CHENMKO ENTERPRISE CO.,LTD

CHT2907N1PT

Lead free devices

SURFACE MOUNT
PNP Switching Transistor

VOLTAGE 60 Volts CURRENT 0.6 Ampere

APPLICATION

* Telephony and proferssional communction equipment.
* Other switching applications.

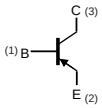
FEATURE

* Small surface mounting type. (FBPT-923)
* High current (Max.=600mA).
* Suitable for high packing density.
* Low voltage (Max.=60V) .
* High saturation current capability.
* Voltage controlled small signal switch.

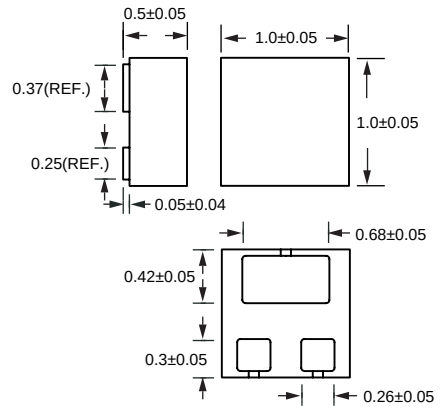
CONSTRUCTION

* PNP Switching Transistor

CIRCUIT



FBPT-923



Dimensions in millimeters

FBPT-923

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	–	-60	V
V_{CEO}	collector-emitter voltage	open base	–	-60	V
V_{EBO}	emitter-base voltage	open collector	–	-5	V
I_C	collector current (DC)		–	-600	mA
I_{CM}	peak collector current		–	-800	mA
I_{BM}	peak base current		–	-200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	100	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.

RATING CHARACTERISTIC CURVES (CHT2907N1PT)

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	357	K/W

Note

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

CHARACTERISTICS

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

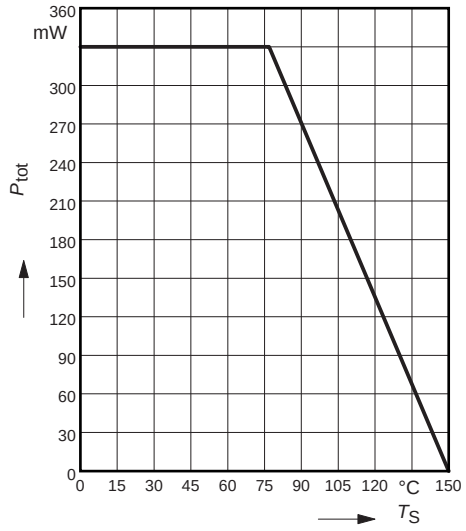
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = -60 V	–	-10	nA
		I_C = 0; V_{CB} = -60 V; Tj = 125 °C	–	-10	uA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = 5 V	–	-10	nA
h_{FE}	DC current gain	I_C = -0.1 mA; V_{CE} = -10V; note 1	35	–	
		I_C = -1.0 mA; V_{CE} = -10V	50	–	
		I_C = -10 mA; V_{CE} =- 10V	75	–	
		I_C = -10 mA; V_{CE} = -10V;Ta = -55°C	35	–	
		I_C = -150 mA; V_{CE} = -10V	100	300	
		I_C = -150 mA; V_{CE} = -1.0V	50	–	
		I_C = -500 mA; V_{CE} = -10V	40	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = -150 mA; I_B = -15 mA	–	-400	mV
		I_C = -500 mA; I_B = -50 mA	–	-1.6	V
V_{BEsat}	base-emitter saturation voltage	I_C = -150 mA; I_B = -15 mA	-0.6	-1.3	V
		I_C = -500 mA; I_B = -50 mA	–	-2.6	V
C_c	collector capacitance	I_E = i_e = 0; V_{CB} = - 5 V; f = 1 MHz	–	8	pF
C_e	emitter capacitance	I_C = i_c = 0; V_{BE} = -500 mV; f = 1 MHz	–	30	pF
f_T	transition frequency	I_C = -20 mA; V_{CE} = - 20 V; f = 100 MHz	200	–	MHz
F	noise figure	I_C = 100 µA; V_{CE} = - 5 V; R_S = 1 kΩ; f = 1.0 kHz	–	4	dB
Switching times (between 10% and 90% levels);					
t_{on}	turn-on time	I_{Con} = -150 mA; I_{Bon} = -15mA; I_{Boff} = –15 mA	–	35	ns
t_d	delay time		–	10	ns
t_r	rise time		–	40	ns
t_{off}	turn-off time		–	100	ns
t_s	storage time		–	80	ns
t_f	fall time		–	30	ns

