CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT
NPN General Purpose Transistor
VOLTAGE 45 Volts CURRENT 0.1 Ampere

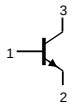
CHT847BTGP

APPLICATION
* AF input stages and driver applicationon equipment.
* Other general purpose applications.

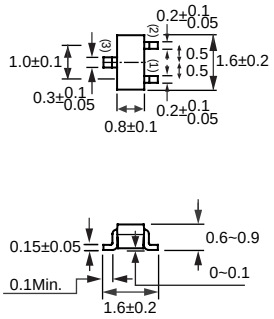
FEATURE
* Surface mount package. (SC-75/SOT-416)
* High current gain.
* Suitable for high packing density.
* Low colloector-emitter saturation.
* High saturation current capability.

MARKING
* HFE (Q):XC
* HFE (R):YC
* HFE (S):ZC

CIRCUIT



SC-75/SOT-416



Dimensions in millimeters

SC-75/SOT-416

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	–	50	V
V_{CEO}	collector-emitter voltage	open base	–	45	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current (DC)		–	0.1	A
P_C	Collector power dissipation		–	0.15	W
		Note2	–	0.2	
T_{stg}	storage temperature		–55	+150	°C
T_j	junction temperature		–	150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.
2. When mounted on a 7X5X0.6mm ceramic board.

2004-10

RATING CHARACTERISTIC (CHT847BTGP)

THERMAL CHARACTERISTICS
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	Typ.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 30 V	–	–	15	nA
		I_C = 0; V_{CB} = 30 V; T_A = 150 °C	–	–	5	uA
BV_{CBO}	collector-base breakdown voltage	I_C =50uA	50	–	–	V
BV_{CEO}	collector-emitter breakdown voltage	I_C =1mA	45	–	–	V
BV_{EBO}	emitter-base breakdown voltage	I_E =50uA	6	–	–	V
h_{FE}	DC current transfer ratio	V_{CE}/I_C =5V/2 mA	110	–	800	
V_{CEsat}	collector-emitter saturation voltage	I_C = 10 mA ; I_B = 0.5 mA	–	–	250	mV
		I_C = 100 mA ; I_B= 5 mA	–	–	600	mV
$V_{BE(on)}$	base-emitter satur ation voltage	I_C = 10 mA;V_{CE}= 5.0 V	0.58	–	0.77	V
Cib	emitter input capacitance	I_C = 0; V_{CB} = 0.5V ; f = 1 MHz	–	8	–	pF
Cob	collector output capacitance	I_E = 0; V_{CB} = -10V ; f = 1 MHz	–	3	–	pF
f_T	transition frequency	I_E = -20 mA; V_{CE} = 5 V ; f = 100 MHz	–	200	–	MHz

Note

1. Pulse test: $t_p \leq 300\ \mu s$; $\delta \leq 0.02$.
2. hFE: Classification Q: 110 to 220, R: 200 to 450, S: 420 to 800

RATING CHARACTERISTIC CURVES (CHT847BTGP)

fig1.Griunded emitter output characteristics

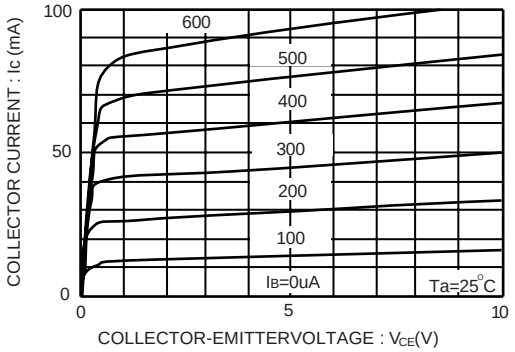
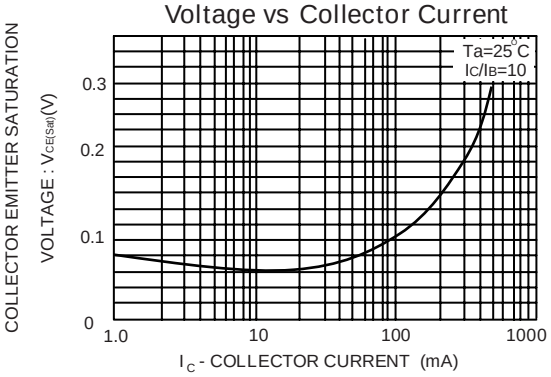


fig2.Collector-Emitter Saturation Voltage vs Collector Current



RATING CHARACTERISTIC CURVES (CHT847BTGP)

fig3.DC current gain VS. collector current (1)

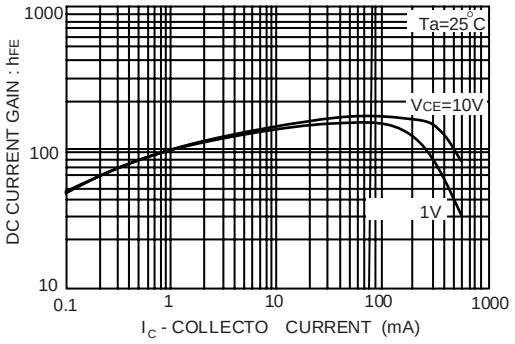


fig4.DC current gain VS. collector current (2)

