



**CHENMKO ENTERPRISE CO.,LTD**

*Halogens free devices*

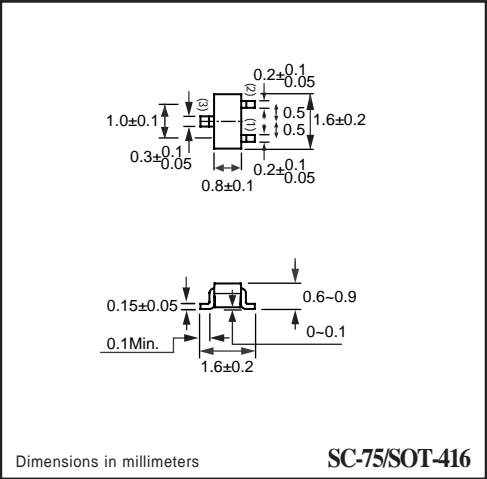
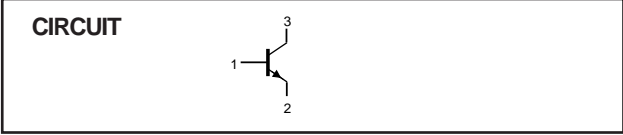
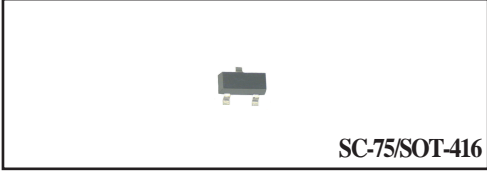
**SURFACE MOUNT**  
**NPN General Purpose Transistor**  
 VOLTAGE 45 Volts CURRENT 0.1 Ampere

**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 collector-emitter saturation.  
 \* High saturation current capability.

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



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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	—	50	V
V <sub>CEO</sub>	collector-emitter voltage	open base	—	45	V
V <sub>EBO</sub>	emitter-base voltage	open collector	—	6	V
I <sub>C</sub>	collector current (DC)		—	0.1	A
P <sub>C</sub>	Collector power dissipation		—	0.15	W
		Note2	—	0.2	
T <sub>stg</sub>	storage temperature		-55	+150	°C
T <sub>j</sub>	junction temperature		—	150	°C

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

## RATING CHARACTERISTIC ( CHT847BTGP )

### THERMAL CHARACTERISTICS CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

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

#### Note

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

## RATING CHARACTERISTIC CURVES ( CHT847BTGP )

fig1. Grounded emitter output characteristics

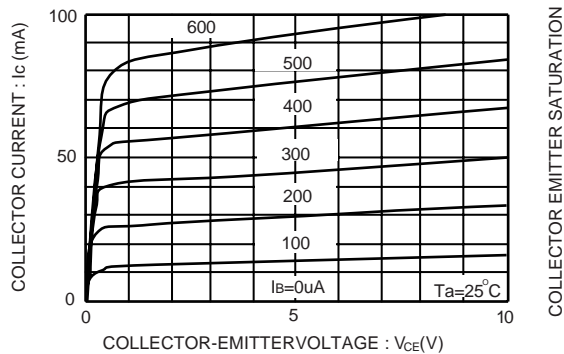
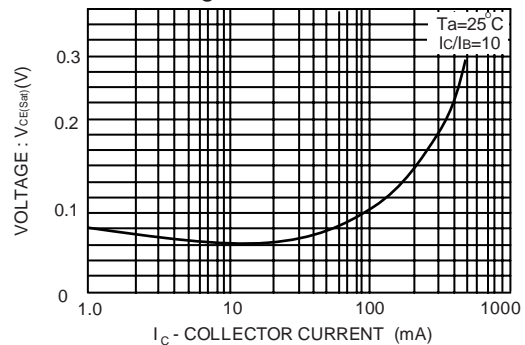


fig2. Collector-Emitter Saturation Voltage vs Collector Current



## RATING CHARACTERISTIC CURVES ( CHT847BTGP )

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

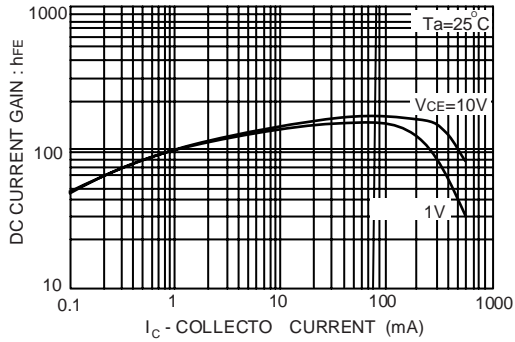


fig4.DC current gain VS. collector current ( 2 )

