



**CHENMKO ENTERPRISE CO.,LTD**

**CHT817PT**

**SURFACE MOUNT**

**NPN Multi-Chip General Purpose Amplifier**

**VOLTAGE 45 Volts CURRENT 0.5 Ampere**

*Lead free devices*

**APPLICATION**

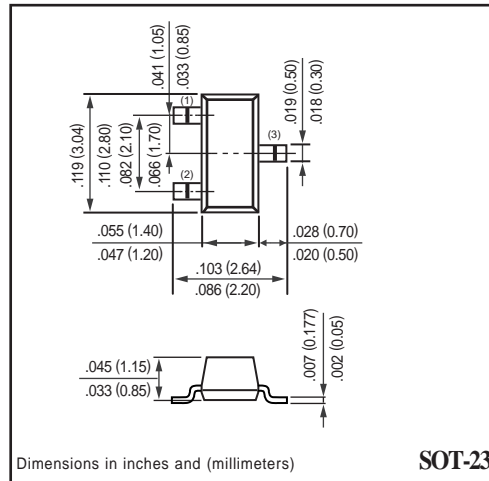
- \* AF input stages and driver applicationon equipment.
- \* Other general purpose applications.

**FEATURE**

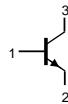
- \* Small surface mounting type. (SOT-23)
- \* High current gain.
- \* Suitable for high packing density.
- \* Low collector-emitter saturation.
- \* High saturation current capability.

**MARKING**

- \* HFE(Q):LT
- \* HFE(R):IT
- \* HFE(S):MT



**CIRCUIT**



**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>CES</sub> | collector-base voltage        | open emitter                     | —    | 5    | V    |
| V <sub>EBO</sub> | emitter-base voltage          | open collector                   | —    | 5    | V    |
| I <sub>C</sub>   | collector current (DC)        |                                  | —    | 500  | mA   |
| I <sub>CM</sub>  | peak collector current        |                                  | —    | 1000 | mA   |
| I <sub>BM</sub>  | peak base current             |                                  | —    | 200  | mA   |
| P <sub>tot</sub> | total power dissipation       | T <sub>amb</sub> ≤ 25 °C; note 1 | —    | 330  | mW   |
| T <sub>stg</sub> | storage temperature           |                                  | -65  | +150 | °C   |
| T <sub>j</sub>   | junction temperature          |                                  | —    | 150  | °C   |
| T <sub>amb</sub> | operating ambient temperature |                                  | -65  | +150 | °C   |

**Note**

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

## RATING CHARACTERISTIC ( CHT817PT )

### THERMAL CHARACTERISTICS

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

#### Note

- Transistor mounted on an FR4 printed-circuit board.

### CHARACTERISTICS

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

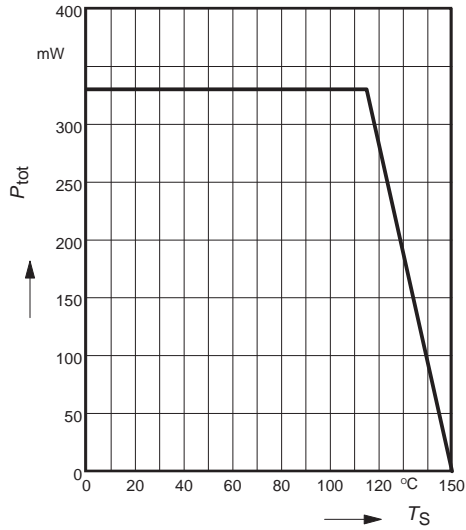
| SYMBOL      | PARAMETER                            | CONDITIONS  | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|---|------|------|------|
| $I_{CBO}$   | collector cut-off current            | $I_E = 0; V_{CB} = 25\text{ V}$                               | –    | 100  | nA   |
|             |                                      | $I_C = 0; V_{CB} = 25\text{ V}; T_A = 150\text{ °C}$          | –    | 50   | uA   |
| $I_{EBO}$   | emitter cut-off current              | $I_C = 0; V_{EB} = 4\text{ V}$                                | –    | 100  | nA   |
| $h_{FE}$    | DC current gain                      | $I_C = 100\text{ mA}; V_{CE} = 1.0\text{ V};$ note 1          | 100  | 600  |      |
| $V_{CEsat}$ | collector-emitter saturation voltage | $I_C = 500\text{ mA}; I_B = 50\text{ mA}$                     | –    | 700  | mV   |
| $V_{BEsat}$ | base-emitter saturation voltage      | $I_C = 500\text{ mA}; I_B = 50\text{ mA}$                     |      | 1.2  | V    |
| $C_c$       | collector capacitance                | $I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$       | –    | 6.0  | pF   |
| $f_T$       | transition frequency                 | $I_C = 50\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$ | 170  | –    | MHz  |

#### Note

- Pulse test:  $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$ .
- $h_{FE}$ : Classification Q: 100 to 250, R: 160 to 400, S: 250 to 600

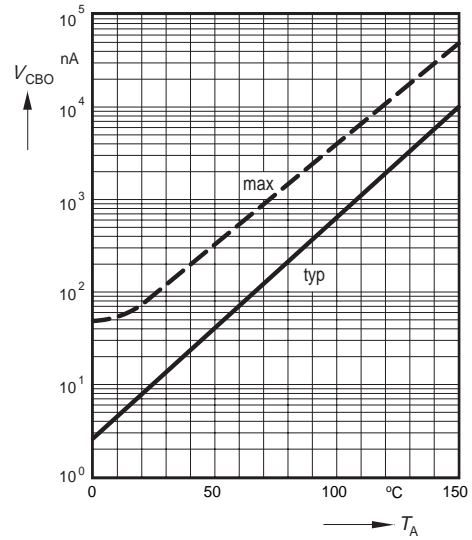
## RATING CHARACTERISTIC CURVES ( CHT817PT )