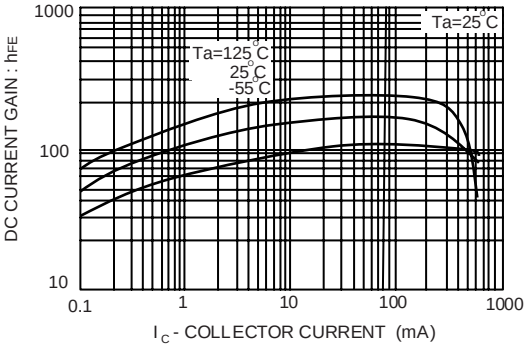


fig5.AC current gain VS. collector current

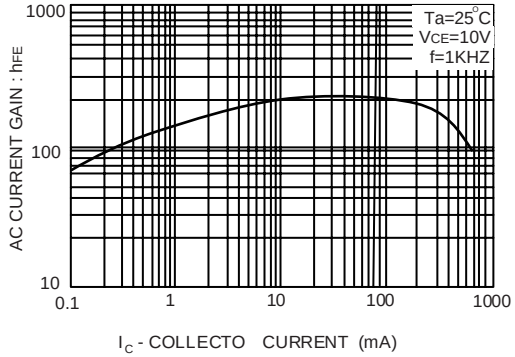


fig6.Base-emitter saturation voltage VS. collector current

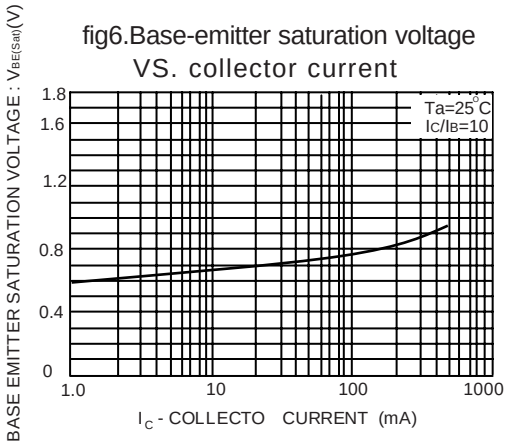


fig7.Grounded emitter propagation characteristics

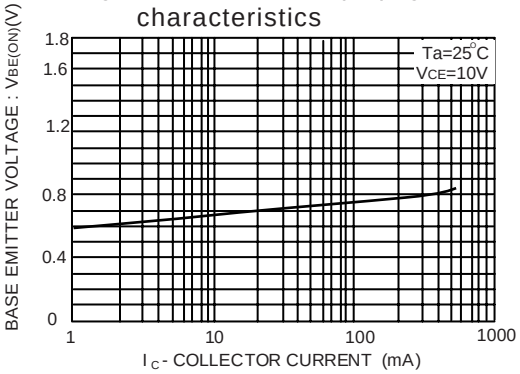
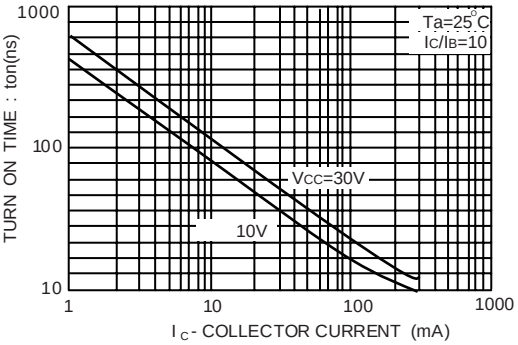


fig8.Turn-on time VS. collector current



RATING CHARACTERISTIC CURVES (CHT847BTGP)

fig9.Rise time VS. collector current

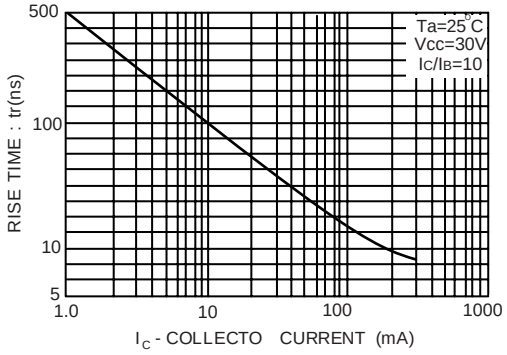


fig10.Fall time VS. collector current

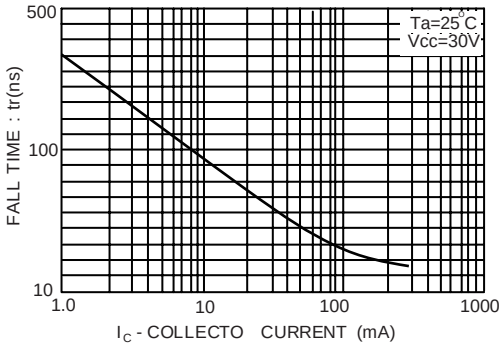


fig11.Input / output capacitance VS. voltage