〈SMALL-SIGNAL TRANSISTOR〉

2SC3581

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

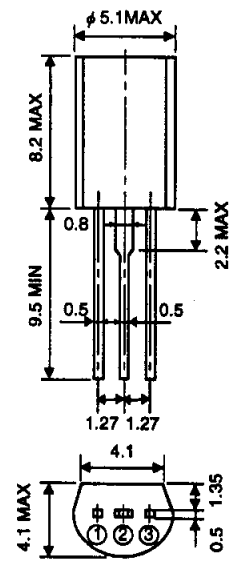
- High collector current I_{CM}=600mA
- High gain band width product f_T=150MHz typ
- High V_{CEO} V_{CEO}=50V
- Excellent linearity of DC forward current gain

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℃)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	55	V
V_{EBO}	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℃)	900	mW
T_j	Junction temperature	+150	℃
T_{stg}	Storage temperature	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CBO}$	C to B break down voltage	I_C=10μA,I_E=0	55			V
$V_{(BR)EBO}$	E to B break down voltage	I_E=10μA,I_C=0	4			V
$V_{(BR)CEO}$	C to E break down voltage	I_C=100μA,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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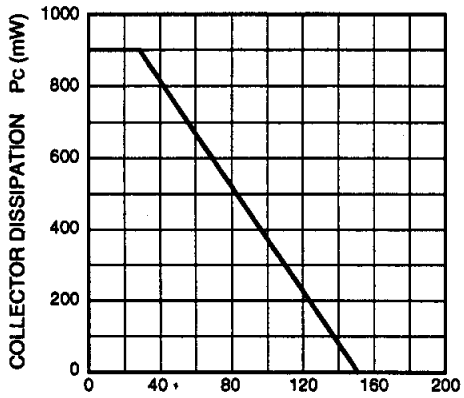
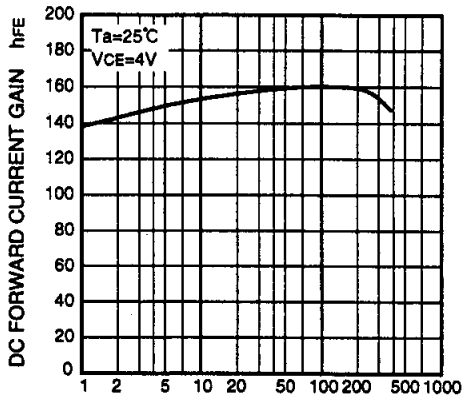
TYPICAL CHARACTERISTICS

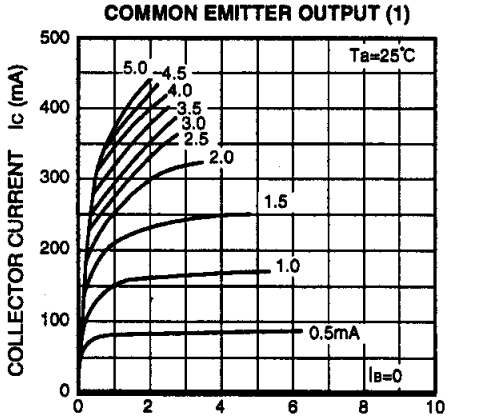
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



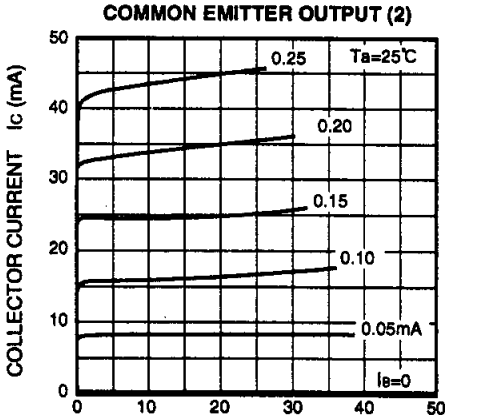
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



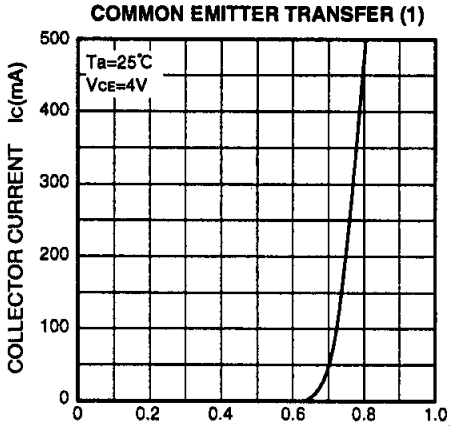
COMMON EMITTER OUTPUT (1)



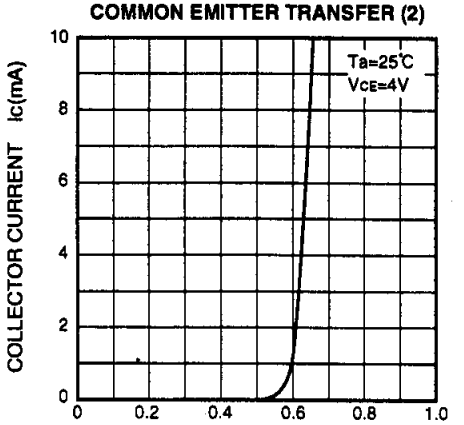
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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