

2SC6046-T150

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON NPN EPITAXIAL TYPE

AEC-Q101 Compliance

DESCRIPTION

2SC6046 is a silicon NPN epitaxial type transistor designed with high collector current, low $V_{CE(sat)}$.

FEATURE

- High collector current

$$I_{C(MAX)} = 600\text{mA}$$

- Low collector to emitter saturation voltage

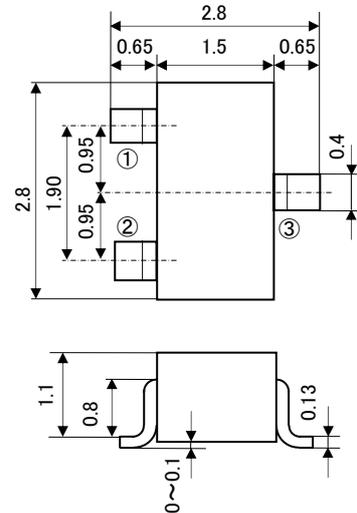
$$V_{CE(sat)} < 0.3V_{max}(I_C=150\text{mA}, I_B=15\text{mA})$$

APPLICATION

For switching application, small type motor drive application.

OUTLINE DRAWING

Unit: mm



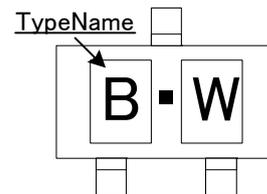
TERMINAL CONNECTOR

- ①: BASE EIAJ: SC-59
②: EMITTER JEDEC: Similar to
③: COLLECTOR TO-236

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Limits	Unit
V_{CEO}	Collector to Emitter voltage	40	V
V_{CBO}	Collector to Base voltage	75	V
V_{EBO}	Emitter to Base voltage	6	V
I_C	Collector current	600	mA
P_C	Collector dissipation	200	mW
T_j	Junction temperature	+150	°C
T_{stg}	Storage temperature	-55~+150	°C

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25°C)

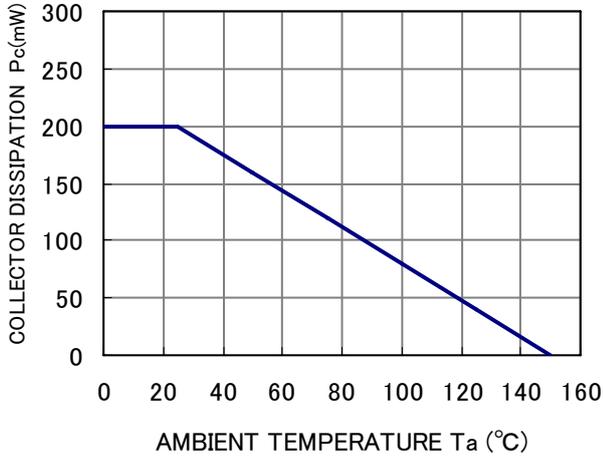
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E breakdown voltage	$I_C=1\text{mA}, I_B=0$	40	—	—	V
$V_{(BR)CBO}$	C to B breakdown voltage	$I_C=10\mu\text{A}, I_E=0$	75	—	—	V
$V_{(BR)EBO}$	E to B breakdown voltage	$I_E=10\mu\text{A}, I_C=0$	6	—	—	V
I_{CBO}	Collector cut off current	$V_{CB}=60\text{V}, I_E=0$	—	—	100	nA
I_{EBO}	Emitter cut off current	$V_{EB}=3\text{V}, I_C=0$	—	—	100	nA
h_{FE}	DC forward current gain	$I_C=150\text{mA}, V_{CE}=10\text{V}$	100	—	300	—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=150\text{mA}, I_B=15\text{mA}$	—	—	0.3	V
$V_{BE(sat)}$	B to E saturation voltage	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	—	1.2	V
f_T	Gain band width product	$I_E=-20\text{mA}, V_{CE}=20\text{V}, f=100\text{MHz}$	—	250	—	MHz
C_{ob}	Collector output capacitance	$V_{CB}=10\text{V}, f=1\text{MHz}$	—	—	8	pF

