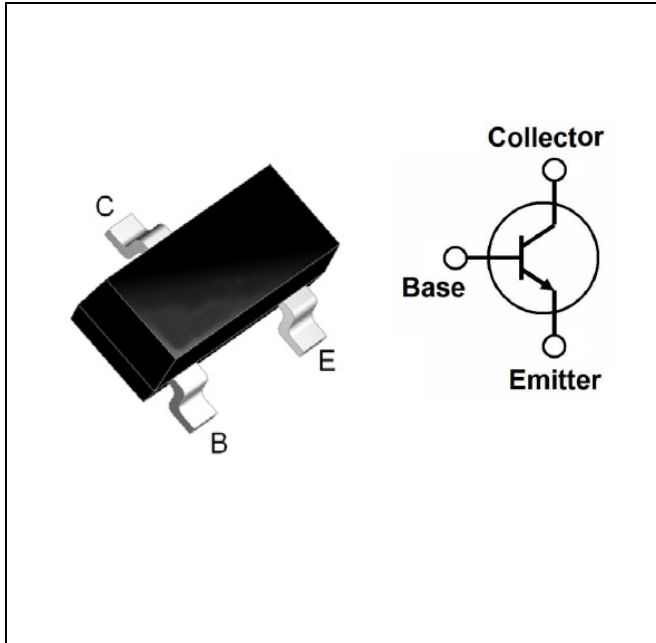


GENERAL PURPOSE TRANSISTORS NPN Silicon



FEATURES

- Complementary to 2SA1579
- High Voltage

MECHANICAL DATA

- Available in SOT-323 Package
- Solderability : MIL-STD-202, Method 208
- Full RoHS Compliance

ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
2SC4102□-△-3T3R	SOT-323	Tape Reel	See Classification Of h_{FE}

Notes:

1. □: none is for Lead Free package;
"G" is for Halogen Free package.
2. △: Rank Of h_{FE} ; See Classification Of h_{FE}

THERMAL DATA

PARAMETER	SYMBOL	VALUES	UNIT
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	625	°C/W

Notes:

3. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. The value of $R_{\theta JA}$ is measured with device mounted on 1 in² FR-4 board with 2 oz copper.

ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ\text{C}$, unless otherwise specified. (Note 1)

PARAMETER	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CEO}	120	V
Collector-Base Voltage	V_{CBO}	120	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current (Continuous)	I_C	50	mA
Collector dissipation	P_C	200	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 ~ +150	$^\circ\text{C}$

Note:

- These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

ELECTRICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$, unless otherwise noted.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	120			V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 50\mu\text{A}, I_E = 0$	120			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5			V
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			500	nA
Collector Cut-off Current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$			500	nA
ON CHARACTERISTICS						
Dc Current Gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 2\text{mA}$	180		560	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.5	V
SMALL-SIGNAL CHARACTERISTICS						
Collector Capacitance	C_{ob}	$V_{CB} = 12\text{V}, I_E = 0, f = 1\text{MHz}$		2.5		pF
Transition Frequency	f_T	$V_{CE} = 12\text{V}, I_C = 2\text{mA}, f = 100\text{MHz}$		140		MHz

