

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

2SC4102 / 2SC3906K

●Features

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

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

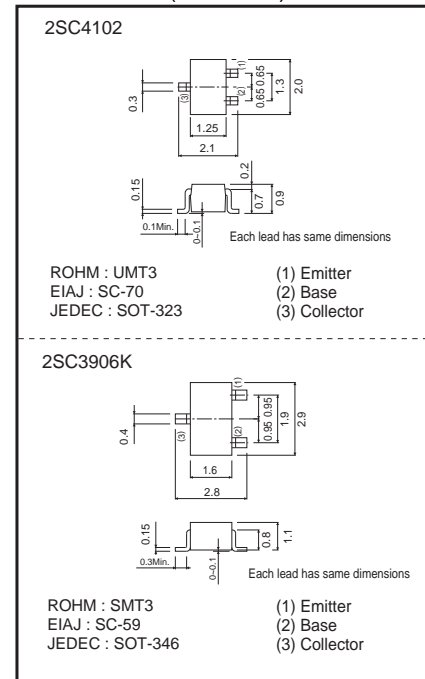
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	120	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_c	50	mA
Collector power dissipation	P_c	0.2	W
Junction temperature	T_j	150	$^{\circ}C$
Storage temperature	T_{stg}	-55 to +150	$^{\circ}C$

●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	μA	$V_{CB}=100V$
Emitter cutoff current	I_{EBO}	-	-	0.5	μA	$V_{EB}=4V$
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

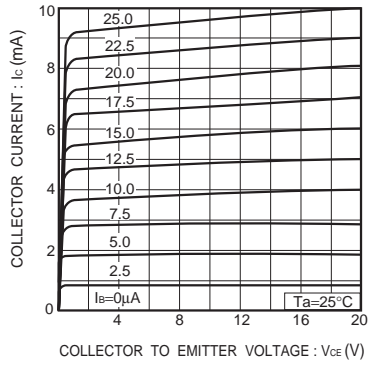


Fig.1 Ground emitter output characteristics

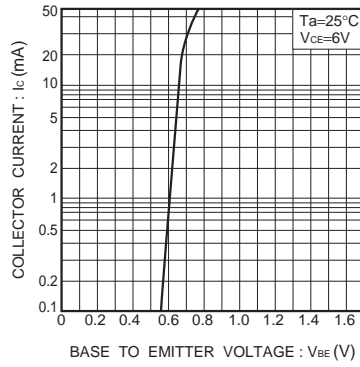


Fig.2 Ground emitter propagation characteristics

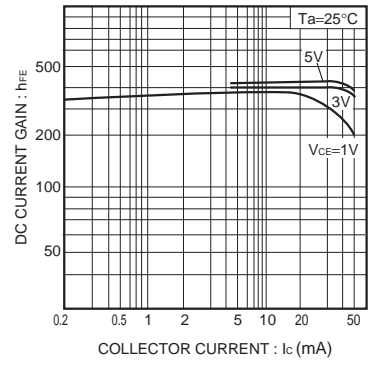


Fig.3 DC current gain vs. collector current

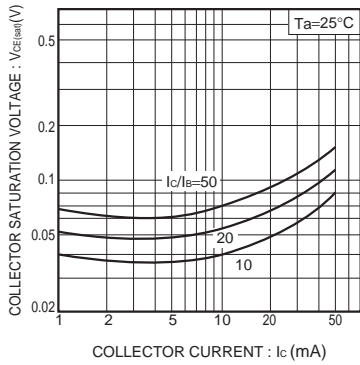


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

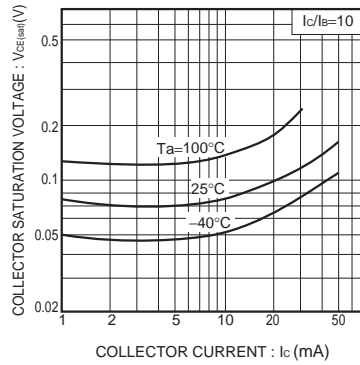


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

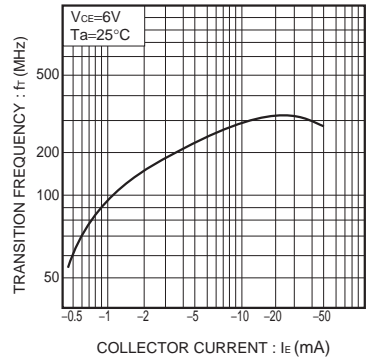


Fig.6 Gain bandwidth product vs. emitter current

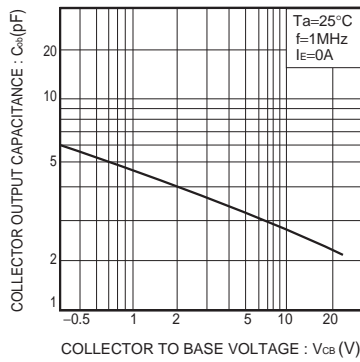


Fig.7 Collector output capacitance vs. collector-base voltage

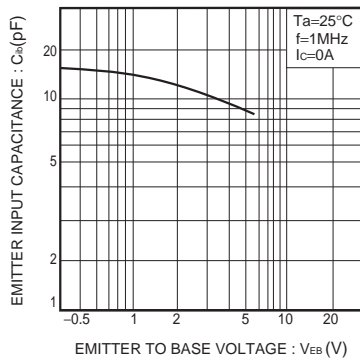


Fig.8 Emitter input capacitance vs. emitter-base voltage

Notes

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