



# CHENMKO ENTERPRISE CO.,LTD

## SURFACE MOUNT

**CHUMD22PT**

### Dual Digital Silicon Transistor

VOLTAGE 50 Volts CURRENT 100 mAmpere

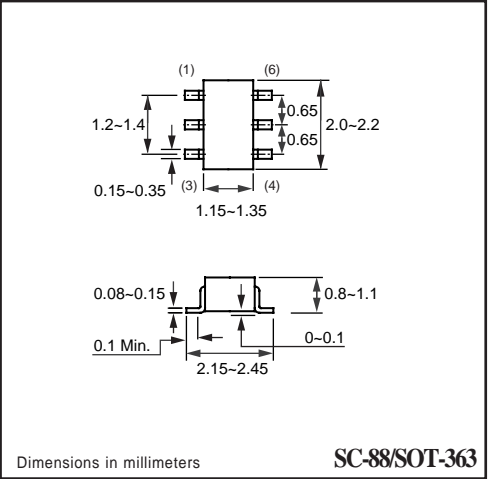
Lead free devices

#### APPLICATION

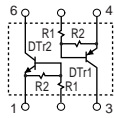
\* Switching circuit, Inverter, Interface circuit, Driver circuit.

#### 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 CHDTA143Z & CHDTC143Z in one package.



#### CIRCUIT



#### CHDTA143Z 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		-30	+5	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.

### CHDTC143Z 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		-5	+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.

### CHDTA143Z 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> =-5.0V	-0.5	–	–	V
V <sub>I(on)</sub>	Input on voltage	I <sub>O</sub> =-5mA; V <sub>O</sub> =-0.3V	–	–	-1.3	V
V <sub>O(on)</sub>	Output voltage	I <sub>O</sub> =-5mA; I <sub>I</sub> =-0.25mA	–	-0.1	-0.3	V
I <sub>I</sub>	Input current	V <sub>I</sub> =-5V	–	–	-1.8	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	80	–	–	
R <sub>1</sub>	Input resistor		3.29	4.7	6.11	KΩ
R <sub>2/R<sub>1</sub></sub>	Resistor ratio		8	10	12	
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>≤300uS; δ≤0.02.

### CHDTC143Z 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> =5.0V	0.5	–	–	V
V <sub>I(on)</sub>	Input on voltage	I <sub>O</sub> =5mA; V <sub>O</sub> =0.3V	–	–	1.3	V
V <sub>O(on)</sub>	Output voltage	I <sub>O</sub> =5mA; I <sub>I</sub> =0.25mA	–	0.1	0.3	V
I <sub>I</sub>	Input current	V <sub>I</sub> =5V	–	–	1.8	mA
I <sub>O(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	80	–	–	
R <sub>1</sub>	Input resistor		3.29	4.7	6.11	KΩ
R <sub>2/R<sub>1</sub></sub>	Resistor ratio		8.0	10	12	
f <sub>T</sub>	Transition frequency	I <sub>E</sub> =-5mA, V <sub>CE</sub> =10.0V f=100MHz	–	250	–	MHz

#### Note

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

## RATING CHARACTERISTIC CURVES ( CHUMD22PT)

### CHDTA143Z Typical Electrical Characteristics

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

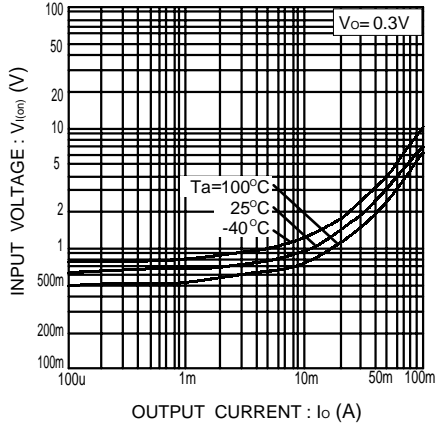


Fig.2 Output current vs. input voltage (OFF characteristics)

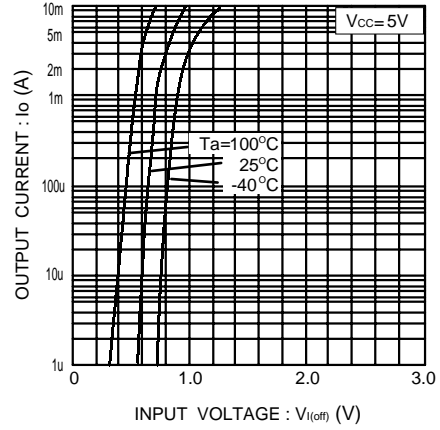


Fig.3 DC current gain vs. output current

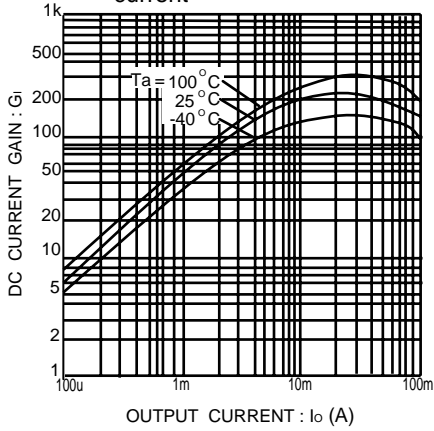
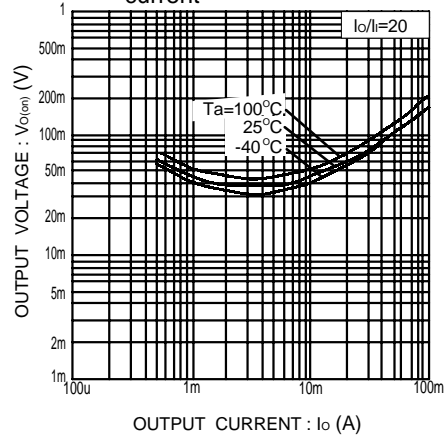


Fig.4 Output voltage vs. output current



## RATING CHARACTERISTIC CURVES ( CHUMD22PT)

### CHDTC143Z Typical Electrical Characteristics

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

