



**CHENMKO ENTERPRISE CO.,LTD**

**CH817UPNPT**

*Lead free devices*

**SURFACE MOUNT**  
**NPN/PNP Silicon AF Transistor Array**  
**VOLTAGE 50 Volts CURRENT 0.5 Ampere**

**APPLICATION**

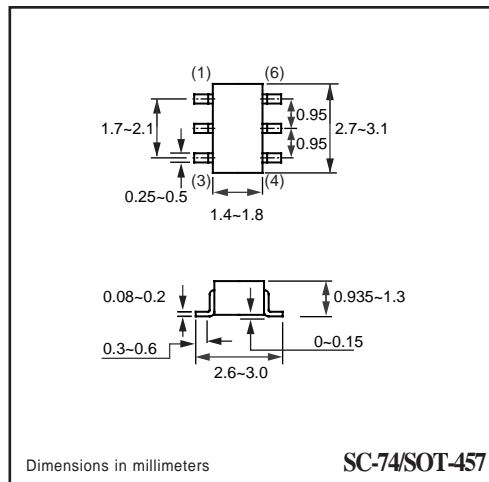
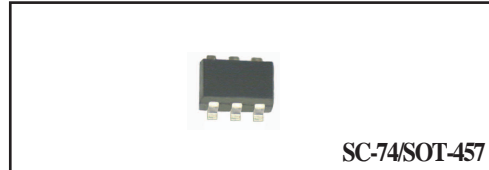
- \* AF input stages and driver applicationon equipment.
- \* Other switching applications.

**FEATURE**

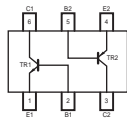
- \* Small surface mounting type. (SC-74/SOT-457)
- \* High current gain.
- \* Suitable for high packing density.
- \* Low collector-emitter saturation.
- \* High saturation current capability.
- \* Two internal isolated NPN/PNP transistor in one package.

**CONSTRUCTION**

- \* NPN/PNP transistor in one package.



**CIRCUIT**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter	—	45	V
V <sub>CEO</sub>	collector-emitter voltage	open base	—	50	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 CURVES ( CH817UPNPT )

### THERMAL CHARACTERISTICS

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

#### Note

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

### CHARACTERISTICS

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

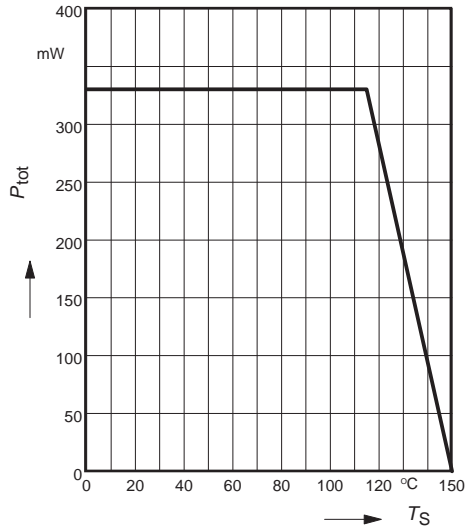
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = 25\text{ V}$	–	100	nA
		$I_C = 0; V_{CB} = 25\text{ V}; T_A = 150\text{ °C}$	–	50	uA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 4\text{ V}$	–	100	nA
$h_{FE}$	DC current gain	$I_C = 100\text{ mA}; V_{CE} = 1.0\text{V}; \text{note 1}$	160	400	
		$I_C = 300\text{ mA}; V_{CE} = 1.0\text{V}$	100	–	
$V_{CEsat}$	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	pF
$C_e$	emitter capacitance	$I_C = i_c = 0; V_{BE} = 500\text{ mV}; f = 1\text{ MHz}$	–	60	pF
$f_T$	transition frequency	$I_C = 50\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	170	–	MHz
F	noise figure	$I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 1\text{ k}\Omega; f = 1.0\text{ kHz}$	–	4	dB

#### Note

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

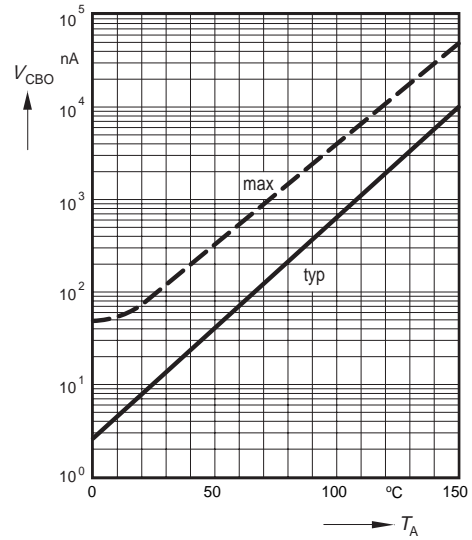
## RATING CHARACTERISTIC CURVES ( CH817UPNPT )

