

Transistors

IMH22

Dual digital transistors

IMH22**●Features**

In addition to the features of regular digital transistors.

1) Low saturation voltage, typically

$V_{CE(sat)} = 40mV$ at $I_C / I_B = 50mA / 2.5mA$, makes these transistors ideal for muting circuits.

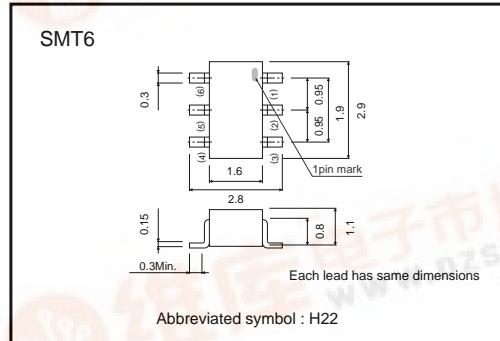
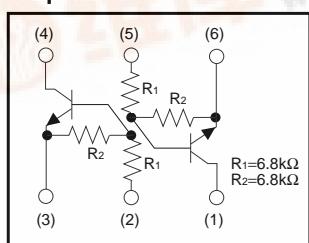
2) These transistors can be used at high current levels, $I_C = 600mA$.

3) Two DTC663E chips in a SMT package.

●Structure

NPN digital transistor

(Built-in resistor type)

●External dimensions (Unit : mm)**●Equivalent circuit****●Absolute maximum ratings ($T_a=25^\circ C$)**

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	20	V
Input voltage	V_{IN}	-20 to +20	V
Output current	I_C	600	V
Power dissipation	P_d	300(TOTAL)	mW *
Junction temperature	T_j	150	°C
Storage temperature	T_{STG}	-55 to +150	°C

* 200mW per element must not be exceeded.

Transistor

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(OFF)}	—	—	0.5	V	V _{CC} =5V, I _O =100μA
	V _{I(ON)}	2	—	—		V _O =0.3V, I _O =10mA
Output voltage	V _{O(ON)}	—	—	150	mV	I _O /I _I =50mA/2.5mA
Input current	I _I	—	—	1.3	mA	V _I =5V
Output current	I _{O(OFF)}	—	—	0.5	μA	V _{CC} =20V, V _I =0V
DC current gain	G ₁	250	—	—	—	V _O =5V, I _O =50mA
Input resistance	R _I	4.76	6.8	8.84	kΩ	—
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	—	—
Transition frequency	f _T	—	150	—	MHz	V _{CE} =10V, I _E =-50mA, f=100MHz *
Output "ON" resistance	R _{on}	—	0.9	—	Ω	V _I =5V, R _L =1kΩ, f=1kHz

*Transition frequency of the device.

●Packaging specifications and h_{FE}

Type	Package	SMT6
	Packaging type	Taping
	Code	T110
	Basic ordering unit (pieces)	3000
IMH22		○

●Electrical characteristic curves

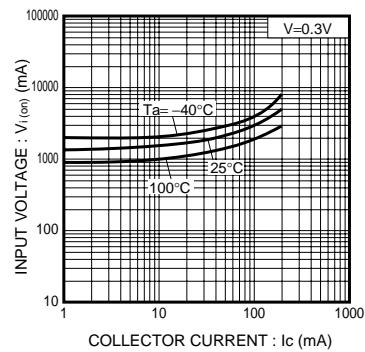


Fig.1 Input voltage vs. output current (ON characteristics)

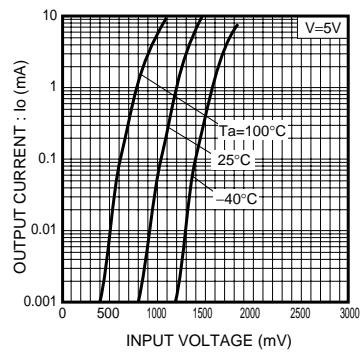


Fig.2 Output current vs. input voltage (OFF characteristics)

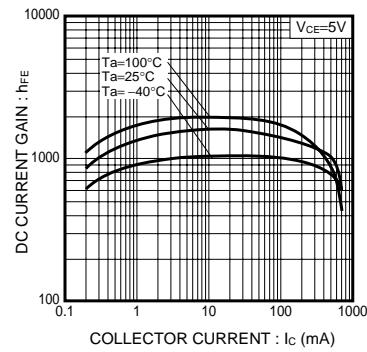


Fig.3 DC current gain vs. output current characteristics

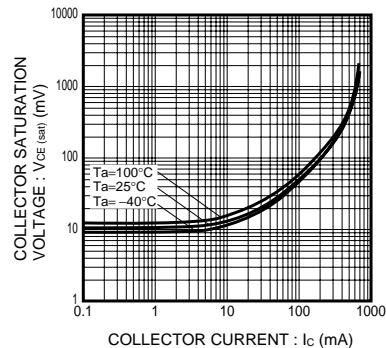


Fig.4 Output voltage vs. output current characteristics

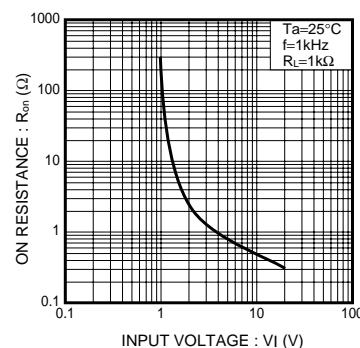


Fig.5 "ON" characteristics vs. input voltage characteristics

Transistor

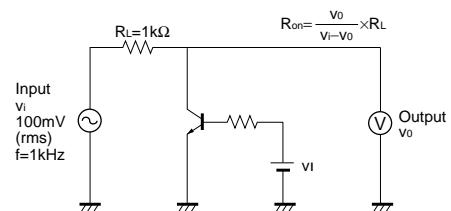
● R_{on} measurement circuit

Fig.4 Output "ON" resistance (R_{on}) measurement circuit

Appendix

Notes

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