

(SMALL-SIGNAL TRANSISTOR)

**2SC3580**

FOR HIGH CURRENT DRIVE APPLICATION  
SILICON NPN EPITAXIAL TYPE

**DESCRIPTION**

2SC3580 is a silicon NPN epitaxial type transistor.

Complementary with 2SA1398.

**FEATURE**

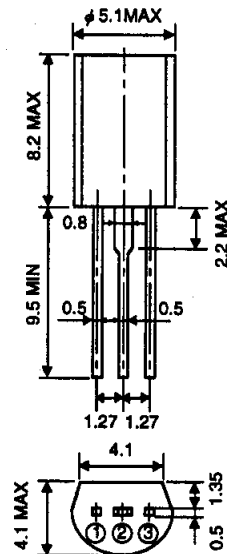
- High collector current  $I_{CM}=1A$
- High gain band width product  $f_T=180MHz$  typ
- Low collector to emitter saturation voltage  $V_{CE(sat)}=0.2V$  typ
- Excellent linearity of DC forward current gain

**APPLICATION**

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

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

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

Note)

The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

Symbol	Parameter	Rating	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

**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

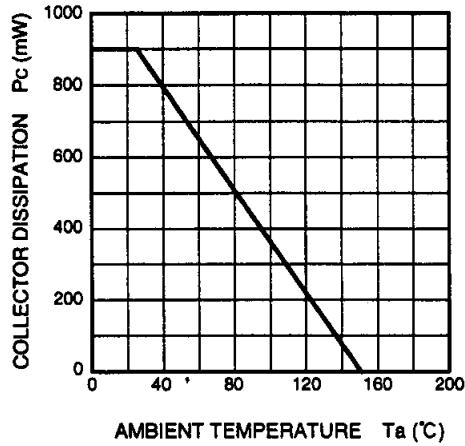
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>C</sub> =10 μA, I <sub>E</sub> =0	25			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> =10 μA, I <sub>C</sub> =0	4			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <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		0.2	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.

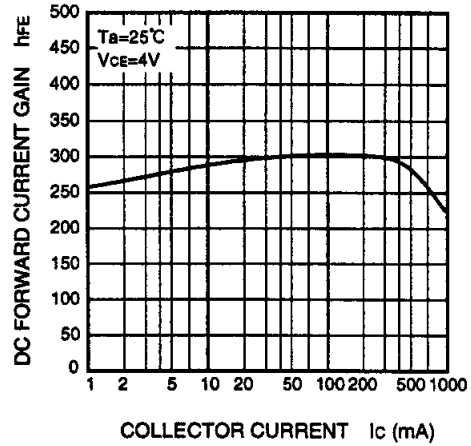
Item	E	F	G
h <sub>FE</sub>	150 to 300	250 to 500	400 to 800

TYPICAL CHARACTERISTICS

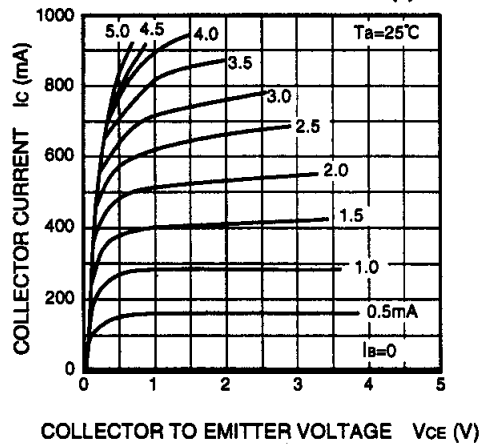
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



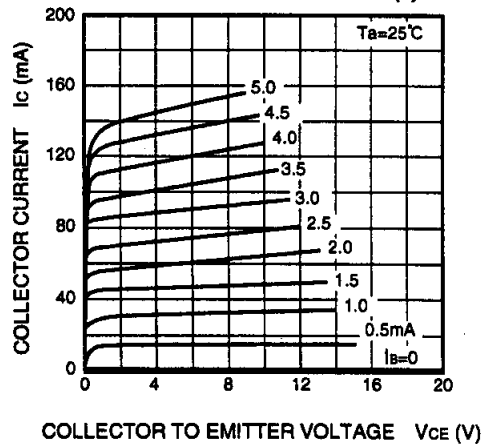
DC FORWARD CURRENT GAIN VS.  
COLLECTOR CURRENT



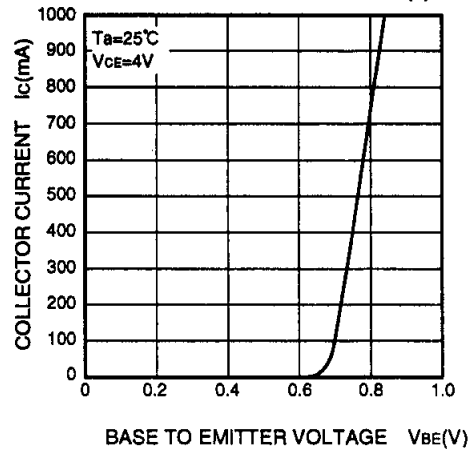
COMMON EMITTER OUTPUT (1)



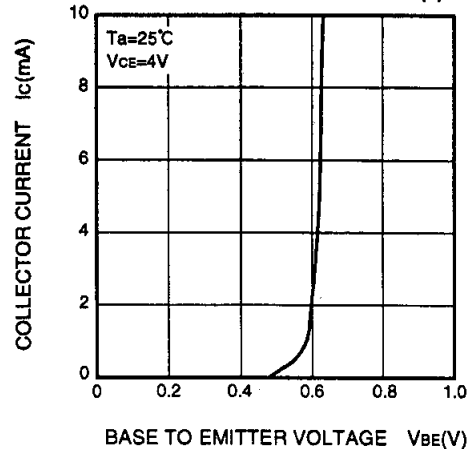
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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