



CHENMKO ENTERPRISE CO.,LTD

CHDTC663EUPT

Lead free devices

**SURFACE MOUNT
NPN Digital Silicon Transistor**

VOLTAGE 20 Volts CURRENT 600 mAmpere

APPLICATION

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

FEATURE

- * Small surface mounting type. (SC-70/SOT-323)
- * In addition to the features of regular digital transistor.
V_{CE(sat)}=40mV at I_C/I_B=50mA/2.5mA, makes these transistors ideal for muting circuits.
- * These transistors can be used at high current levels, I_C=600mA
- * Internal isolated NPN transistors in one package.
- * Built in single resistor (R₁=6.8kΩ, Typ.)

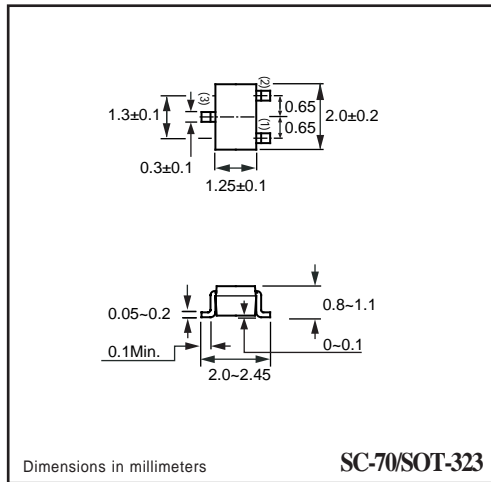
CONSTRUCTION

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

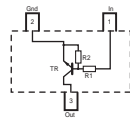
MARKING



SC-70/SOT-323



CIRCUIT



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CC}	Supply voltage		-	20	V
V _{IN}	Input voltage		-20	+20	V
I _C	DC Output current		-	600	mA
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

Note

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

RATING CHARACTERISTIC (CHDTC663EUP)

CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{loff}	Input off voltage	$I_o=100\mu\text{A}; V_{cc}=5.0\text{V}$	0.5	–	–	V
$V_{l(on)}$	Input on voltage	$I_o=10\text{mA}; V_o=0.3\text{V}$	–	–	2.0	V
$V_{O(on)}$	Output voltage	$I_o=50\text{mA}; I_i=2.5\text{mA}$	–	–	150	mV
I_i	Input current	$V_i=5\text{V}$	–	–	0.9	mA
$I_{o(off)}$	Output current	$V_i=0\text{V}; V_{cc}=20\text{V}$	–	–	0.5	μA
G_i	DC current transfer ratio	$I_o=50\text{mA}; V_o=5.0\text{V}$	250	–	550	
R_1	Input resistor		4.76	6.8	8.84	$\text{K}\Omega$
R_2/R_1	Resistor ratio		0.8	1.0	1.2	
f_T	Transition frequency	$I_E=-50\text{mA}, V_{CE}=10.0\text{V}$ $f=100\text{MHz}$	–	150	–	MHz
R_{ON}	Output "ON" resistance	$V_i=5\text{V}, R_L=1\text{K}\Omega, f=1\text{KHz}$	–	0.9	–	Ω

Note

1. Pulse test: $t_p \leq 300\mu\text{s}; \delta \leq 0.02$.

RATING CHARACTERISTIC CURVES (CHDTC663EUP)

Typical Electrical Characteristics

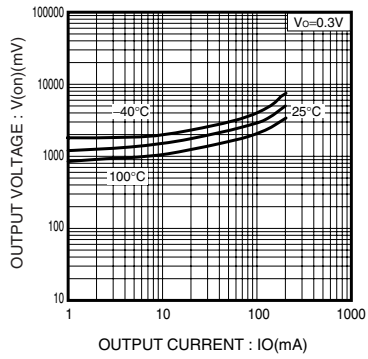


Fig.1 Input Voltage vs. Output Current(On characteristics)

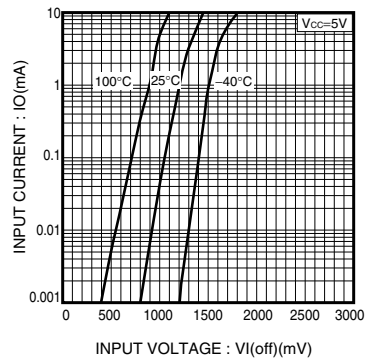


Fig.2 Output Current vs. Input Voltage(Off characteristics)

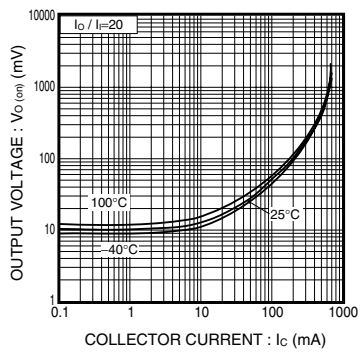


Fig.4 Output Voltage vs. Output Current

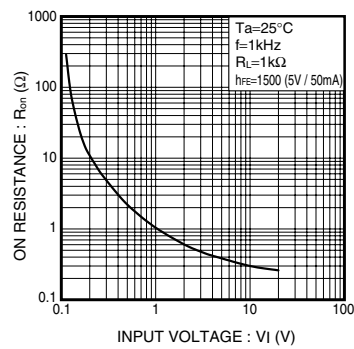


Fig.5 "ON" resistance vs. Input Voltage

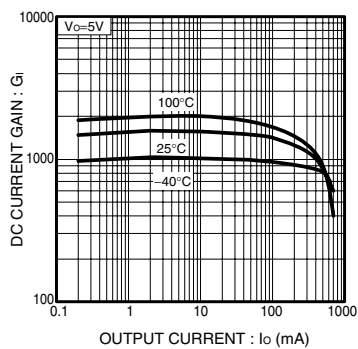


Fig.3 DC Current Gain vs. Output Current