

**FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON NPN EPITAXIAL TYPE**

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DESCRIPTION

2SC3581 is a silicon NPN epitaxial type transistor designed for high collector current application.

Complementary with 2SA1399.

FEATURE

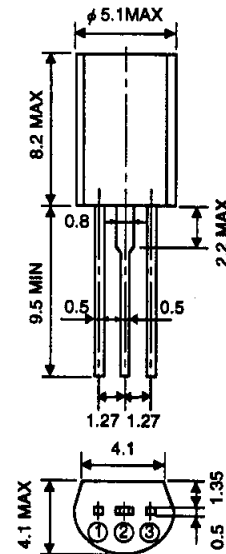
- High collector current $I_{CM}=600\text{mA}$
- High gain band width product $f_T=150\text{MHz}$ typ
- High V_{CEO} $V_{CEO}=50\text{V}$
- Excellent linearity of DC forward current gain

APPLICATION

For switching, small type motor drive, 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 _{CEO}	Collector to Base voltage	55	V
V _{EB0}	Emitter to Base voltage	4	V
V _{CE0}	Collector to Emitter voltage	50	V
I _{CM}	Peak collector current	600	mA
I _C	Collector current	400	mA
P _C	Collector dissipation(Ta=25°C)	900	mW
T _J	Junction temperature	+150	°C
T _{stg}	Storage temperature	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _{(BR)CBO}	C to B break down voltage	I _C =10 μA, I _E =0	55			V
V _{(BR)EBO}	E to B break down voltage	I _E =10 μA, I _C =0	4			V
V _{(BR)CEO}	C to E break down voltage	I _C =100 μA, R _{BE} =∞	50			V
I _{CBO}	Collector cut off current	V _{CB} =25V, I _E =0			1	μA
I _{EBO}	Emitter cut off current	V _{EB} =2V, I _C =0			1	μA
h _{FE} *	DC forward current gain	V _{CE} =4V, I _C =100mA	90		500	—
V _{CE(sat)}	C to E saturation voltage	I _C =200mA, I _B =10mA		0.15	0.5	V
f _T	Gain band width product	V _{CE} =6V, I _E =-10mA		150		MHz

* : It shows h_{FE} classification in right table.

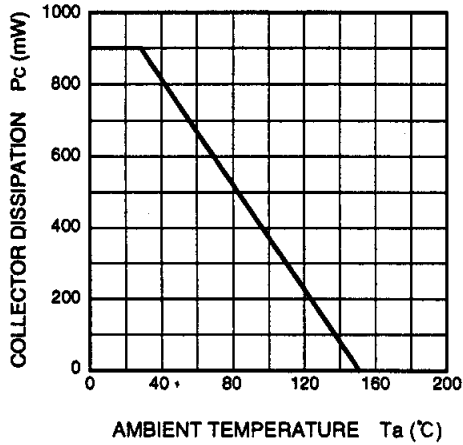
Item	D	E	F
h _{FE}	90 to 180	150 to 300	250 to 500

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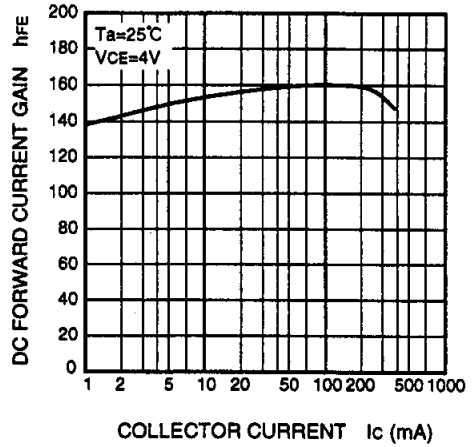
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TYPICAL CHARACTERISTICS

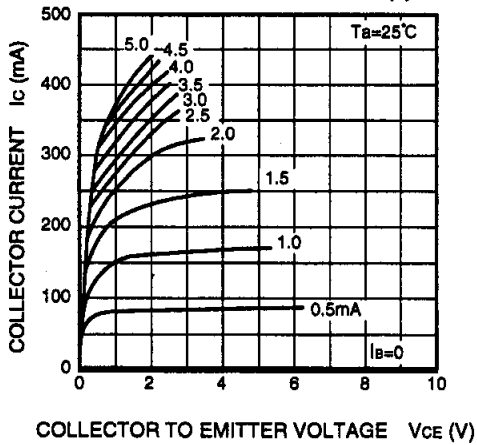
COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE



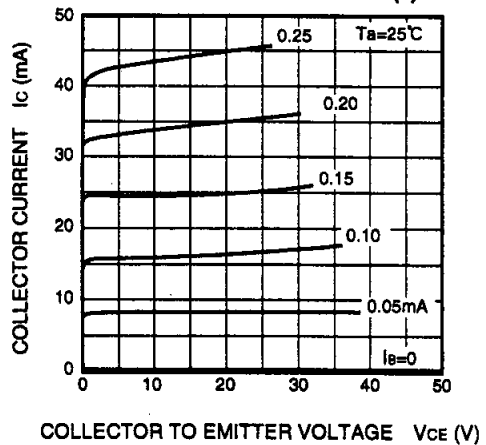
DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



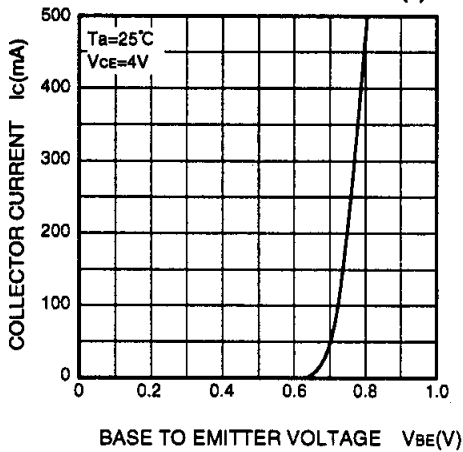
COMMON EMITTER OUTPUT (1)



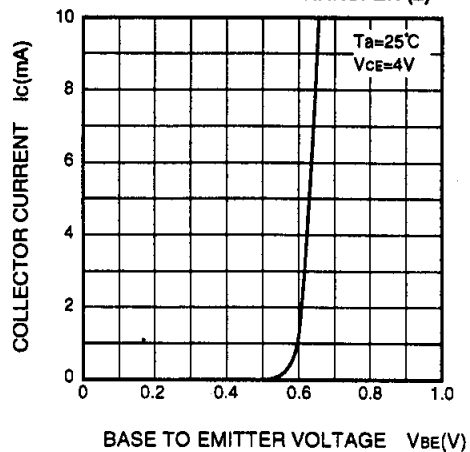
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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