CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

Dual Digital Silicon Transistor

CHUMD4PT

Lead free devices

DTr1:VOLTAGE 50 Volts CURRENT 50 mAmpere
DTr2:VOLTAGE 50 Volts CURRENT 70 mAmpere

APPLICATION

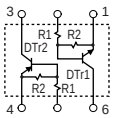
* Switching circuit, Inverter, Interface circuit, Driver circuit.

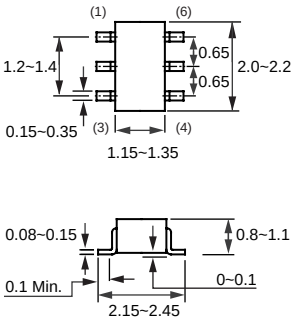
FEATURE

* Small surface mounting type. (SC-88/SOT-363)
* High current gain.
* Suitable for high packing density.
* Low colloector-emitter saturation.
* High saturation current capability.
* Both the CHDTA114Y & CHDTC144E in one package.
* Built in bias resistor(R1=10kΩ, Typ.)

SC-88/SOT-363

CIRCUIT





Dimensions in millimeters

SC-88/SOT-363

CHDTC114E 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	+40	V
I_O	DC Output current		–	50	mA
$I_{C(Max.)}$			–	100	
P_{TOT}	Total power dissipation	$T_{amb} \leq 25\ ^{o}C$, Note 1	–	150	mW
T_{STG}	Storage temperature		–55	+150	^{o}C
T_J	Junction temperature		–	150	^{o}C
$R\theta_{J-S}$	Thermal resistance	junction - soldering point	–	140	$^{o}C/W$

Note

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

CHDTA114Y 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		-40	+6	V
I_O	DC Output current		–	-70	mA
$I_{C(Max.)}$			–	-100	
P_{TOT}	Total power dissipation	$T_{amb} \leq 25\ ^{o}C$, Note 1	–	150	mW
T_{STG}	Storage temperature		–55	+150	^{o}C
T_J	Junction temperature		–	150	^{o}C
$R\theta_{J-S}$	Thermal resistance	junction - soldering point	–	140	$^{o}C/W$

Note

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

CHDTC114E CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{Ioff)}$	Input off voltage	I_O=100uA; V_{CC}=5.0V	0.5	–	–	V
$V_{I(on)}$	Input on voltage	I_O=10mA; V_O=0.3V	–	–	3.0	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	–	–	0.88	mA
$I_{C(off)}$	Output current	V_I=0V; V_{CC}=50V	–	–	0.5	uA
h_{FE}	DC current gain	I_O=5mA; V_O=5.0V	30	–	–	
R_1	Input resistor		7.0	10.0	13.0	KΩ
R_2/R_1	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: tp≤300uS; δ≤0.02.

CHDTA114Y CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{Ioff)}$	Input off voltage	I_O=-100uA; V_{CC}=-5.0V	-0.3	–	–	V
$V_{I(on)}$	Input on voltage	I_O=-1.0mA; V_O=-0.3V	–	–	-1.4	V
$V_{O(on)}$	Output voltage	I_O=-5mA; I_I=-0.25mA	–	-0.1	-0.3	V
I_I	Input current	V_I=-5.0V	–	–	-0.88	mA
$I_{C(off)}$	Output current	V_I=0V; V_{CC}=-50V	–	–	-0.5	uA
h_{FE}	DC current gain	I_O=-5.0mA; V_O=-5.0V	68	–	–	
R_1	Input resistor		7.0	10.0	13.0	KΩ
R_2/R_1	Resistor ratio		3.7	4.7	5.7	
f_T	Transition frequency	I_C=-5mA, V_{CE}=-10.0V f=100MHz	–	250	–	MHz

Note

1.Pulse test: tp≤300uS; δ≤0.02.

