 I_{B1} = -10 I_{B2} = 100 mA$		70		ns
Storage time	t_{stg}			400		
Fall time	t_r			50		
Common base output capacitance	C_{ob}	$V_{CB} = -10V, f = 1 MHz$		5.6		pF
Transition frequency	f_r	$V_{CE} = -10V, I_C = -50 mA$		200		MHz

■ Classification of h_{fe}

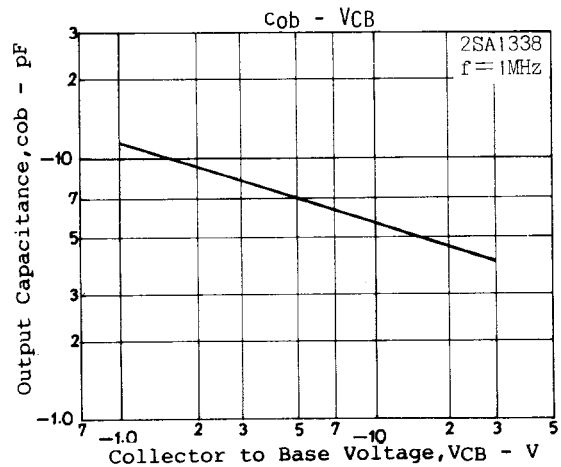
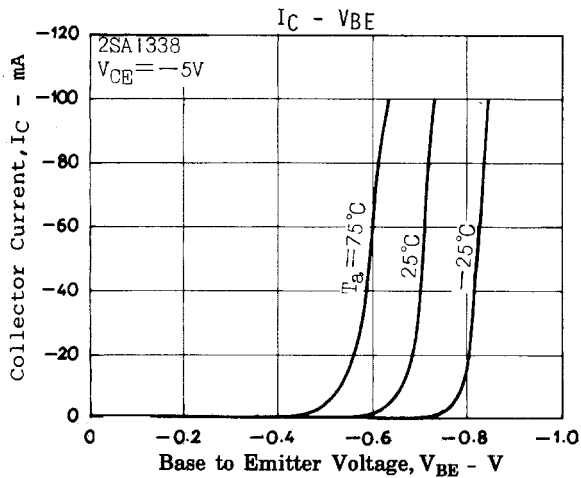
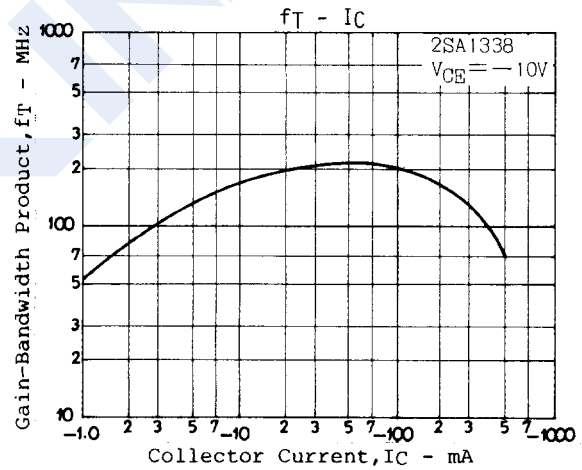
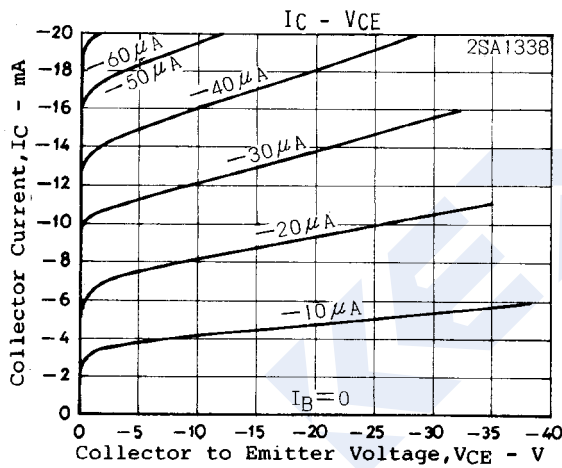
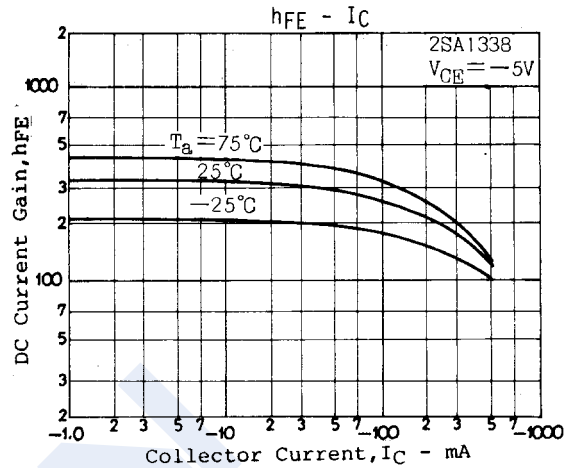
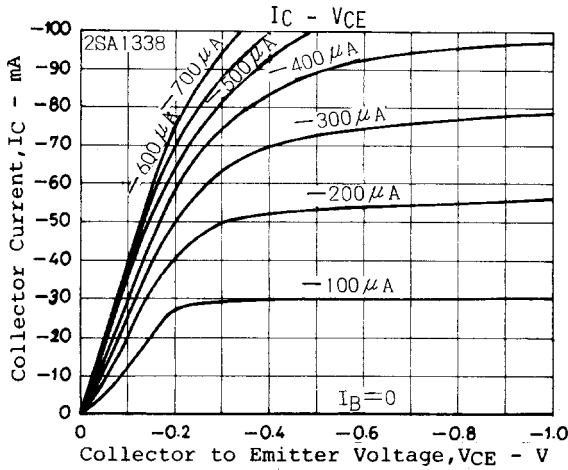
Type	2SA1338-AL4	2SA1338-AL5	2SA1338-AL6	2SA1338-AL7
Range	100-200	140-280	200-400	280-560
Marking	AL4	AL5	AL6	AL7



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■ Typical Characteristics



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