



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

NPN General Purpose Transistor

VOLTAGE 45 Volts CURRENT 0.1 Ampere

CH847BGP

Halogens free devices

APPLICATION

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

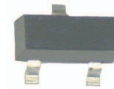
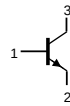
FEATURE

- * Small surface mounting type. (SOT-23)
- * High current gain.
- * Suitable for high packing density.
- * Low collector-emitter saturation.
- * High saturation current capability.

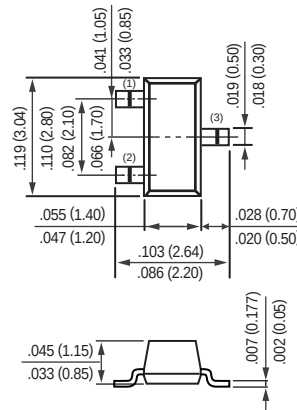
MARKING

- * HFE(Q):NV
- * HFE(R):1F
- * HFE(S):NW

CIRCUIT



SOT-23



Dimensions in millimeters

SOT-23

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		—	0.2	W
		Note2	—	0.35	
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.

RATING CHARACTERISTIC (CH847BGP)

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	μA
BV_{CBO}	collector-base breakdown voltage	$I_C = 50\text{ }\mu\text{A}$	50	–	–	V
BV_{CEO}	collector-emitter breakdown voltage	$I_C = 1\text{ mA}$	45	–	–	V
BV_{EBO}	emitter-base breakdown voltage	$I_E = 50\text{ }\mu\text{A}$	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 (CH847BGP)

fig1. Grounded emitter output characteristics

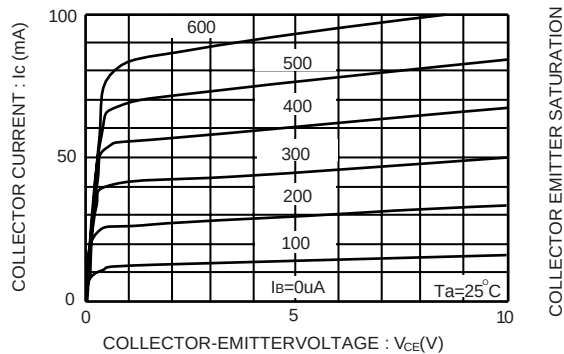
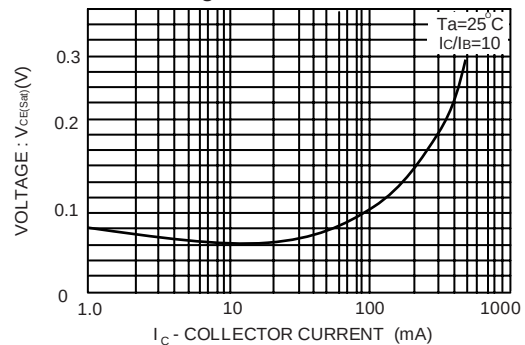


fig2. Collector-Emitter Saturation Voltage vs Collector Current



RATING CHARACTERISTIC CURVES (CH847BGP)

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

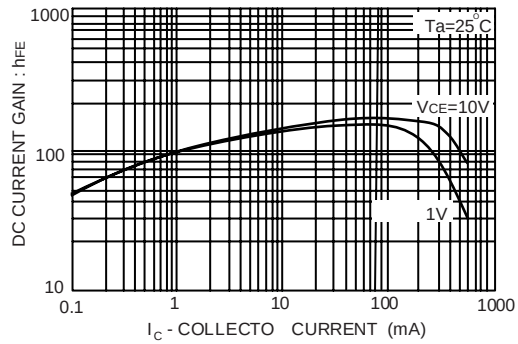


fig4.DC current gain VS. collector current (2)