CLASSIFICATION OF h_{FE}

RANK	R	S
h_{FE} RANGE	180~390	270~560
MARKING	TR	TS

ELECTRICAL CHARACTERISTICS CURVES

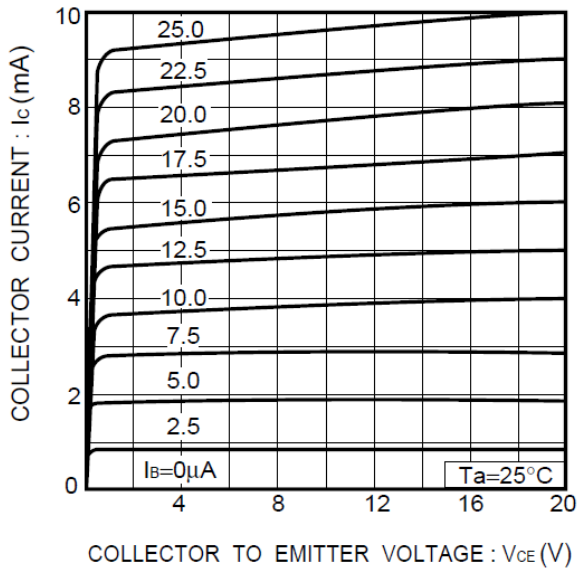


Fig.1 Ground emitter output characteristics

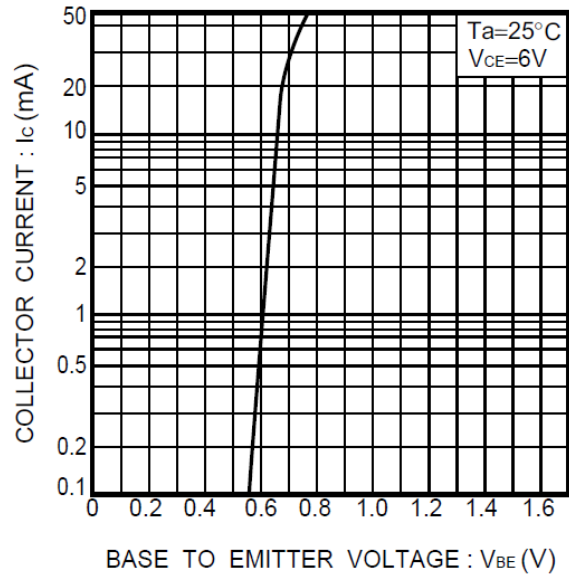


Fig.2 Ground emitter propagation characteristics

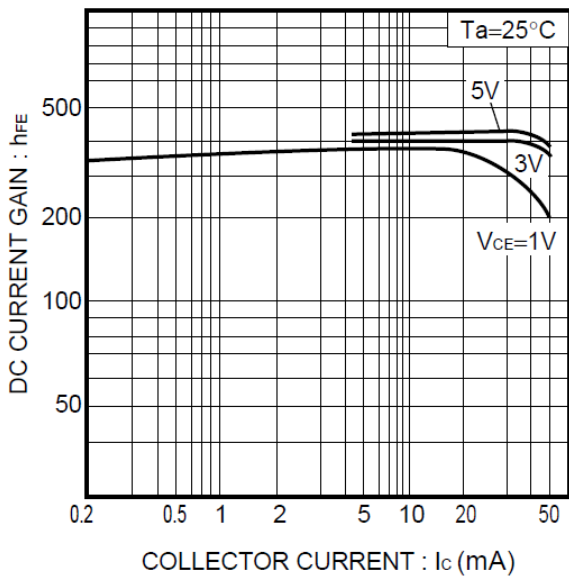


Fig.3 DC current gain vs. collector current

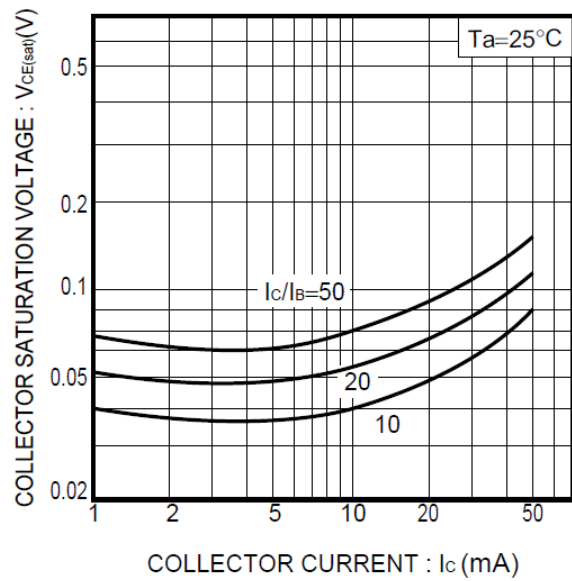


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