Note

1. Pulse test: $t_p \leq 300\ \mu s$; $\delta \leq 0.02$.

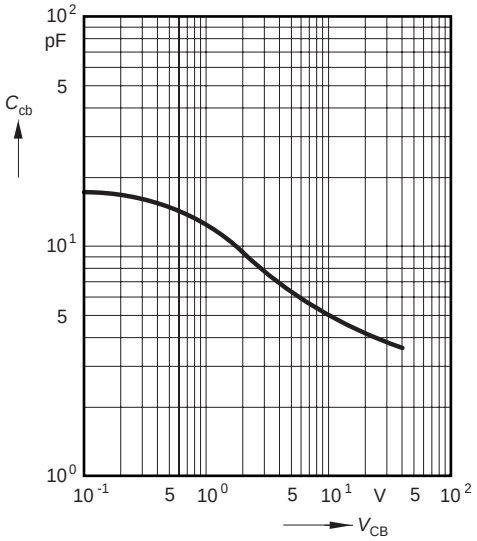
RATING CHARACTERISTIC CURVES (CHT2907N1PT)

Total power dissipation $P_{tot} = f(T_S)$



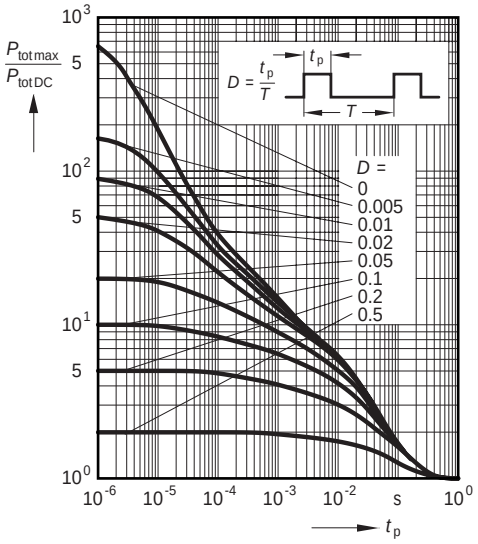
Collector-base capacitance $C_{CB} = f(V_{CB})$

