CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

NPN/PNP Silicon AF Transistor Array

VOLTAGE 80 Volts   CURRENT 0.5 Ampere

CHT06UPNPT

Lead free devices

APPLICATION

* AF input stages and driver applicationon equipment.
* Other switching applications.

FEATURE

* Small surface mounting type. (SC-74/SOT-457)
* High current gain.
* Suitable for high packing density.
* Low colloector-emitter saturation.
* High saturation current capability.
* Two internal isolated NPN/PNP transistor in one package.

CONSTRUCTION

* NPN/PNP transistor in one package.

CIRCUIT

SC-74/SOT-457

(1) (6)
1.7~2.1
0.95
0.95
2.7~3.1
0.25~0.5
(3) (4)
1.4~1.8

0.08~0.2
0.935~1.3
0.3~0.6
0~0.15
2.6~3.0

Dimensions in millimeters   **SC-74/SOT-457**
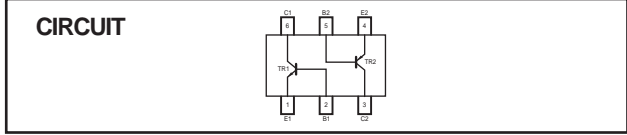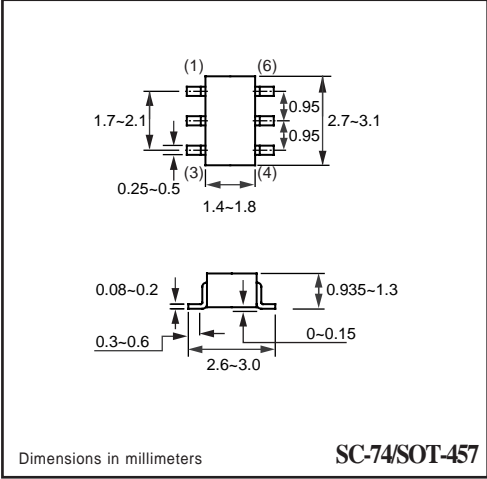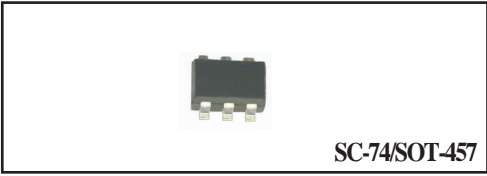
LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	80	V
V_{CEO}	collector-emitter voltage	open base	–	80	V
V_{EBO}	emitter-base voltage	open collector	–	4	V
I_C	collector current (DC)		–	500	mA
I_{CM}	peak collector current		–	1000	mA
I_{BM}	peak base current		–	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\ °C$; note 1	–	330	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

2002-7

RATING CHARACTERISTIC CURVES (CHT06UPNPT)

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\,j\text{-}s}$	thermal resistance from junction to soldering point	note 1	105	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise speciÞed.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = 80$ V	–	100	nA
		$I_C = 0$; $V_{CB} = 80$ V; $T_A = 150$ °C	–	20	uA
I_{CEO}	emitter cut-off current	$I_C = 0$; $V_{CE} = 60$ V	–	100	nA
h_{FE}	DC current gain	$I_C = 10$ mA; $V_{CE} = 1.0$V; note 1	100	–	
		$I_C = 100$ mA; $V_{CE} = 1.0$V	100	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 100$ mA; $I_B = 10$ mA	–	250	mV
$V_{BE(ON)}$	base-emitter saturation voltage	$I_C = 100$ mA; $V_{CE} = 1$ V	–	1.2	V
C_c	collector capacitance	$I_E = i_e = 0$; $V_{CB} = 10$V ; $f = 1$ MHz	–	12	pF
C_e	emitter capacitance	$I_C = i_c = 0$; $V_{BE} = 500$ mV; $f = 1$ MHz	–	120	pF
f_T	transition frequency	$I_C = 20$ mA; $V_{CE} = 5$ V ; $f = 100$ MHz	100	–	MHz
F	noise figure	$I_C = 100$ µA; $V_{CE} = 5$ V; $R_S = 1$ kΩ; $f = 1.0$ kHz	–	4	dB

