CHENMKO ENTERPRISE CO.,LTD

CHDTC123TMPT

Lead free devices

SURFACE MOUNT
NPN Digital Silicon Transistor

VOLTAGE 50 Volts CURRENT 100 mAmpere

APPLICATION

* Switching circuit, Inverter, Interface circuit, Driver circuit.

FEATURE

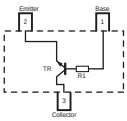
* Small surface mounting type. (SOT-723)
* High current gain.
* Suitable for high packing density.
* Low colloector-emitter saturation.
* High saturation current capability.
* Internal isolated NPN transistors in one package.
* Built in single resistor(R1=2.2kΩ, Typ.)

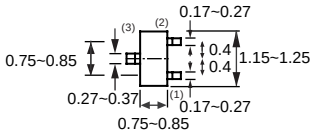
CONSTRUCTION

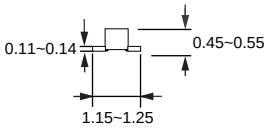
* One NPN transistors and bias of thin-film resistors in one package.

SOT-723

CIRCUIT







Dimensions in millimeters

SOT-723

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-Base voltage		50	V
V_{CEO}	Collector-Emitter voltage		50	V
V_{EBO}	Emitter-Base voltage		5	V
$I_{C(Max.)}$	Collector current		100	mA
P_D	Power dissipation	$T_{amb} \leq 25\ ^{o}C$, Note 1	150	mW
T_{STG}	Storage temperature		−55 +150	^{o}C
T_J	Junction temperature		−55 +150	^{o}C
$R\theta_{J-S}$	Thermal resistance , Note 1	junction - soldering point	140	$^{o}C/W$

Note

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

RATING CHARACTERISTIC (CHDTC123TMPT)

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
BV_{CBO}	Collector-base breakdown voltage	I_C=50uA	50	–	–	V
BV_{CEO}	Collector-emitter breakdown voltage	I_C=1.0mA	50	–	–	V
BV_{EBO}	Emitter-base breakdown voltage	I_E=50uA	5.0	–	–	V
I_{CBO}	Collector cutoff current	V_{CB}=50V	–	–	0.5	uA
I_{EBO}	Emitter cutoff current	V_{EB}=4V	–	–	0.5	uA
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C/I_B=5mA/0.25mA	–	–	0.3	V
h_{FE}	DC current gain	I_C=1mA; V_{CE}=5.0V	100	250	600	
R_1	Input resistor		1.54	2.2	2.86	KΩ
f_T	Transition frequency	I_C=5mA, V_{CE}=10.0V *f*=100MHz	–	250	–	MHz

Note

1.Pulse test: tp≤300uS; δ≤0.02.

RATING CHARACTERISTIC CURVES (CHDTC123TMPT)

Typical Electrical Characteristics

Fig.1 DC current gain vs. collector current

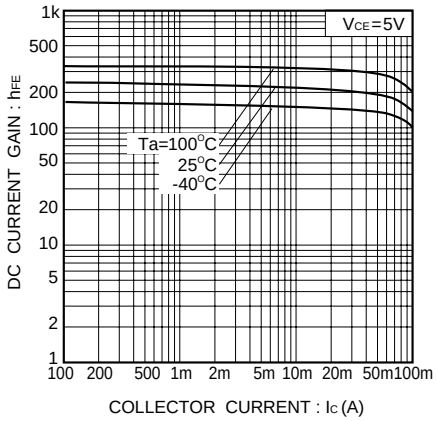


Fig.2 Collector-emitter voltage vs. collector current