



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

CHUMD5PT

Dual Digital Silicon Transistor

DTr1: VOLTAGE 50 Volts CURRENT 30 mAmpere
 DTr2: VOLTAGE 50 Volts CURRENT 100 mAmpere

Lead free devices

APPLICATION

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

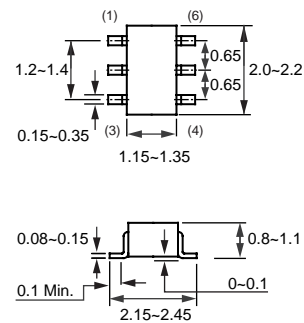
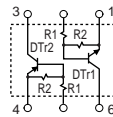
FEATURE

- * Small surface mounting type. (SC-88/SOT-363)
- * High current gain.
- * Suitable for high packing density.
- * Low collector-emitter saturation.
- * High saturation current capability.
- * Both the CHDTA143X & CHDTC144E in one package.



SC-88/SOT-363

CIRCUIT



Dimensions in millimeters

SC-88/SOT-363

CHDTC144E LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|----------------------|-------------------------|----------------------------------|------|------|------|
| V _{CC} | Supply voltage | | - | 50 | V |
| V _{IN} | Input voltage | | -10 | +12 | V |
| I _O | DC Output current | | - | 30 | mA |
| I _{C(Max.)} | | | - | 100 | |
| P _{TOT} | Total power dissipation | T _{amb} ≤ 25 °C, Note 1 | - | 200 | mW |
| T _{STG} | Storage temperature | | -55 | +150 | °C |
| T _J | Junction temperature | | - | 150 | °C |
| R _{θJ-S} | Thermal resistance | junction - soldering point | - | 140 | °C/W |

Note

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

CHDTA143X LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|----------------------|-------------------------|----------------------------------|------|------|------|
| V _{CC} | Supply voltage | | – | -50 | V |
| V _{IN} | Input voltage | | -20 | +7 | V |
| I _O | DC Output current | | – | -100 | mA |
| I _{C(Max.)} | | | – | -100 | |
| P _{TOT} | Total power dissipation | T _{amb} ≤ 25 °C, Note 1 | – | 150 | mW |
| T _{STG} | Storage temperature | | -55 | +150 | °C |
| T _J | Junction temperature | | – | 150 | °C |
| R _{θJ-S} | Thermal resistance | junction - soldering point | – | 140 | °C/W |

Note

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

CHDTC144E CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---------------------|----------------------|---|------|------|------|------|
| V _{I(off)} | Input off voltage | I _O =100µA; V _{CC} =5.0V | – | – | 0.5 | V |
| V _{I(on)} | Input on voltage | I _O =2mA; V _O =0.3V | 3.0 | – | – | V |
| V _{O(on)} | Output voltage | I _O =10mA; I _I =0.5mA | – | – | 0.3 | V |
| I _I | Input current | V _I =5V | – | – | 0.18 | mA |
| I _{C(off)} | Output current | V _I =0V; V _{CC} =50V | – | – | 0.5 | µA |
| h _{FE} | DC current gain | I _O =5mA; V _O =5.0V | 68 | – | – | |
| R ₁ | Input resistor | | 32.9 | 47 | 61.1 | KΩ |
| R _{2/R1} | Resistor ratio | | 0.8 | 1.0 | 1.2 | |
| f _T | Transition frequency | I _C =5mA, V _{CE} =10.0V f=100MHz | – | 250 | – | MHz |

Note

1. Pulse test: t_p≤300µS; δ≤0.02.

CHDTA143X CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---------------------|----------------------|---|------|------|-------|------|
| V _{I(off)} | Input off voltage | I _O =-100µA; V _{CC} =-5.0V | -0.3 | – | – | V |
| V _{I(on)} | Input on voltage | I _O =-20mA; V _O =-0.3V | – | – | -2.5 | V |
| V _{O(on)} | Output voltage | I _O =-10mA; I _I =-0.5mA | – | -0.1 | -0.3 | V |
| I _I | Input current | V _I =-5V | – | – | -0.18 | mA |
| I _{C(off)} | Output current | V _I =0V; V _{CC} =-50V | – | – | -0.5 | µA |
| h _{FE} | DC current gain | I _O =-10mA; V _O =-5.0V | 30 | – | – | |
| R ₁ | Input resistor | | 3.29 | 4.7 | 6.11 | KΩ |
| R _{2/R1} | Resistor ratio | | 1.7 | 2.1 | 2.6 | |
| f _T | Transition frequency | I _C =-5mA, V _{CE} =-10.0V f=100MHz | – | 250 | – | MHz |

Note

1. Pulse test: t_p≤300µS; δ≤0.02.

RATING CHARACTERISTIC CURVES (CHUMD5PT)