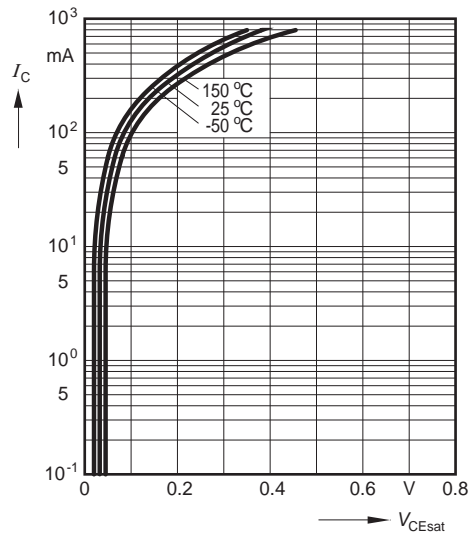**Note**

1. Pulse test: $t_p \le 300$ µs; $\delta \le 0.02$.

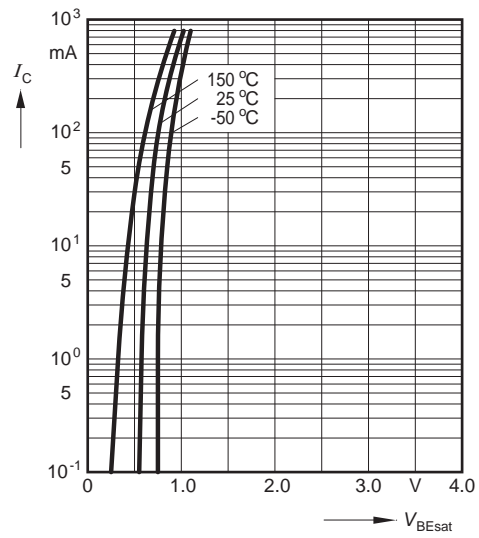# RATING CHARACTERISTIC CURVES (CHT06UPNPT)