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

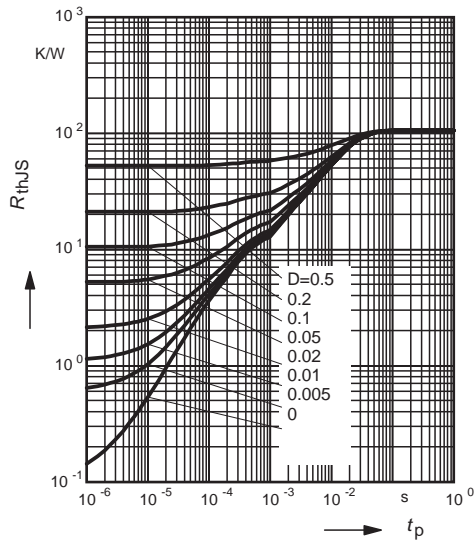


**Collector cutoff current  $I_{CBO} = f(T_A)$**

$V_{CB} = 25V$

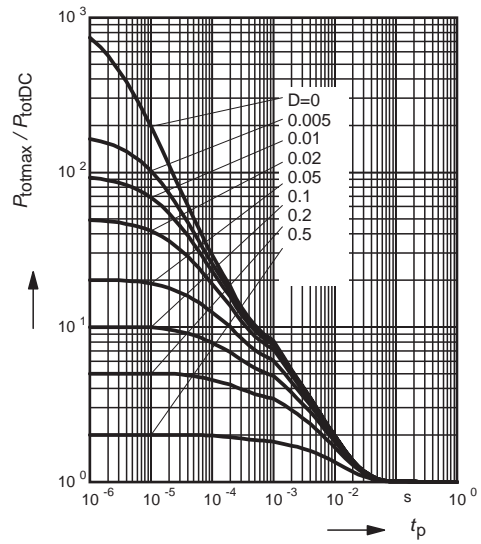


**Permissible Pulse Load  $R_{thJS} = f(t_p)$**



**Permissible Pulse Load**

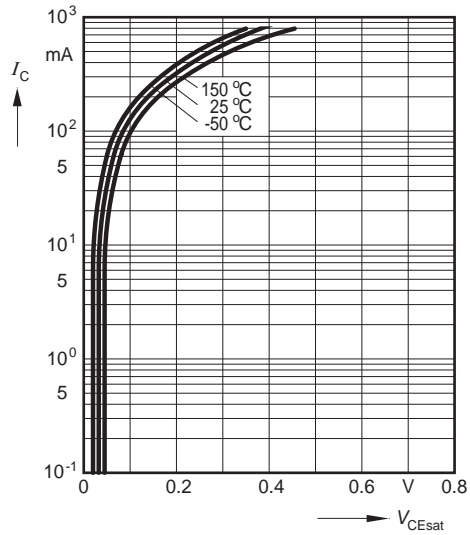
$P_{totmax} / P_{totDC} = f(t_p)$



## RATING CHARACTERISTIC CURVES ( CHT817PT )

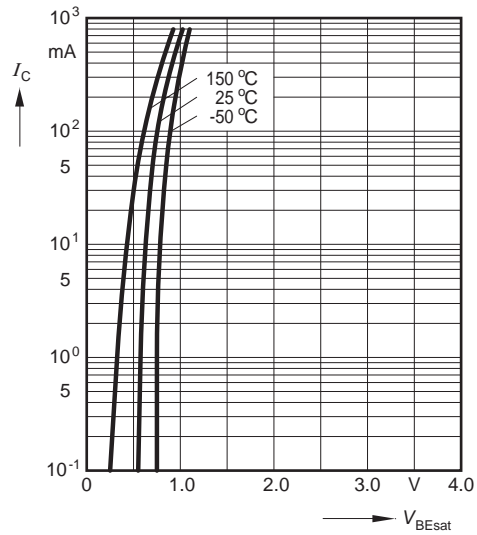
### Collector-emitter saturation voltage

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



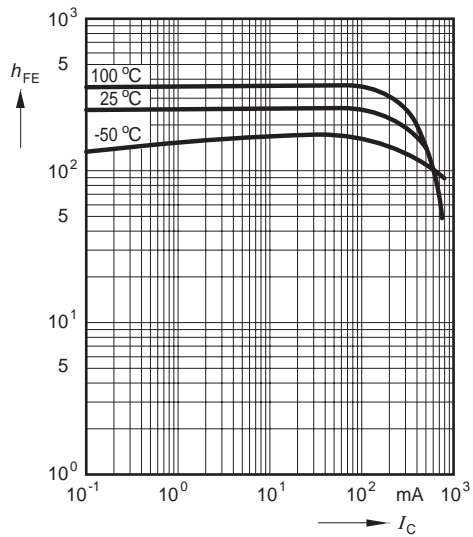
### Base-emitter saturation voltage

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



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

$$V_{CE} = 5V$$



### Transition frequency $f_T = f(I_C)$

$$V_{CE} = 5V$$

