



# CHENMKO ENTERPRISE CO.,LTD

**CHDTD143TKPT**

## SURFACE MOUNT NPN Digital Silicon Transistor

VOLTAGE 50 Volts CURRENT 500 mAmpere

Lead free devices

### APPLICATION

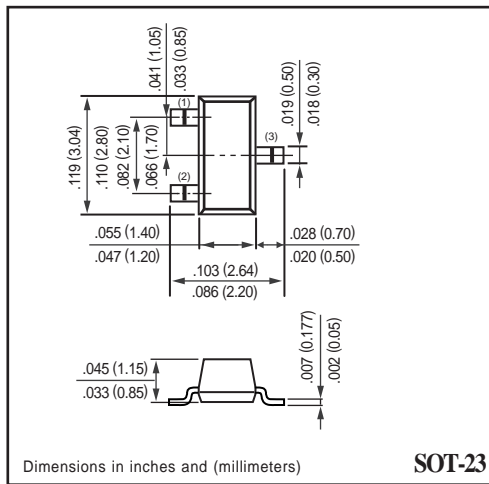
\* Switching circuit, Inverter, Interface circuit, Driver circuit.

### FEATURE

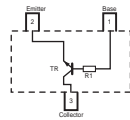
- \* Small surface mounting type. (SOT-23)
- \* High current gain.
- \* Suitable for high packing density.
- \* Low collector-emitter saturation.
- \* High saturation current capability.
- \* Internal isolated NPN transistors in one package.
- \* Built in single resistor(R1=4.7kΩ, Typ. )

### 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 <sub>CBO</sub>	Collector-Base voltage		50	V
V <sub>CEO</sub>	Collector-Emitter voltage		40	V
V <sub>EBO</sub>	Emitter-Base voltage		5	V
I <sub>C(Max.)</sub>	Collector current		500	mA
P <sub>D</sub>	Power dissipation	T <sub>amb</sub> ≤ 25 °C, Note 1	200	mW
T <sub>STG</sub>	Storage temperature		-55 +150	°C
T <sub>J</sub>	Junction temperature		-55 +150	°C
R <sub>θJ-S</sub>	Thermal resistance , Note 1	junction - soldering point	140	°C/W

### Note

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

## RATING CHARACTERISTIC ( CHDTD143TKPT )

### CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
BVCBO	Collector-base breakdown voltage	$I_C=50\mu\text{A}$	50	–	–	V
BVCEO	Collector-emitter breakdown voltage	$I_C=1.0\text{mA}$	40	–	–	V
BVEBO	Emitter-base breakdown voltage	$I_E=50\mu\text{A}$	5.0	–	–	V
ICBO	Collector cutoff current	$V_{CB}=50\text{V}$	–	–	0.5	$\mu\text{A}$
IEBO	Emitter cutoff current	$V_{EB}=4\text{V}$	–	–	0.5	$\mu\text{A}$
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C/I_B=50\text{mA}/2.5\text{mA}$	–	–	0.3	V
$h_{FE}$	DC current gain	$I_C=50\text{mA}; V_{CE}=5.0\text{V}$	100	250	600	
$R_1$	Input resistor		3.29	4.7	6.11	$\text{K}\Omega$
$f_T$	Transition frequency	$I_E=-50\text{mA}, V_{CE}=10.0\text{V}$ $f=100\text{MHz}$	–	200	–	MHz

### Note

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

## RATING CHARACTERISTIC CURVES ( CHDTD143TKPT )

### Typical Electrical Characteristics

Fig.1 DC current gain vs. collector current

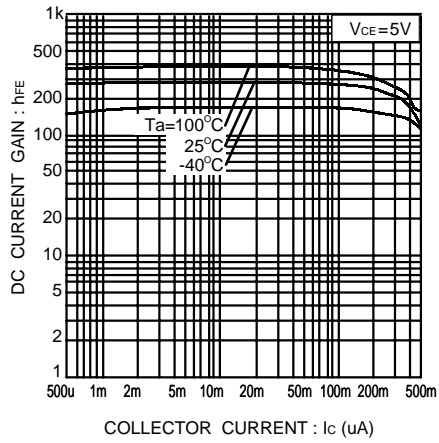


Fig.2 Collector-emitter voltage vs. collector current

