

〈SMALL-SIGNAL TRANSISTOR〉

**2SA1398**

**FOR HIGH CURRENT APPLICATION  
SILICON PNP EPITAXIAL TYPE**

**DESCRIPTION**

2SA1398 is a silicon PNP epitaxial type transistor designed with high collector current, small  $V_{CE(sat)}$ .

Complementary with 2SC3580.

**FEATURE**

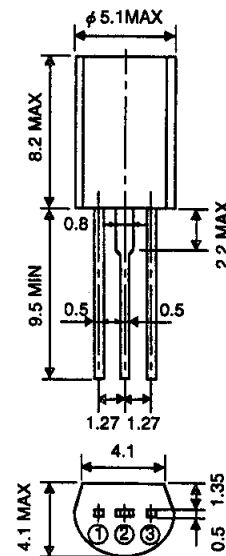
- High collector current  $I_{CM}=-1A$
- High gain band width product  $f_T=180MHz$  typ
- Low collector to emitter saturation voltage  $V_{CE(sat)}=-0.25V$  typ
- Excellent linearity of DC forward current gain

**APPLICATION**

Small type motor drive, relay drive, power supply application.

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

- ① : EMITTER      EIAJ : —
- ② : COLLECTOR    JEDEC : —
- ③ : BASE

Note) The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

Symbol	Parameter	Ratings	Unit
V <sub>CB0</sub>	Collector to Base voltage	-25	V
V <sub>EB0</sub>	Emitter to Base voltage	-4	V
V <sub>CE0</sub>	Collector to Emitter voltage	-20	V
I <sub>CM</sub>	Peak Collector current	-1	A
I <sub>C</sub>	Collector current	-700	mA
P <sub>C</sub>	Collector dissipation(Ta=25°C)	900	mW
T <sub>J</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55 to +150	°C

**ELECTRIAL CHARACTERISTICS RATINGS (Ta=25°C)**

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>C</sub> =-10 μA, I <sub>E</sub> =0	-25			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> =-10 μA, I <sub>C</sub> =0	-4			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>C</sub> =-100 μA, R <sub>BE</sub> =∞	-20			V
I <sub>CB0</sub>	Collector cut off current	V <sub>CB</sub> =-25V, I <sub>E</sub> =0			-1	μA
I <sub>EB0</sub>	Emitter cut off current	V <sub>EB</sub> =-2V, I <sub>C</sub> =0			-1	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> =-4V, I <sub>C</sub> =-100mA	150		800	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> =-500mA, I <sub>B</sub> =-25mA		-0.25	-0.5	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =-6V, I <sub>E</sub> =10mA		180		MHz

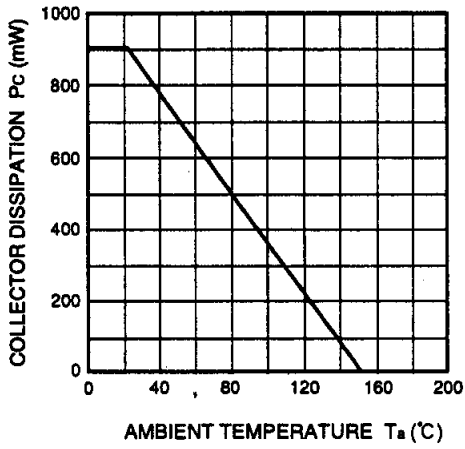
\* : It shows h<sub>FE</sub> classification in right table.

Item	E	F	G
h <sub>FE</sub>	150 to 300	250 to 500	400 to 800

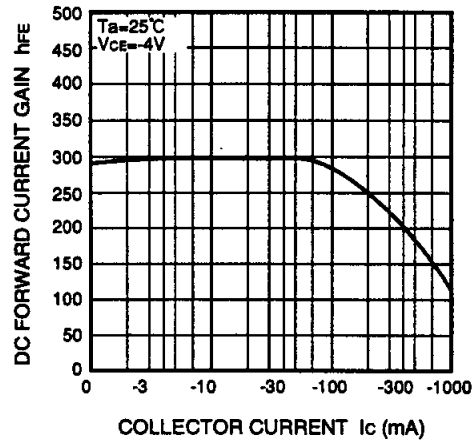
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TYPICAL CHARACTERISTICS

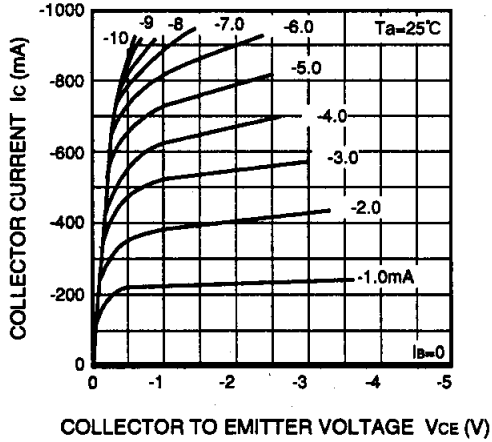
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



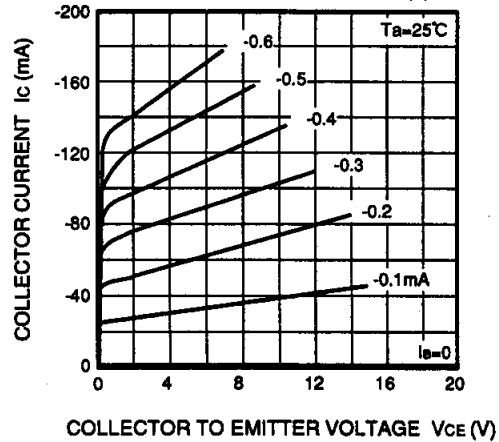
DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



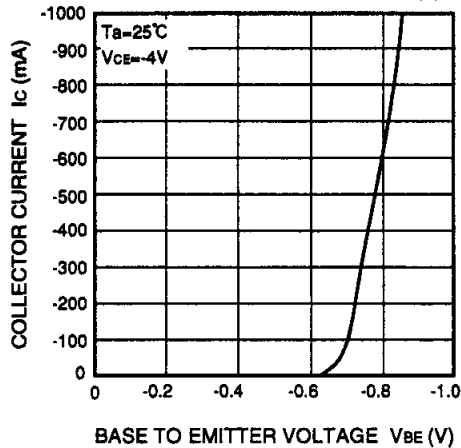
COMMON EMITTER OUTPUT (1)



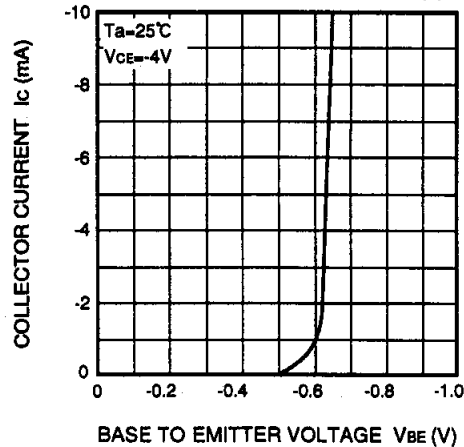
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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