



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

CHEMD37PT

Dual Digital Silicon Transistor

DTr1: VOLTAGE 50 Volts CURRENT 70 mAmpere

DTr2: VOLTAGE 50 Volts CURRENT 50 mAmpere

Lead free devices

APPLICATION

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

FEATURE

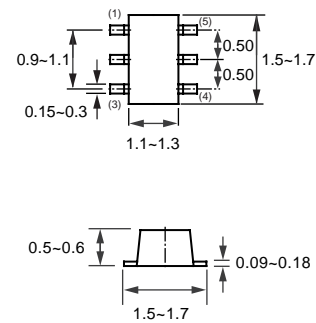
- * Small surface mounting type. (SOT-563)
- * High current gain.
- * Suitable for high packing density.
- * Low collector-emitter saturation.
- * High saturation current capability.

MARKING

* 37



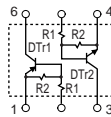
SOT-563



Dimensions in millimeters

SOT-563

CIRCUIT



DTr1 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} ≤ 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

2005-10

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

DTr2 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} ≤ 25 °C, Note 1	–	150	mW
T _{STG}	Storage temperature		-55	+150	°C
T _J	Junction temperature		–	150	°C

Note

Transistor mounted on an FR4 printed-circuit board.

DTr1 CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{I(off)}	Input off voltage	I _O =-100uA; V _{CC} =-5.0V	-0.3	–	–	V
V _{I(on)}	Input on voltage	I _O =-10mA; V _O =-0.3V	–	–	-2.5	V
V _{O(on)}	Output voltage	I _O =-30mA; I _I =-1.5mA	–	–	-0.3	V
I _I	Input current	V _I =-5.0V	–	–	-0.70	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	140	–	–	
R ₁	Input resistor		7.0	10.0	13.0	KΩ
R _{2/R₁}	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: t_p ≤ 300uS; δ ≤ 0.02.

DTr2 CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{I(off)}	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/R₁}	Resistor ratio		0.8	1.0	1.2	
f _T	Transition frequency	I _E =-5mA, V _{CE} =10.0V f=100MHz	–	250	–	MHz

Note

Pulse test: t_p ≤ 300uS; δ ≤ 0.02.