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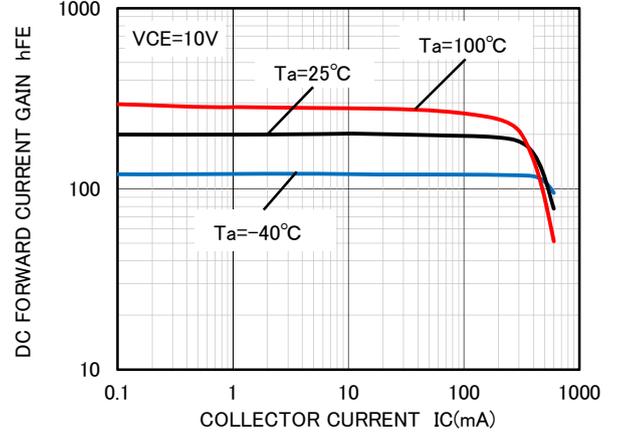
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TYPICAL CHARACTERISTICS

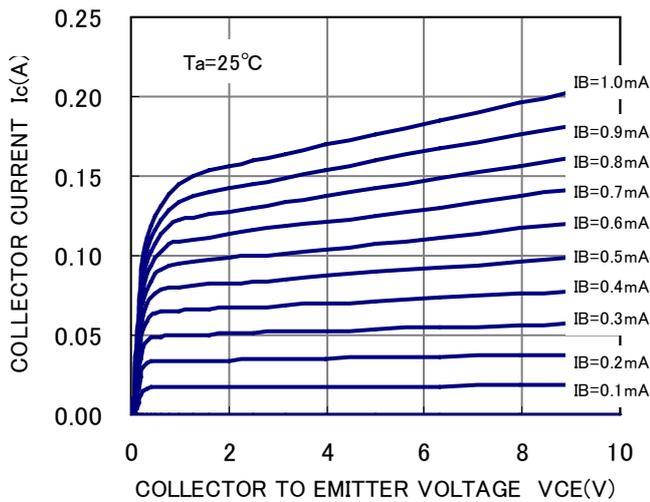
COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE



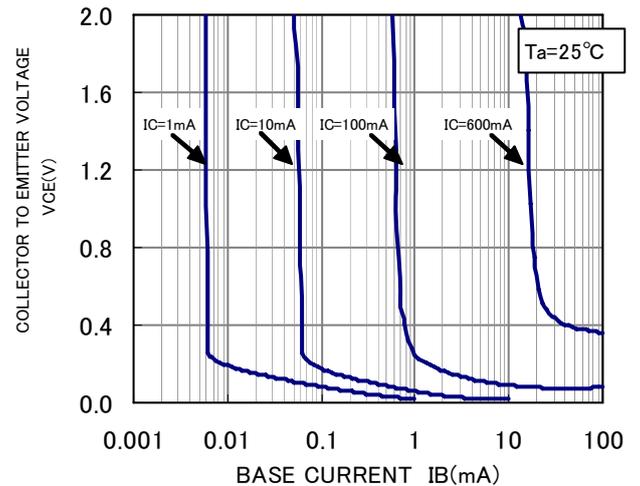
DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