RATING CHARACTERISTIC CURVES (CHUMD4PT)

CHDTC114E Typical Electrical Characteristics

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

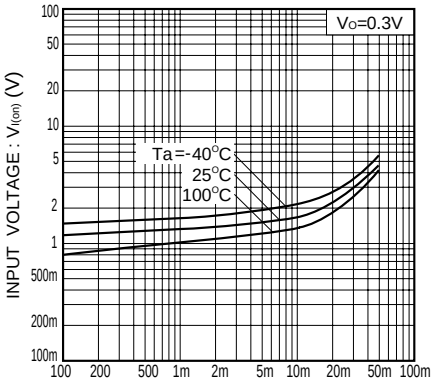


Fig.2 Output current vs. input voltage (OFF characteristics)

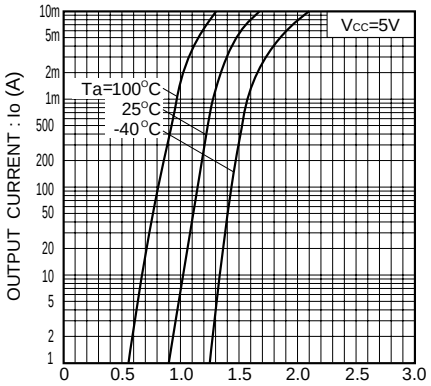


Fig.3 DC current gain vs. output current

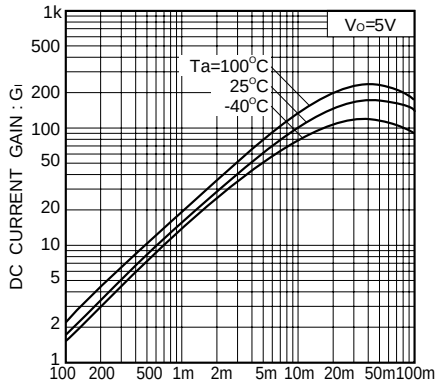
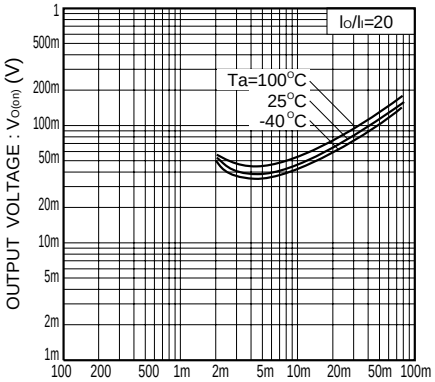


Fig.4 Output voltage vs. output current



RATING CHARACTERISTIC CURVES (CHUMD4PT)

CHDTA114Y Typical Electrical Characteristics

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

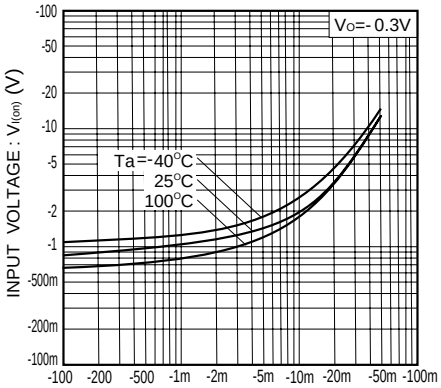


Fig.2 Output current vs. input voltage (OFF characteristics)

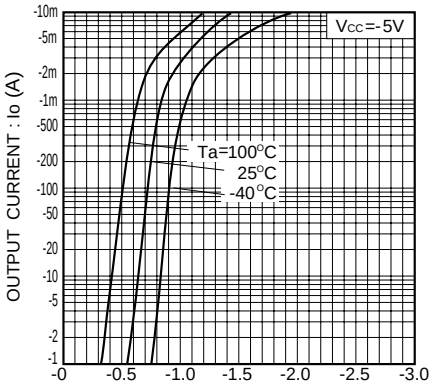


Fig.3 DC current gain vs. output current

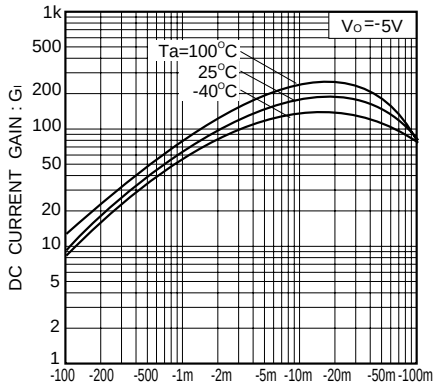


Fig.4 Output voltage vs. output current