

# 2SC6120

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION  
SILICON NPN EPITAXIAL TYPE

## DESCRIPTION

2SC6120 is a silicon NPN epitaxial type transistor designed with high collector current, low  $V_{CE(sat)}$ .

## FEATURE

- High collector current

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

- Low collector to emitter saturation voltage

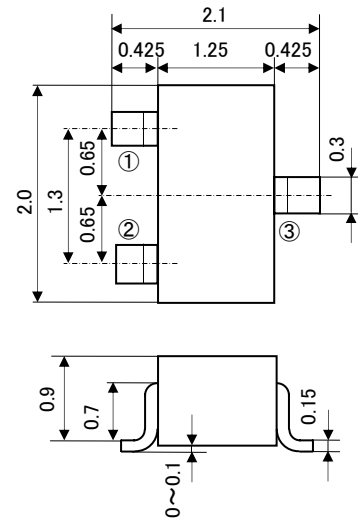
$$V_{CE(sat)} < 0.3V_{max}(I_C=150mA, I_B=15mA)$$

## APPLICATION

For switching application, small type motor drive application.

## OUTLINE DRAWING

Unit: mm



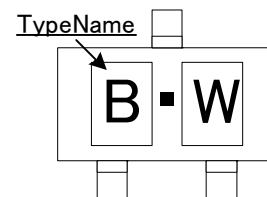
### TERMINAL CONNECTOR

- ①: BASE EIAJ: SC-70  
②: EMITTER JEDEC: —  
③: COLLECTOR

## MAXIMUM RATINGS ( $T_a=25^\circ C$ )

記号	項目	定格値	単位
$V_{CEO}$	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	150	mW
$T_j$	Junction temperature	+150	$^\circ C$
$T_{stg}$	Storage temperature	-55~+150	$^\circ C$

## MARKING

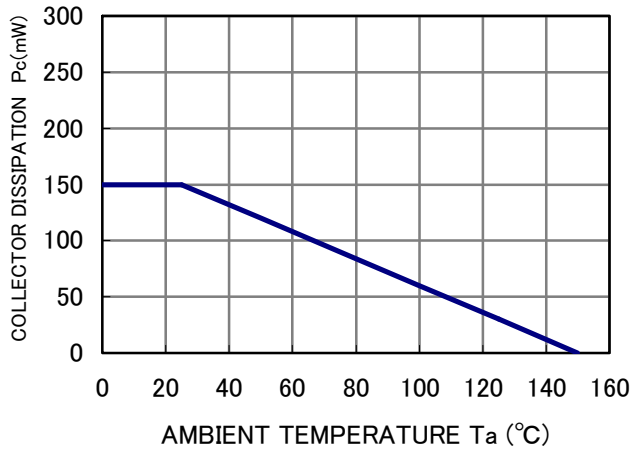


## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

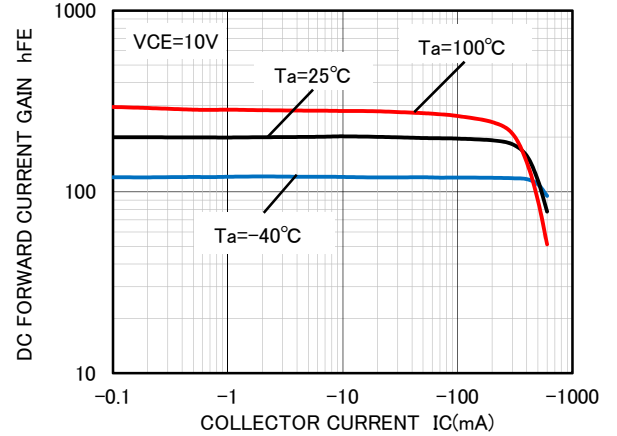
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C=1mA, I_B=0$	40	—	—	V
$V_{(BR)CBO}$	C to B break down voltage	$I_C=10\mu A, I_E=0$	75	—	—	V
$V_{(BR)EBO}$	E to B break down voltage	$I_E=10\mu A, I_C=0$	6	—	—	V
$I_{CBO}$	Collector cut off current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