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

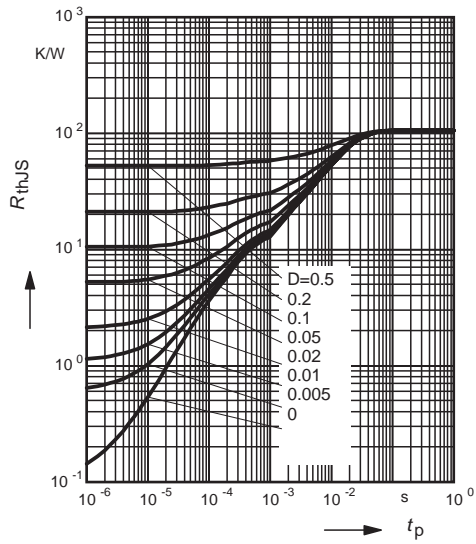


**Collector cutoff current  $I_{CBO} = f(T_A)$**

$V_{CB} = 25V$

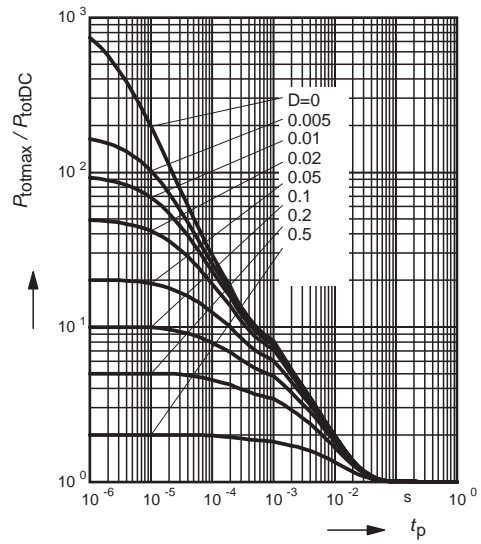


**Permissible Pulse Load  $R_{thJS} = f(t_p)$**



**Permissible Pulse Load**

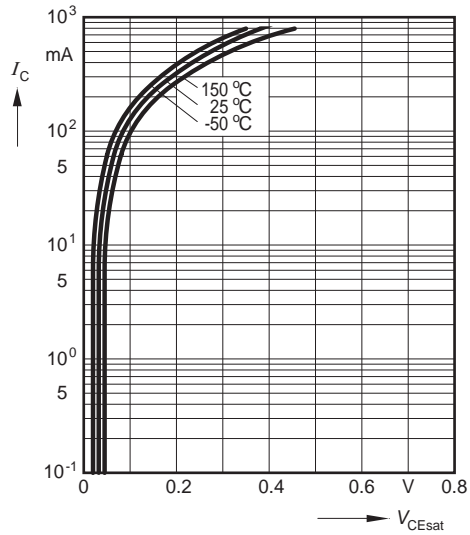
$P_{totmax} / P_{totDC} = f(t_p)$



## RATING CHARACTERISTIC CURVES ( CH817UPNPT )

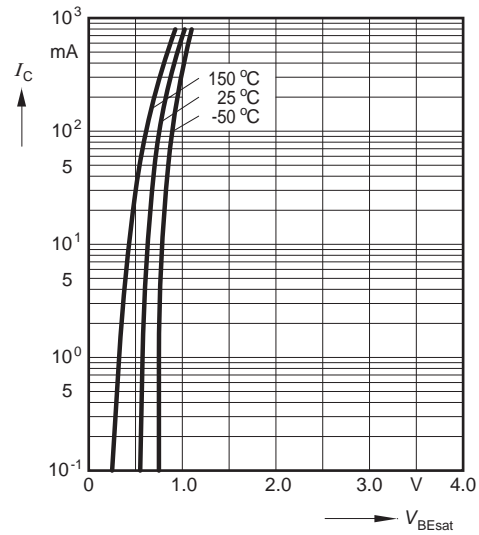
### Collector-emitter saturation voltage

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



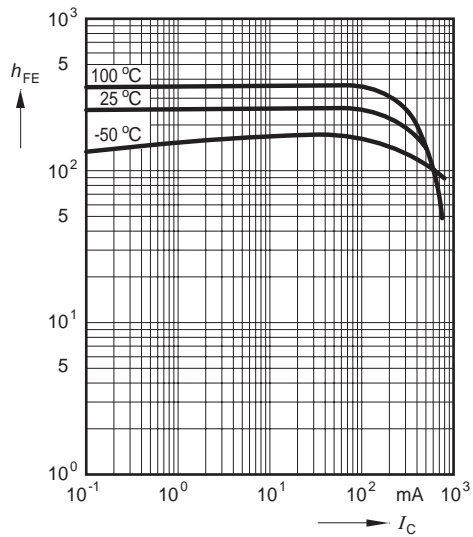
### Base-emitter saturation voltage

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



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

$$V_{CE} = 5V$$



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

$$V_{CE} = 5V$$