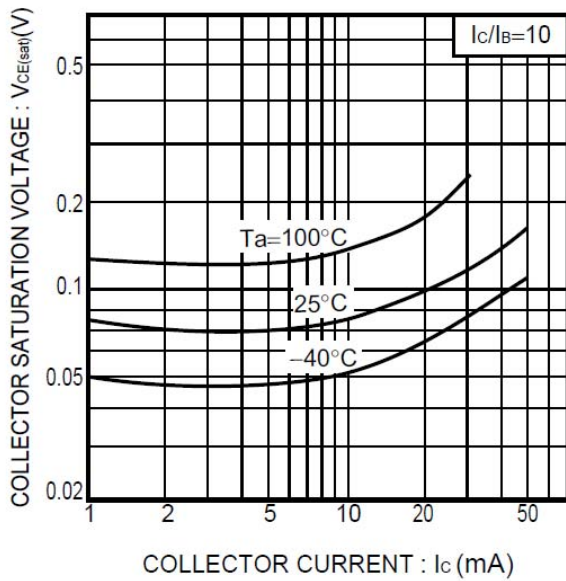


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

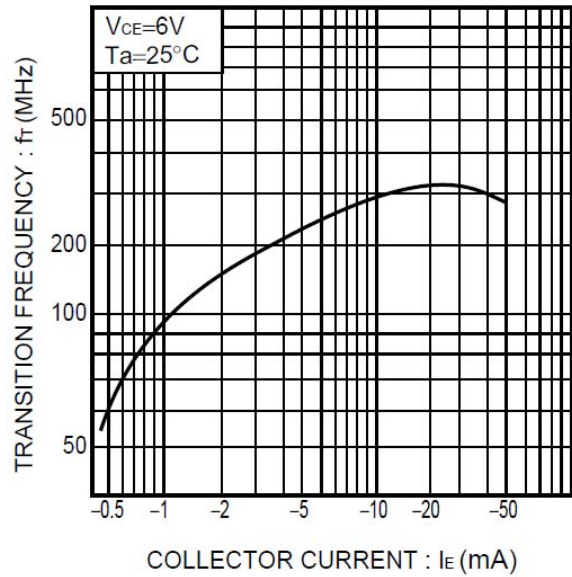


Fig.6 Gain bandwidth product vs. emitter current

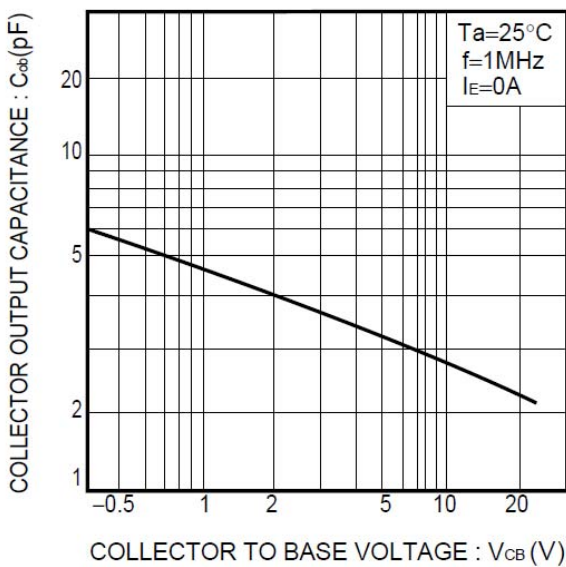


Fig.7 Collector output capacitance vs. collector-base voltage

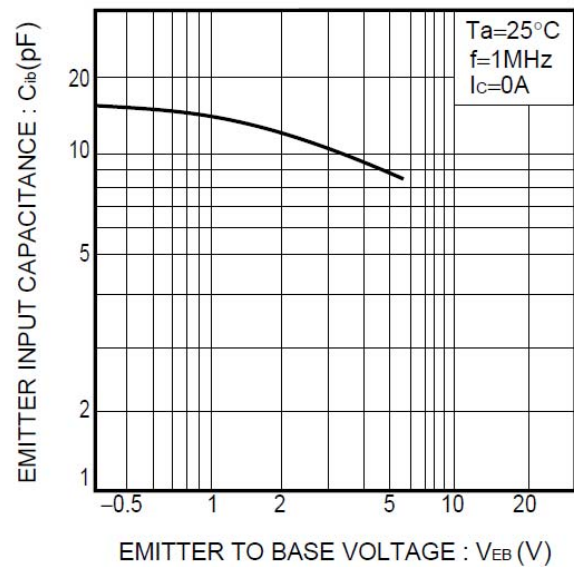


Fig.8 Emitter input capacitance vs. emitter-base voltage

PHYSICAL DIMENSION

Unit : Inch (Millimeter)