## TYPICAL CHARACTERISTICS

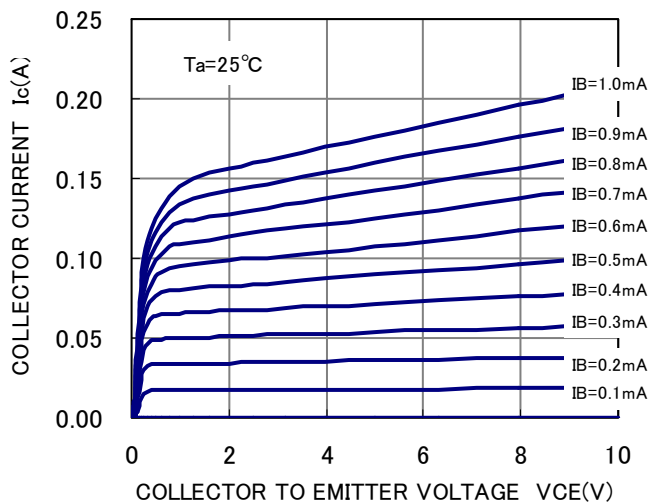
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



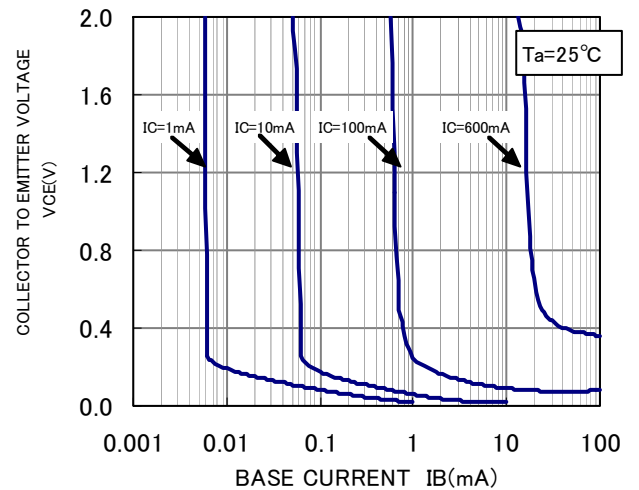
DC FORWARD CURRENT GAIN VS.  
COLLECTOR CURRENT



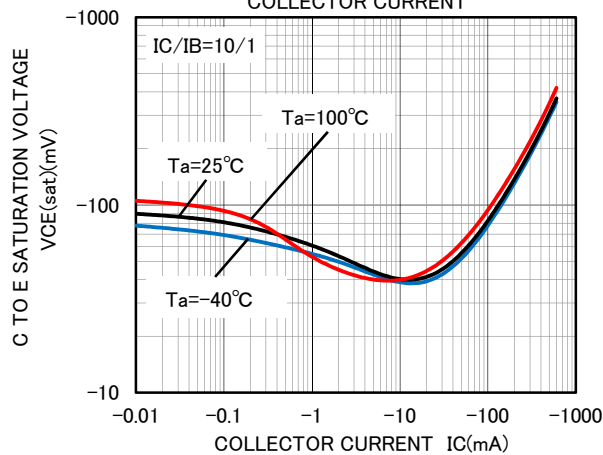
COMMON EMITTER OUTPUT



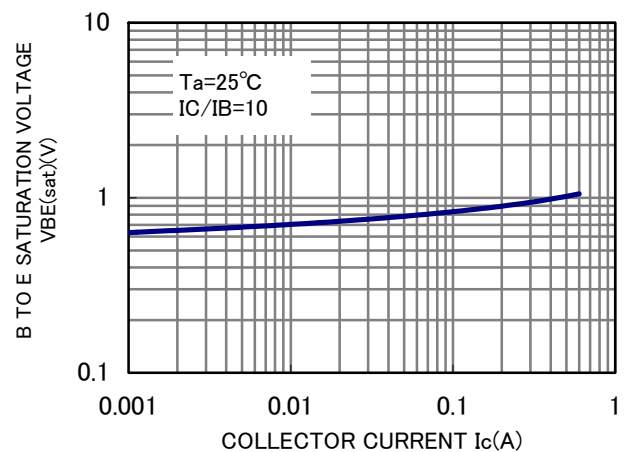
COLLECTOR TO EMITTER VOLTAGE VS.  
BASE CURRENT



