

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

DESCRIPTION

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

Complementary with 2SA1399.

FEATURE

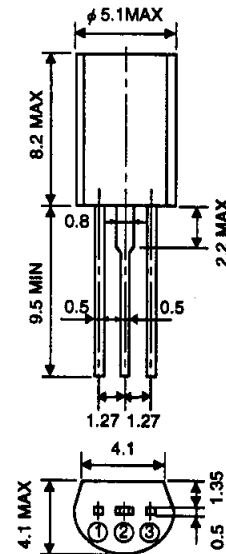
- High collector current $I_{CM}=600\text{mA}$
- High gain band width product $f_T=150\text{MHz}$ typ
- High V_{CE0} $V_{CE0}=50\text{V}$
- Excellent linearity of DC forward current gain

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 _{CE0}	Collector to Base voltage	55	V
V _{EB0}	Emitter to Base voltage	4	V
V _{CEO}	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

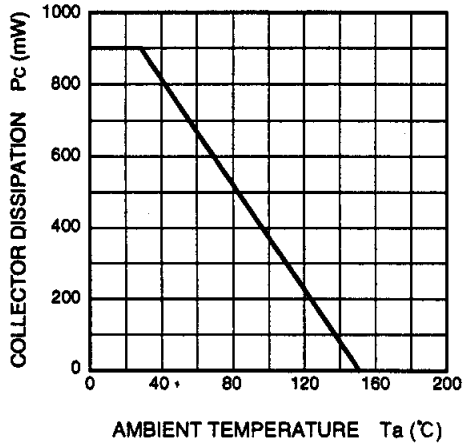
* : It shows h_{FE} classification in right table.

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

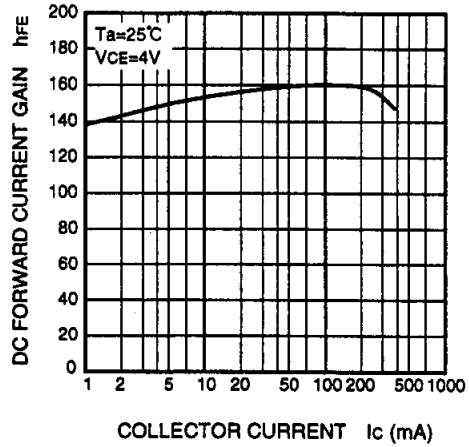
FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON NPN EPITAXIAL TYPE

TYPICAL CHARACTERISTICS

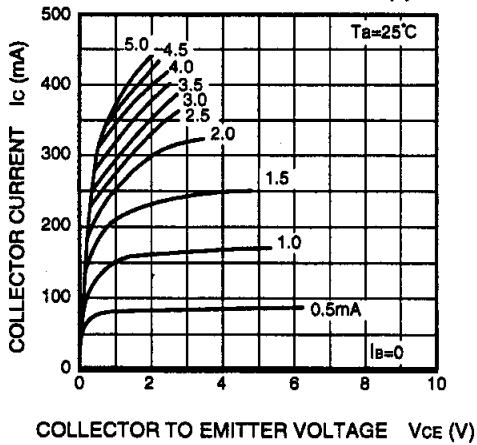
COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE



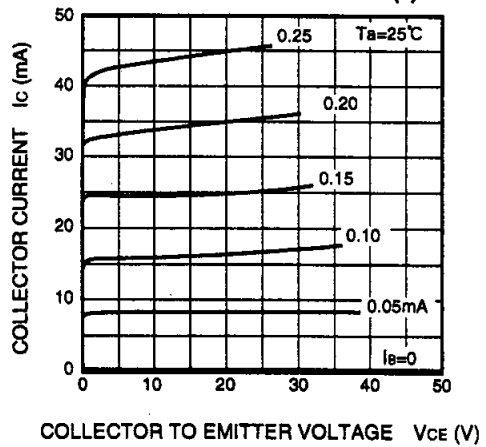
DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



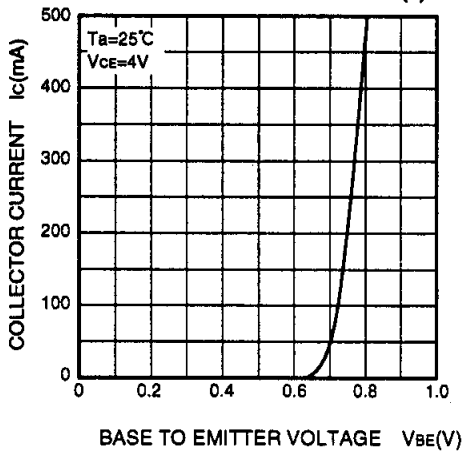
COMMON EMITTER OUTPUT (1)



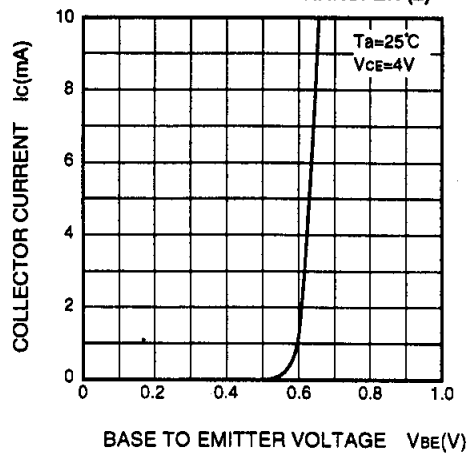
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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