f = 1MHz



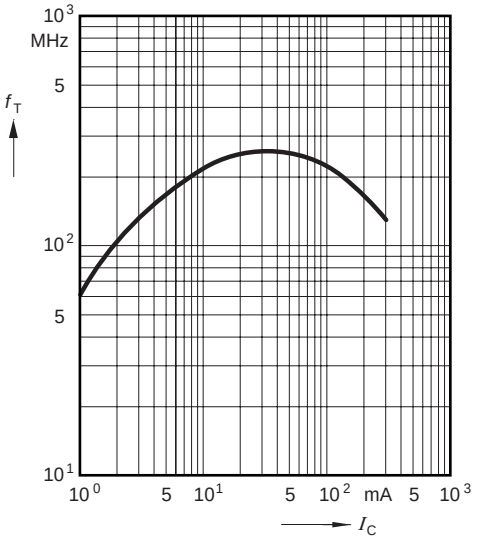
Permissible pulse load

$P_{totmax} / P_{totDC} = f(t_p)$



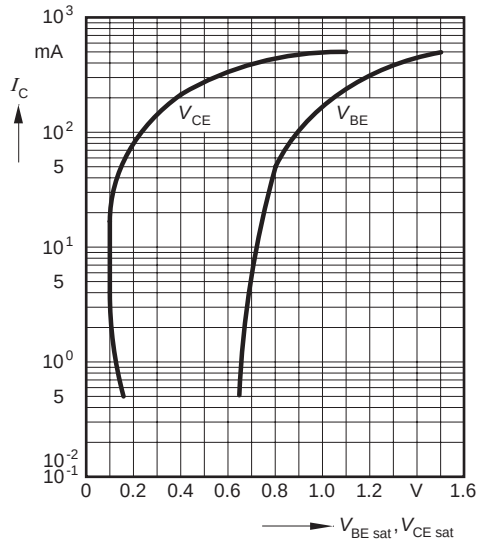
Transition frequency $f_T = f(I_C)$

V_{CE} = 5V

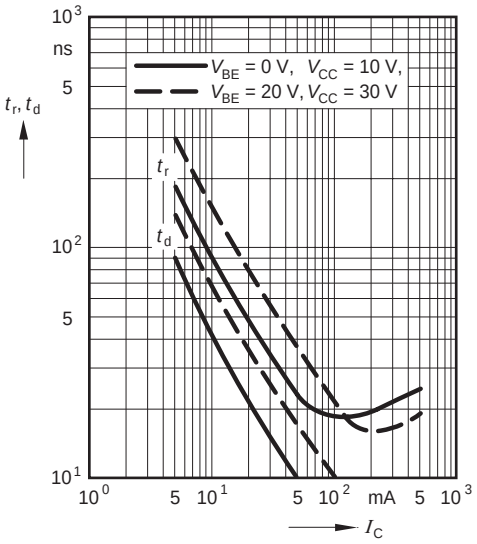


RATING CHARACTERISTIC CURVES (CHT2907N1PT)

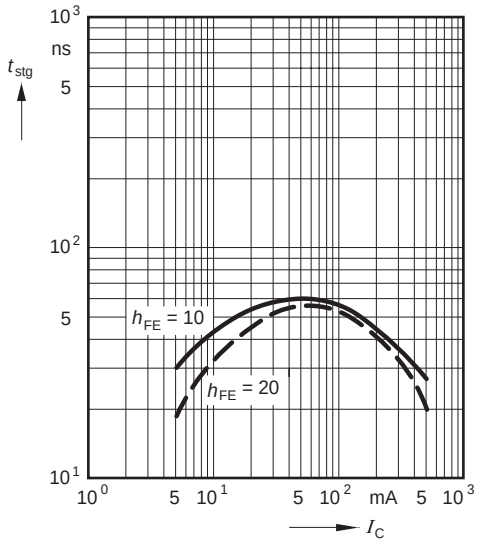
Saturation voltage $I_C = f(V_{BEsat}, V_{CEsat})$
$h_{FE} = 10$



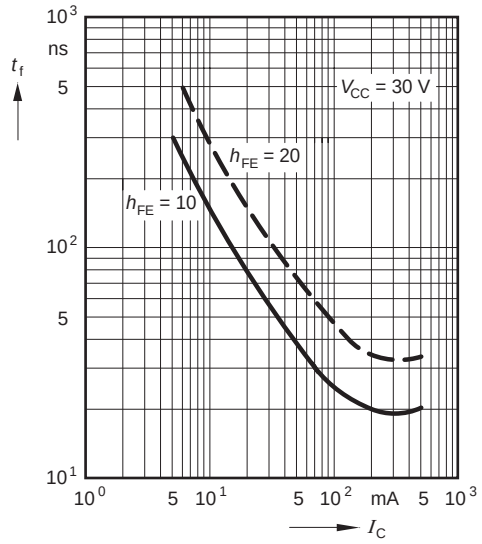
Delay time $t_d = f(I_C)$
Rise time $t_r = f(I_C)$



Storage time $t_{stg} = f(I_C)$



Fall time $t_f = f(I_C)$



RATING CHARACTERISTIC CURVES (CHT2907N1PT)

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

V_{CE} = 5V