Collector-emitter saturation voltage

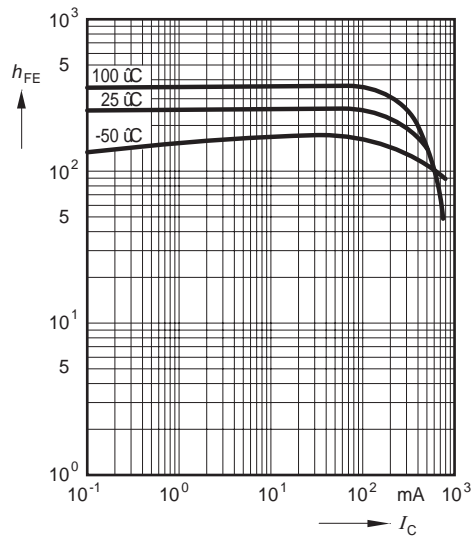$I_C = f(V_{CEsat})$, $h_{FE} = 10$

Base-emitter saturation voltage

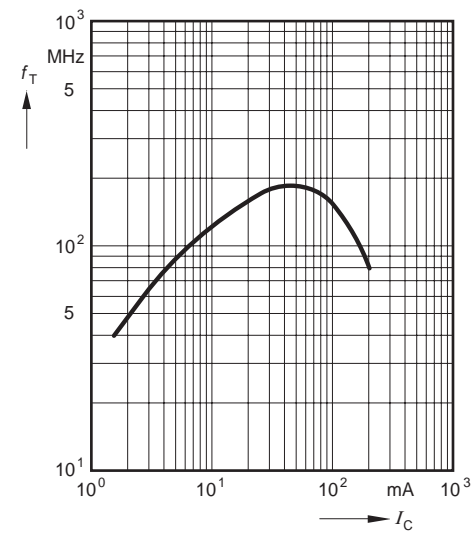$I_C = f(V_{BEsat})$, $h_{FE} = 10$

DC current gain $h_{FE} = f(I_C)$
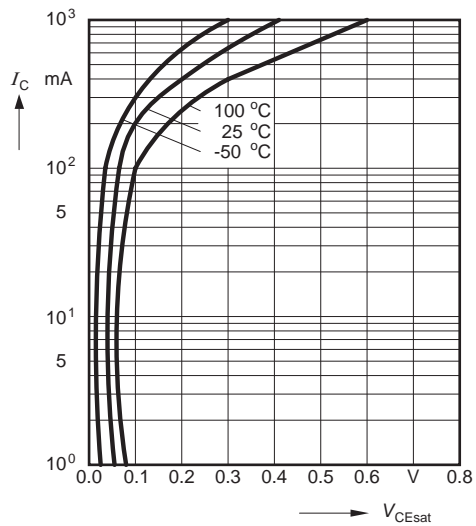
$V_{CE} = 5V$

Transition frequency $f_T = f(I_C)$

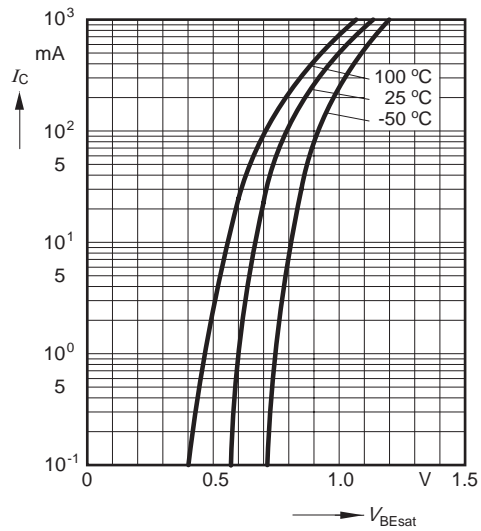$V_{CE} = 5V$

RATING CHARACTERISTIC CURVES (CHT06UPNPT)

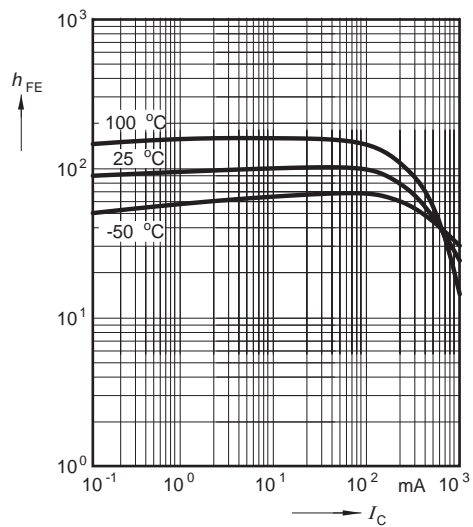**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat})$, $h_{FE} = 10$

Base-emitter saturation voltage

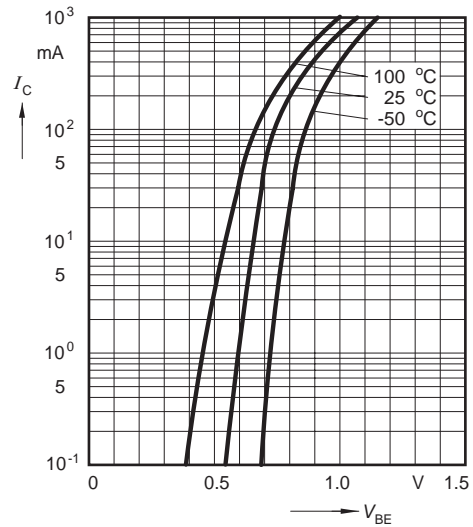$I_C = f(V_{BEsat})$, $h_{FE} = 10$

DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 1V$

Collector current $I_C = f(V_{BE})$

$V_{CE} = 1V$

RATING CHARACTERISTIC CURVES (CHT06UPNPT)

Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$