



**CHENMKO ENTERPRISE CO.,LTD**

Halogens free devices

**SURFACE MOUNT  
NPN Digital Silicon Transistor**

VOLTAGE 50 Volts CURRENT 100 mAmpere

CHDTC114WEGP

**APPLICATION**

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

**FEATURE**

- \* Small surface mounting type. (SC-75/SOT416)
- \* 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 bias resistor(R1=10kΩ, Typ. )

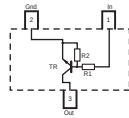
**CONSTRUCTION**

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

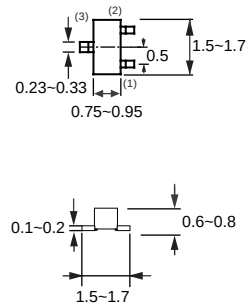
**MARKING**

WEA

**CIRCUIT**



SC-75/SOT-416



Dimensions in millimeters

SC-75/SOT-416

**LIMITING VALUES**

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

| SYMBOL               | PARAMETER               | CONDITIONS                       | MIN. | MAX. | UNIT |
|----------------------|-------------------------|----------------------------------|------|------|------|
| V <sub>CC</sub>      | Supply voltage          |                                  | —    | 50   | V    |
| V <sub>IN</sub>      | Input voltage           |                                  | -10  | +30  | V    |
| I <sub>O</sub>       | DC Output current       |                                  | —    | 100  | mA   |
| I <sub>C(Max.)</sub> |                         |                                  | —    | 100  |      |
| P <sub>TOT</sub>     | Total power dissipation | T <sub>amb</sub> ≤ 25 °C, Note 1 | —    | 150  | mW   |
| T <sub>STG</sub>     | Storage temperature     |                                  | -55  | +150 | °C   |
| T <sub>J</sub>       | Junction temperature    |                                  | —    | 150  | °C   |
| R <sub>θJ-S</sub>    | Thermal resistance      | junction - soldering point       | —    | 140  | °C/W |

**Note**

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

## RATING CHARACTERISTIC ( CHDTC114WEGP )

### CHARACTERISTICS

T<sub>amb</sub> = 25 °C unless otherwise specified.

| SYMBOL                         | PARAMETER            | CONDITIONS                                               | MIN. | TYP. | MAX. | UNIT |
|--------------------------------|----------------------|----------------------------------------------------------|------|------|------|------|
| V <sub>I(off)</sub>            | Input off voltage    | I <sub>o</sub> =100uA; V <sub>cc</sub> =50V              | 0.8  | –    | –    | V    |
| V <sub>I(on)</sub>             | Input on voltage     | I <sub>o</sub> =2mA; V <sub>o</sub> =0.3V                | –    | –    | 3.0  | V    |
| V <sub>O(on)</sub>             | Output voltage       | I <sub>o</sub> =10mA; I <sub>i</sub> =0.5mA              | –    | 0.1  | 0.3  | V    |
| I <sub>i</sub>                 | Input current        | V <sub>i</sub> =5V                                       | –    | –    | 0.88 | mA   |
| I <sub>C(off)</sub>            | Output current       | V <sub>i</sub> =0V; V <sub>cc</sub> =50V                 | –    | –    | 0.5  | uA   |
| h <sub>FE</sub>                | DC current gain      | I <sub>o</sub> =-10mA; V <sub>o</sub> =-5.0V             | 24   | –    | –    |      |
| R <sub>1</sub>                 | Input resistor       |                                                          | 7    | 10   | 13   | KΩ   |
| R <sub>2</sub> /R <sub>1</sub> | Resistor ratio       |                                                          | 0.37 | 0.47 | 0.57 |      |
| f <sub>T</sub>                 | Transition frequency | I <sub>E</sub> =-5mA, V <sub>CE</sub> =10.0V<br>f=100MHz | –    | 250  | –    | MHz  |

### Note

1.Pulse test: t<sub>p</sub>≤300uS; δ≤0.02.