



**CHENMKO ENTERPRISE CO.,LTD**

*Lead free devices*

**SURFACE MOUNT  
NPN Digital Silicon Transistor**

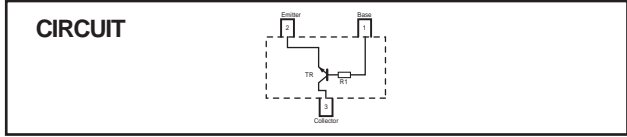
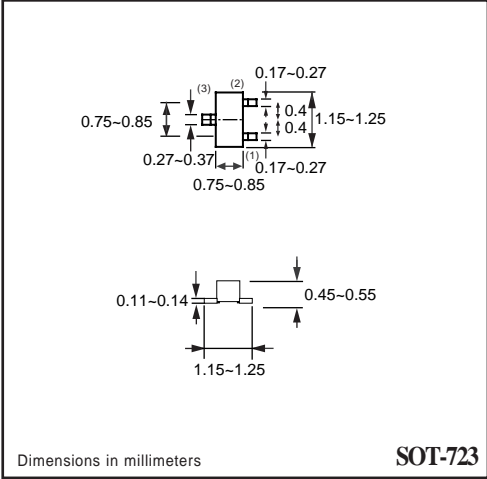
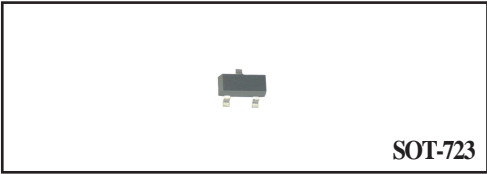
VOLTAGE 50 Volts CURRENT 100 mAmpere

**CHDTC144TMPT**

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

**FEATURE**  
\* Small surface mounting type. (SOT-723)  
\* 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.



**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 | 150      | 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 ( CHDTC144TMPT )

### 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  | $I_C=1.0\text{mA}$   | 50   | –    | –    | 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 | $I_C/I_B=5\text{mA}/0.5\text{mA}$                          | –    | –    | 0.3  | V                |
| $h_{FE}$      | DC current gain                      | $I_C=1\text{mA}; V_{CE}=5.0\text{V}$                       | 100  | 250  | 600  |                  |
| $R_1$         | Input resistor                       |  | 32.9 | 47   | 61.1 | $\text{K}\Omega$ |
| $f_T$         | Transition frequency                 | $I_C=5\text{mA}, V_{CE}=10.0\text{V}$<br>$f=100\text{MHz}$ | –    | 250  | –    | MHz              |

### Note

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

## RATING CHARACTERISTIC CURVES ( CHDTC144TMPT )

### Typical Electrical Characteristics

Fig.1 DC current gain vs. collector current

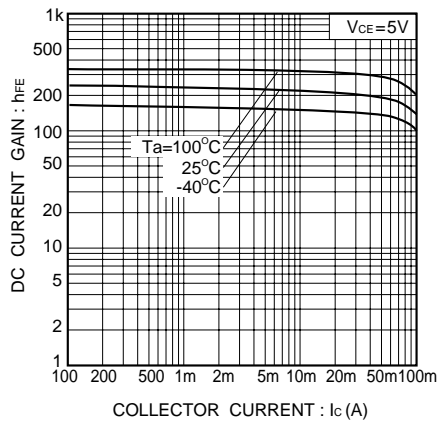


Fig.2 Collector-emitter voltage vs. collector current