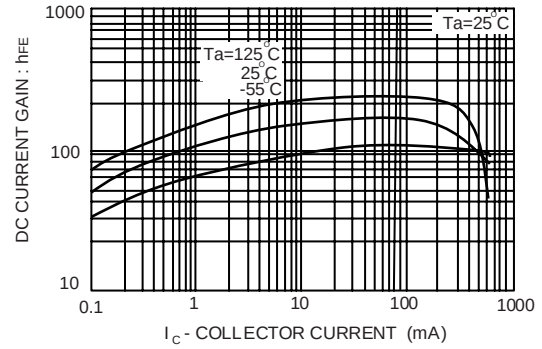


fig5.AC current gain VS. collector current

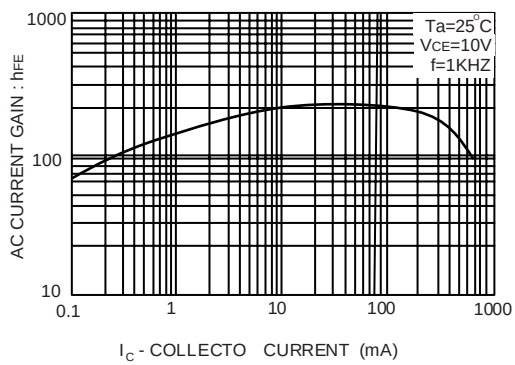


fig6.Base-emitter saturation voltage VS. collector current

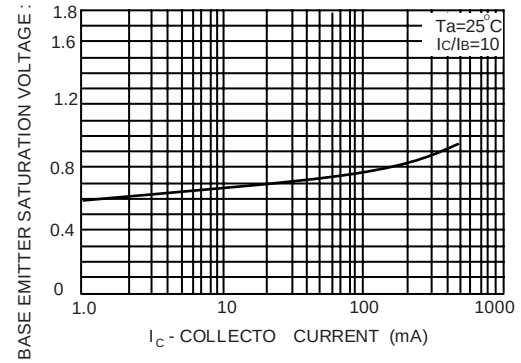


fig7.Grounded emitter propagation characteristics

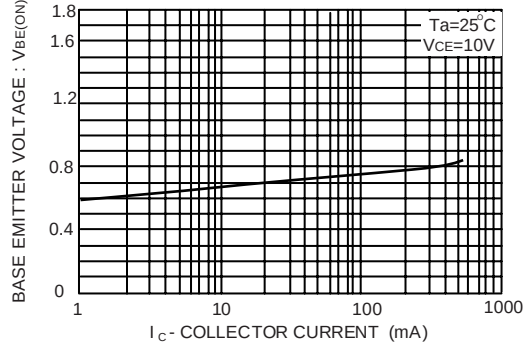
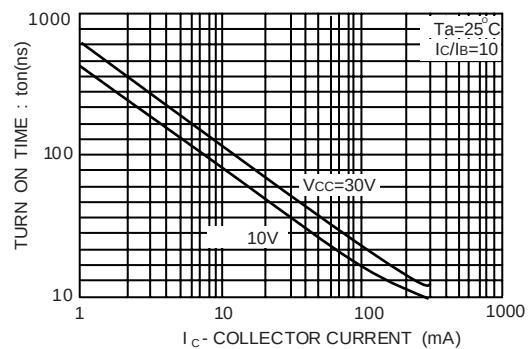


fig8.Turn-on time VS. collector current



RATING CHARACTERISTIC CURVES (CH847BGP)

fig9.Rise time VS. collector current

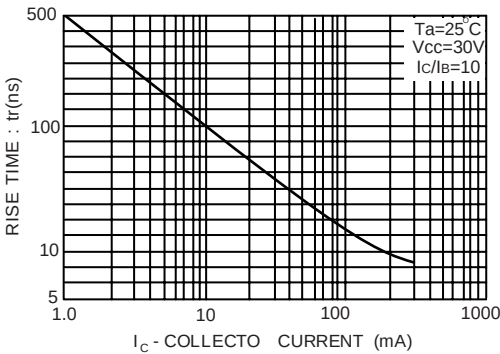


fig10.Fall time VS. collector current

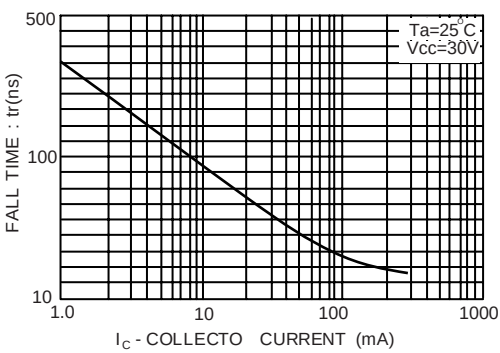


fig11.Input / output capacitance VS. voltage

