

# High-voltage Amplifier Transistor (120V, 50mA)

2SC4102 / 2SC3906K

## ●Features

- 1) High breakdown voltage. ( $V_{CE0} = 120V$ )
- 2) Complements the 2SA1579 / 2SA1514K

## ●Absolute maximum ratings ( $T_a=25^\circ C$ )

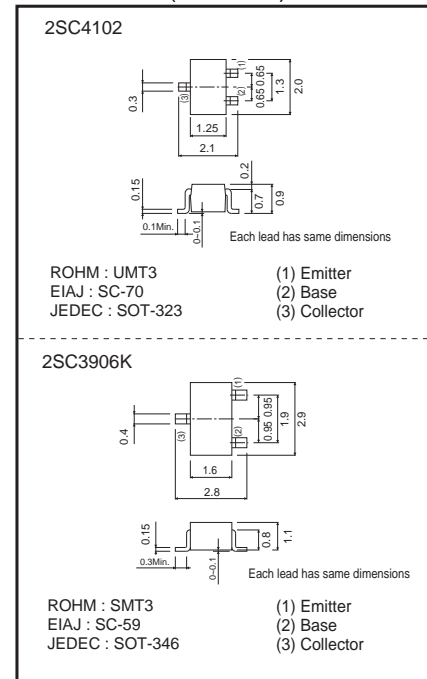
Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	120	V
Collector-emitter voltage	$V_{CEO}$	120	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C$	0.2	W
Junction temperature	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

## ●Packaging specifications and $h_{FE}$

Type	2SC4102	2SC3906K
Package	UMT3	SMT3
$h_{FE}$	RS	RS
Marking	T*	T*
Code	T106	T146
Basic ordering unit (pieces)	3000	3000

\*Denotes  $h_{FE}$

## ●Dimensions (Unit : mm)



## ●Electrical characteristics ( $T_a=25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$V_{CBO}$	120	-	-	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$V_{CEO}$	120	-	-	V	$I_C=1mA$
Emitter-base breakdown voltage	$V_{EBO}$	5	-	-	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	0.5	$\mu A$	$V_{CB}=100V$
Emitter cutoff current	$I_{EBO}$	-	-	0.5	$\mu A$	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.5	V	$I_C/I_B=10mA/1mA$
DC current transfer ratio	$h_{FE}$	180	-	560	-	$V_{CE}=6V, I_C=2mA$
Transition frequency	$f_T$	-	140	-	MHz	$V_{CE}=12V, I_E=-2mA, f=100MHz$
Output capacitance	$C_{ob}$	-	2.5	-	pF	$V_{CB}=12V, I_E=0A, f=1MHz$

●Electrical characteristics curves

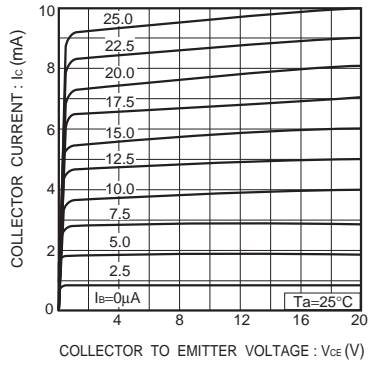


Fig.1 Ground emitter output characteristics

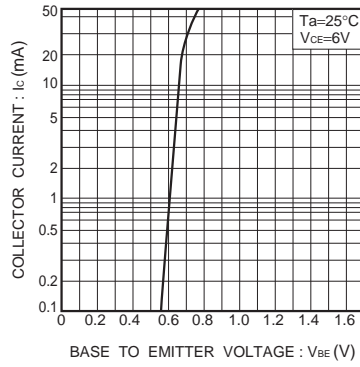


Fig.2 Ground emitter propagation characteristics

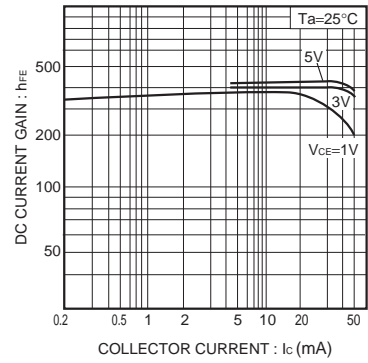


Fig.3 DC current gain vs. collector current

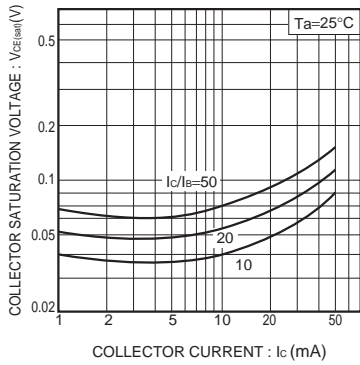


Fig.4 Collector-emitter saturation voltage vs. collector current ( I )

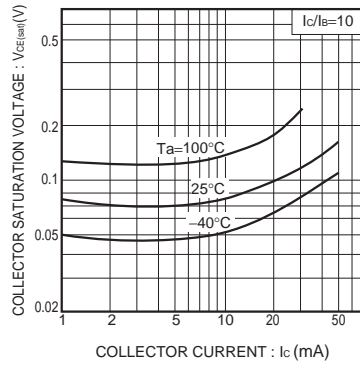


Fig.5 Collector-emitter saturation voltage vs. collector current ( II )

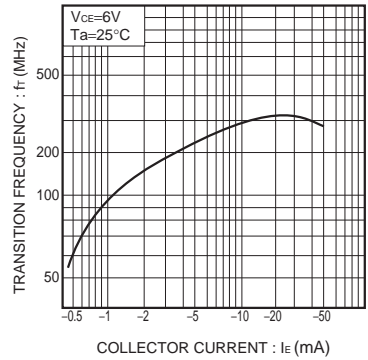


Fig.6 Gain bandwidth product vs. emitter current

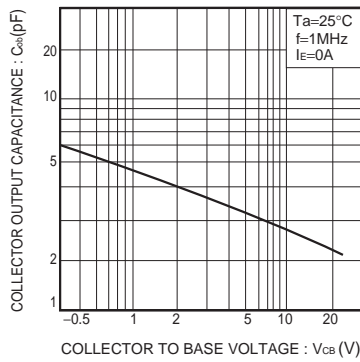


Fig.7 Collector output capacitance vs. collector-base voltage

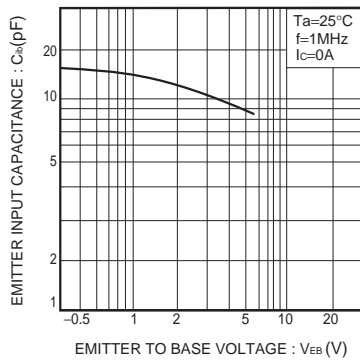


Fig.8 Emitter input capacitance vs. emitter-base voltage

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