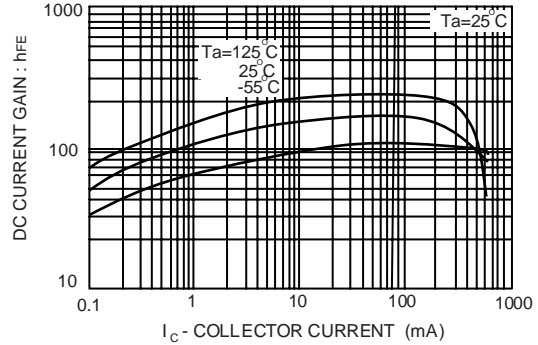


fig5.AC current gain VS. collector current

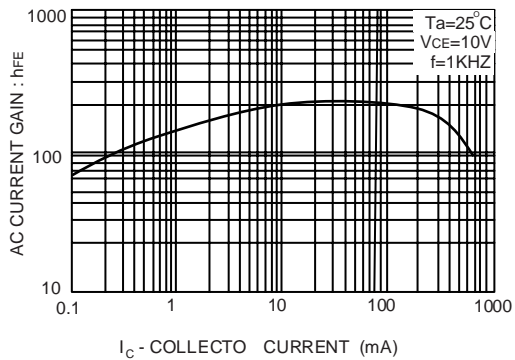


fig6.Base-emitter saturation voltage VS. collector current

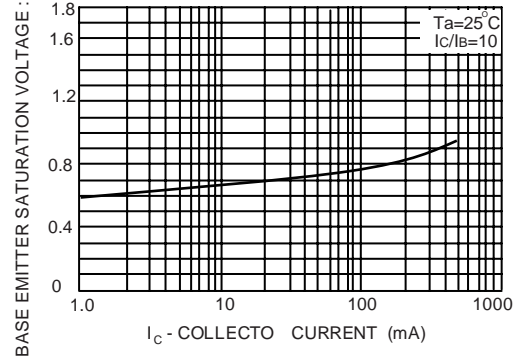


fig7.Grounded emitter propagation characteristics

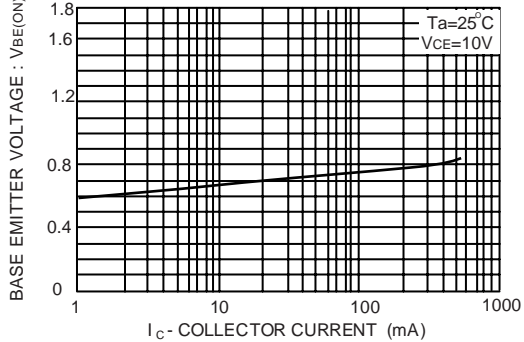
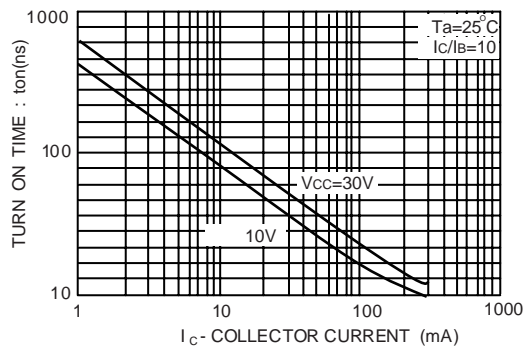


fig8.Turn-on time VS. collector current



## RATING CHARACTERISTIC CURVES ( CHT847BTGP )

fig9. Rise time VS. collector current

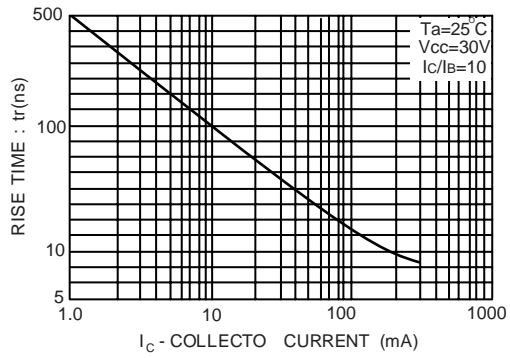


fig10. Fall time VS. collector current

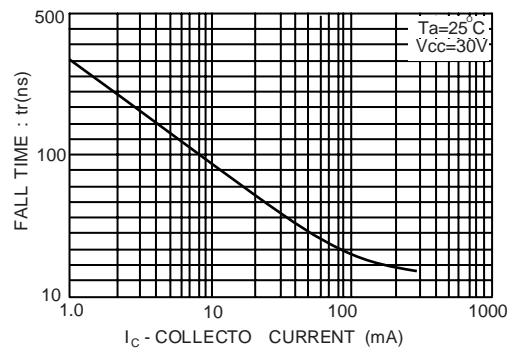


fig11. Input / output capacitance VS. voltage