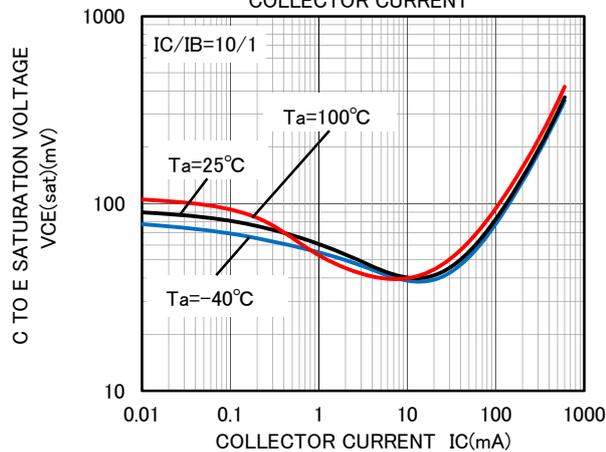
COMMON EMITTER OUTPUT



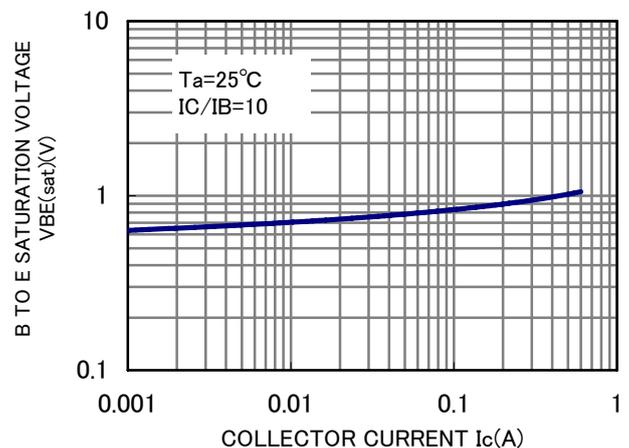
COLLECTOR TO EMITTER VOLTAGE VS.
BASE CURRENT



C TO E SATURATION VOLTAGE VS.
COLLECTOR CURRENT



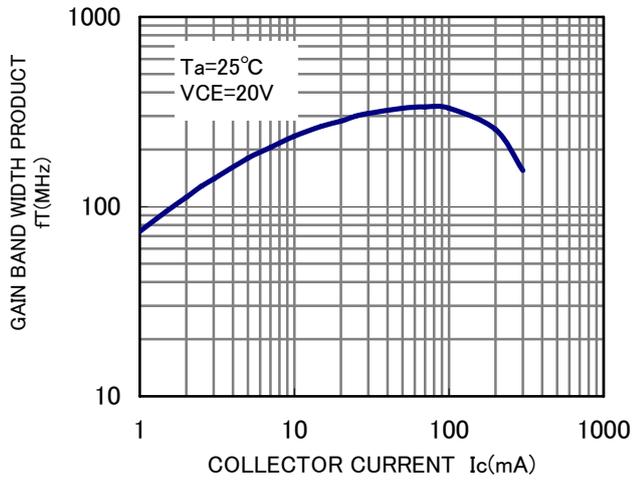
B TO E SATURATION VOLTAGE VS.
COLLECTOR CURRENT



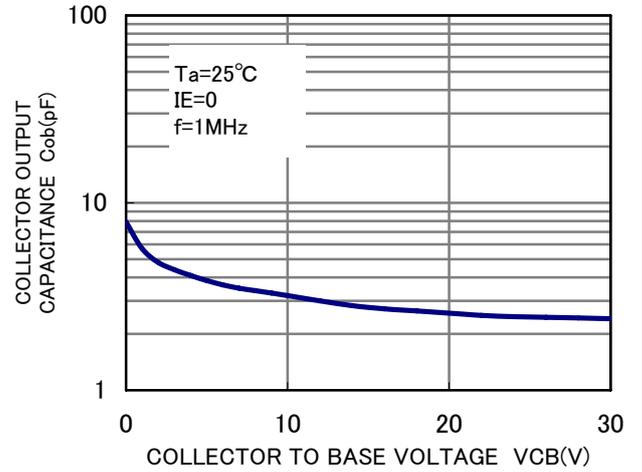
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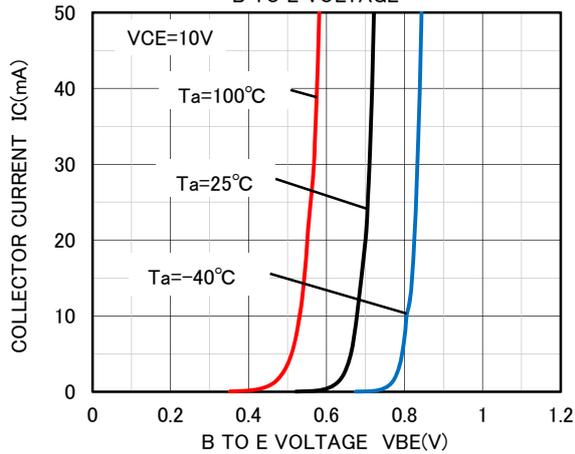
GAIN BAND WIDTH PRODUCT VS.
COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS.
COLLECTOR TO BASE VOLTAGE



COLLECTOR CURRENT VS.
B TO E VOLTAGE





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