



**CHENMKO ENTERPRISE CO.,LTD**

**CHDTC144TUPT**

*Lead free devices*

**SURFACE MOUNT  
NPN Digital Silicon Transistor**

VOLTAGE 50 Volts CURRENT 100 mAmpere

**APPLICATION**

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

**FEATURE**

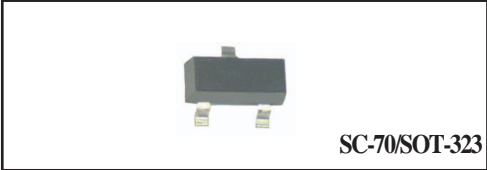
- \* Small surface mounting type. (SC-70/SOT-323)
- \* High current gain.
- \* Suitable for high packing density.
- \* Low collector-emitter saturation.
- \* High saturation current capability.
- \* Internal isolated NPN transistors in one package.
- \* Built in single resistor(R1=47kΩ, Typ. )

**CONSTRUCTION**

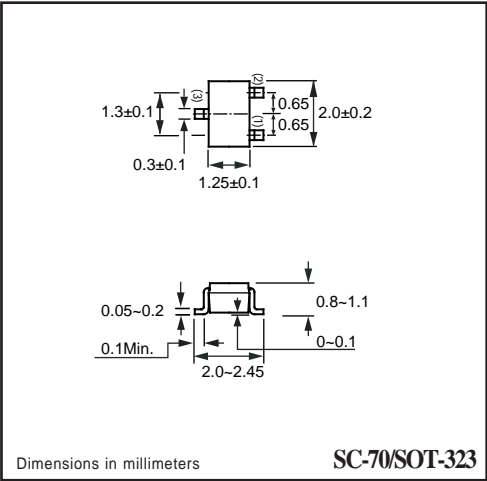
\* One NPN transistors and bias of thin-film resistors in one package.

**MARKING**

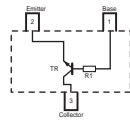
TUD



SC-70/SOT-323



**CIRCUIT**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
Vcbo	Collector-Base voltage		50	V
Vceo	Collector-Emitter voltage		50	V
Vebo	Emitter-Base voltage		5	V
Ic(Max.)	Collector current		100	mA
Pd	Power dissipation	T <sub>amb</sub> ≤ 25 °C, Note 1	200	mW
Tstg	Storage temperature		-55 +150	°C
Tj	Junction temperature		-55 +150	°C
RθJ-s	Thermal resistance , Note 1	junction - soldering point	140	°C/W

**Note**

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

## RATING CHARACTERISTIC ( CHDTC144TUPT )

### CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
BV <sub>CB0</sub>	Collector-base breakdown voltage	I <sub>C</sub> =50 $\mu$ A	50	–	–	V
BV <sub>CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =1.0mA	50	–	–	V
BV <sub>EB0</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50 $\mu$ A	5.0	–	–	V
I <sub>CB0</sub>	Collector cutoff current	V <sub>CB</sub> =50V	–	–	0.5	$\mu$ A
I <sub>EB0</sub>	Emitter cutoff current	V <sub>EB</sub> =4V	–	–	0.5	$\mu$ A
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> /I <sub>B</sub> =5mA/0.5mA	–	–	0.3	V
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1mA; V <sub>CE</sub> =5.0V	100	250	600	
R <sub>1</sub>	Input resistor		32.9	47	61.1	K $\Omega$
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =5mA, V <sub>CE</sub> =10.0V f=100MHz	–	250	–	MHz

### Note

1. Pulse test: t<sub>p</sub>≤300 $\mu$ s;  $\delta$ ≤0.02.

## RATING CHARACTERISTIC CURVES ( CHDTC144TUPT )

### Typical Electrical Characteristics

Fig.1 DC current gain vs. collector current

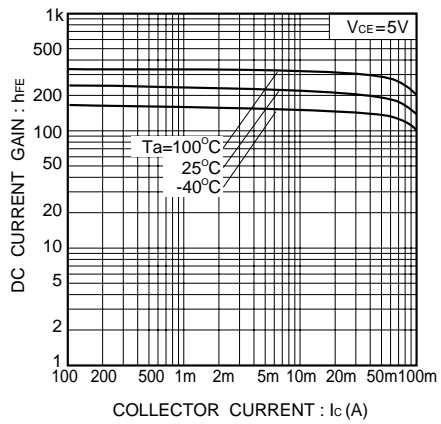


Fig.2 Collector-emitter voltage vs. collector current

