



CHENMKO ENTERPRISE CO.,LTD

CHDTD123TKPT

Lead free devices

**SURFACE MOUNT
NPN Digital Silicon Transistor**

VOLTAGE 50 Volts CURRENT 500 mAmpere

APPLICATION

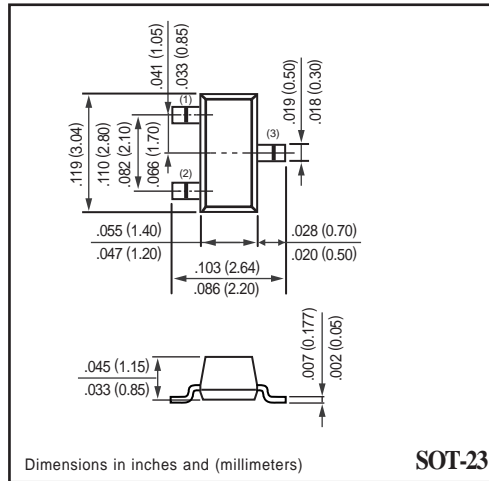
* Switching circuit, Inverter, Interface circuit, Driver circuit.

FEATURE

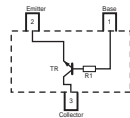
- * Small surface mounting type. (SOT-23)
- * High current gain.
- * Suitable for high packing density.
- * Low collector-emitter saturation.
- * High saturation current capability.
- * Internal isolated NPN transistors in one package.
- * Built in single resistor(R1=2.2kΩ, Typ.)

CONSTRUCTION

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



CIRCUIT



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		40	V
V _{EBO}	Emitter-Base voltage		5	V
I _{C(Max.)}	Collector current		500	mA
P _D	Power dissipation	T _{amb} ≤ 25 °C, Note 1	200	mW
T _{STG}	Storage temperature		-55 +150	°C
T _J	Junction temperature		-55 +150	°C
R _{θJ-S}	Thermal resistance , Note 1	junction - soldering point	140	°C/W

Note

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

RATING CHARACTERISTIC (CHDTD123TKPT)

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
BV _{CB0}	Collector-base breakdown voltage	I _C =50μA	50	–	–	V
BV _{CEO}	Collector-emitter breakdown voltage	I _C =1.0mA	40	–	–	V
BV _{EB0}	Emitter-base breakdown voltage	I _E =50μA	5.0	–	–	V
I _{CB0}	Collector cutoff current	V _{CB} =50V	–	–	0.5	μA
I _{EB0}	Emitter cutoff current	V _{EB} =4V	–	–	0.5	μA
V _{CE(sat)}	Collector-emitter saturation voltage	I _C /I _B =50mA/2.5mA	–	–	0.3	V
h _{FE}	DC current gain	I _C =50mA; V _{CE} =5.0V	100	250	600	
R ₁	Input resistor		1.54	2.2	2.86	KΩ
f _T	Transition frequency	I _E =-50mA, V _{CE} =10.0V f=100MHz	–	200	–	MHz

Note

1. Pulse test: t_p≤300μS; δ≤0.02.

RATING CHARACTERISTIC CURVES (CHDTD123TKPT)

Typical Electrical Characteristics

Fig.1 DC current gain vs. collector current

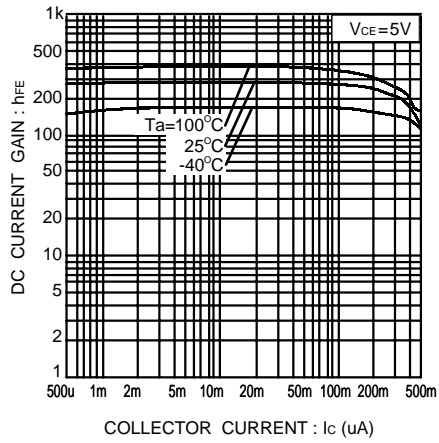


Fig.2 Collector-emitter voltage vs. collector current

