CHENMKO ENTERPRISE CO.,LTD

CHT42PT

Lead free devices

SURFACE MOUNT
NPN High Voltage Transistor

VOLTAGE 300 Volts CURRENT 0.5 Ampere

APPLICATION

* Video out to drive color CRT
* Other high voltage applications.

FEATURE

* Small surface mounting type. (SOT-23)
* Low current (Max.=500mA).
* Suitable for high packing density.
* Low voltage (Max.=300V) .
* High saturation current capability.

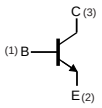
CONSTRUCTION

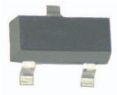
* NPN High Voltage Transistor

MARKING

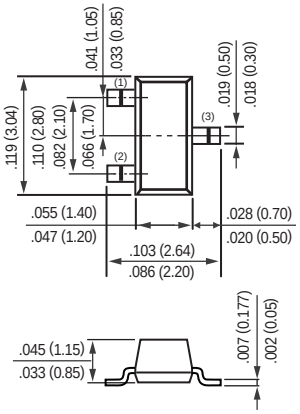
* T42

CIRCUIT





SOT-23



Dimensions in inches and (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	–	300	V
V_{CEO}	collector-emitter voltage	open base	–	300	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current DC		–	500	mA
I_{CM}	peak collector current		–	500	mA
I_{BM}	peak base current		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	350	mW
T_{stg}	storage temperature		–55	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–55	+150	°C

Note

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

RATING CHARACTERISTIC CURVES (CHT42PT)

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.

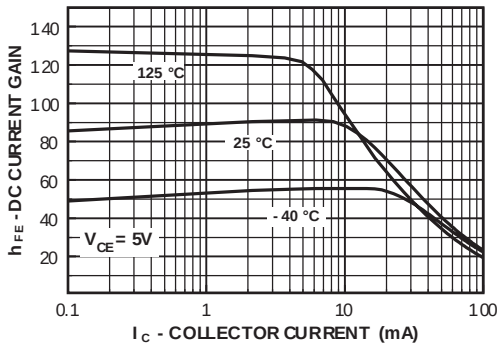
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 2 0 0 V	–	0.1	uA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = 6 V	–	0.1	uA
h_{FE}	DC current gain	V_{CE} = 10V; note 1;			
		I_C = 1.0 mA	25	–	
		I_C = 10 mA	40	–	
		I_C = 30 mA	40	300	
V_{CEsat}	collector-emitter saturation voltage	I_C = 20 mA; I_B = 2 mA	–	500	mV
V_{BEsat}	base-emitter saturation voltage	I_C = 20 mA; I_B = 2 mA	–	900	mV
C_{cb}	collector-base capacitance	$I_E = i_e$ = 0; V_{CB} = 2 0 V ; f = 1 MHz	–	3	pF
f_T	transition frequency	I_C = 10 mA; V_{CE} = 20 V; f = 100 MHz	50	–	MHz

Note

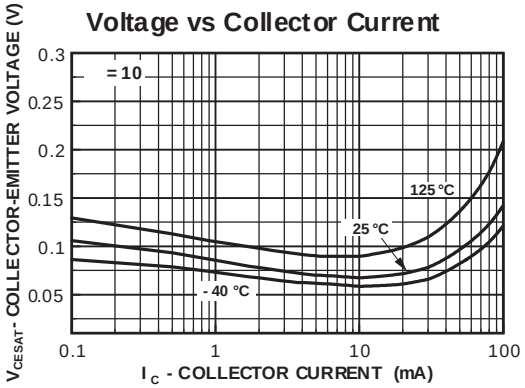
1. Pulse test: $t_p \leq 300\ \mu s$; $\delta \leq 0.02$.

RATING CHARACTERISTIC CURVES (CHT42PT)

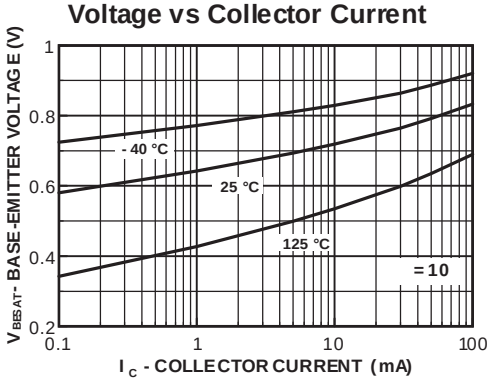
DC Current Gain vs Collector Current



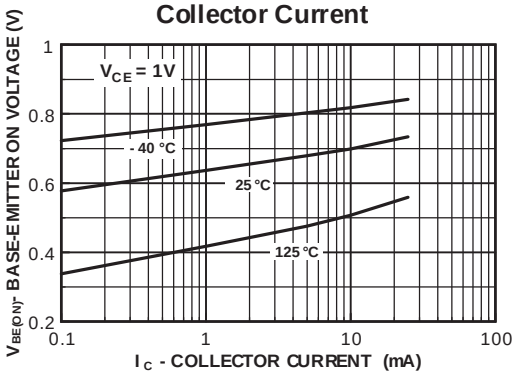
Collector-Emitter Saturation Voltage vs Collector Current



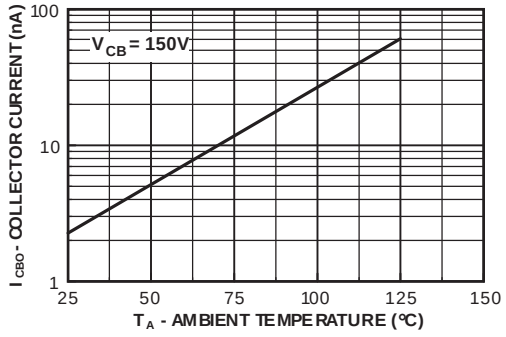
Base-Emitter Saturation Voltage vs Collector Current



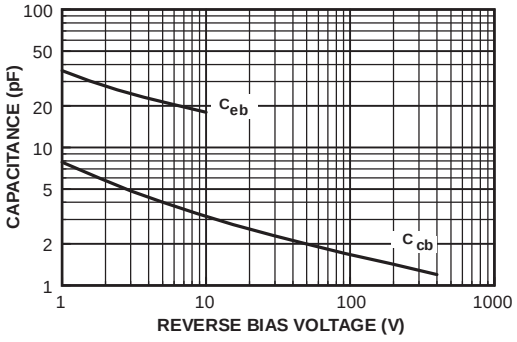
Base-Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



Collector-Base and Emitter-Base Capacitance vs Reverse Bias Voltage



RATING CHARACTERISTIC CURVES (CHT42PT)

Power Dissipation vs
Ambient Temperature