CHDTC144E Typical Electrical Characteristics

Fig.1 Input voltage vs. output current (ON characteristics)

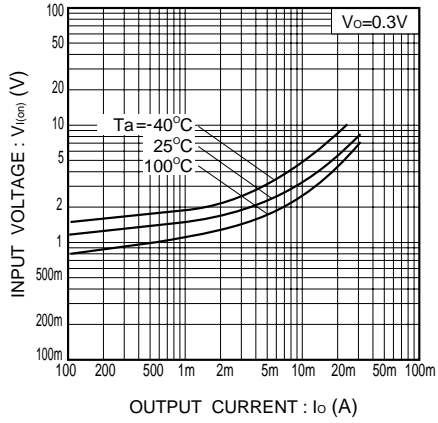


Fig.2 Output current vs. input voltage (OFF characteristics)

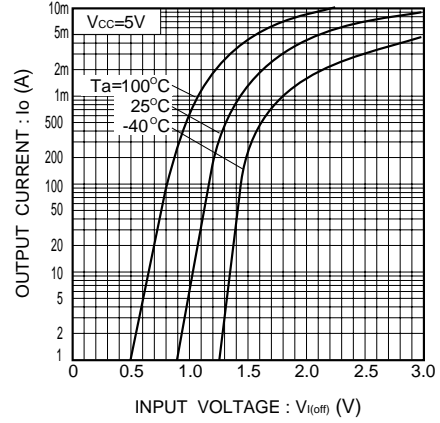


Fig.3 DC current gain vs. output current

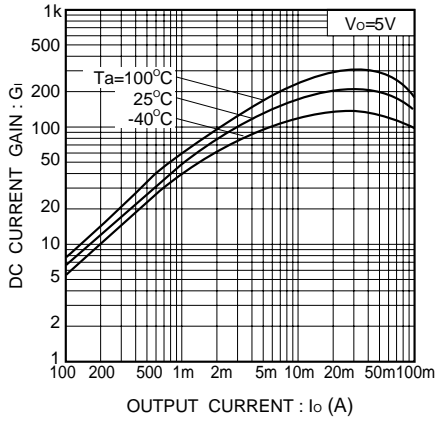
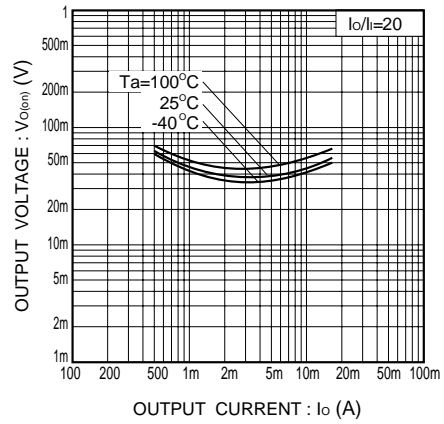


Fig.4 Output voltage vs. output current



RATING CHARACTERISTIC CURVES (CHUMD5PT)

CHDTA143X Typical Electrical Characteristics

Fig.1 Input voltage vs. output current (ON characteristics)

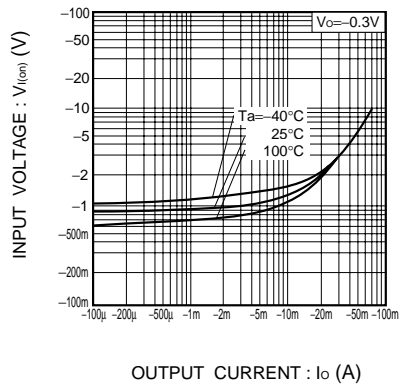


Fig.2 Output current vs. input voltage (OFF characteristics)

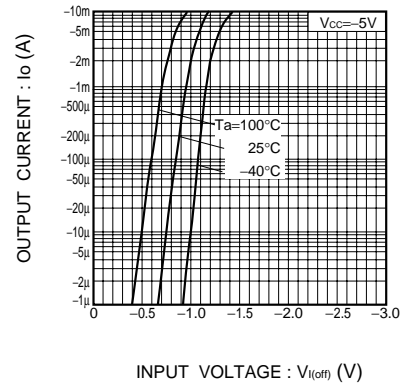


Fig.3 DC current gain vs. output current

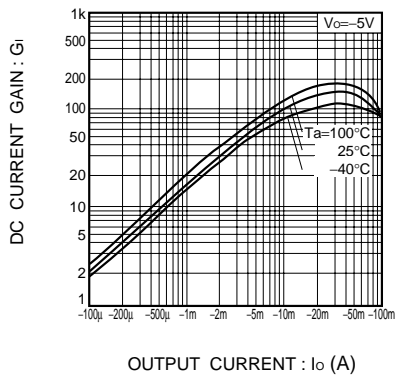


Fig.4 Output voltage vs. output current