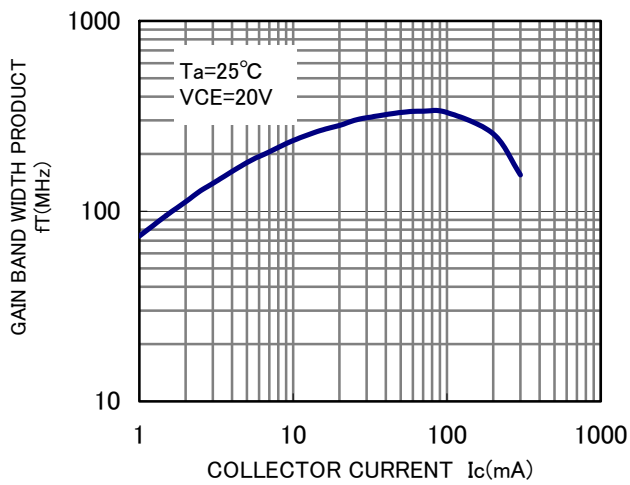
C TO E SATURATION VOLTAGE VS.  
COLLECTOR CURRENT



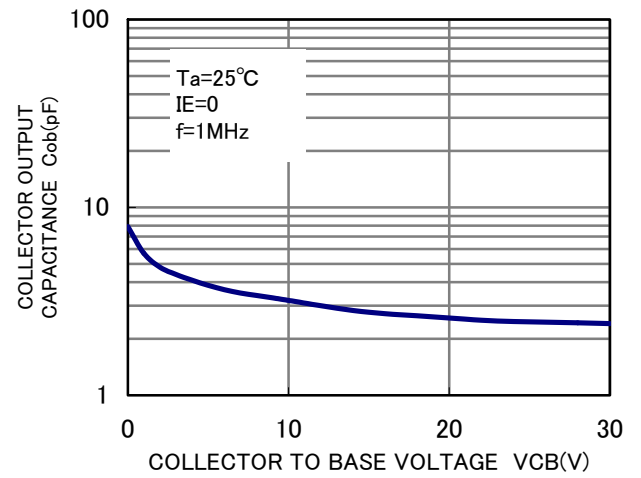
B TO E SATURATION VOLTAGE VS.  
COLLECTOR CURRENT



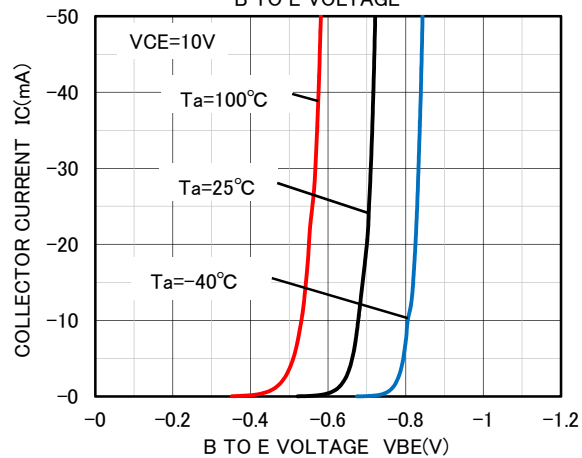
GAIN BAND WIDTH PRODUCT VS.  
COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS.  
COLLECTOR TO BASE VOLTAGE



COLLECTOR CURRENT VS.  
B TO E VOLTAGE





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