Dual digital transistors

IMH22

●Features

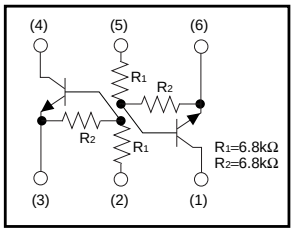
In addition to the features of regular digital transistors.

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.

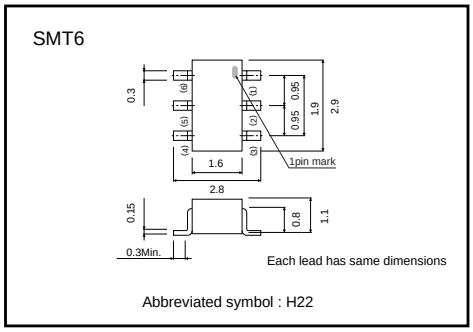
●Structure

NPN digital transistor
(Built-in resistor type)

●Equivalent circuit



●External dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°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	Pd	300(TOTAL)	mW *
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

* 200mW per element must not be exceeded.

●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 ersistance	R_1	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
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●Electrical characteristic curves

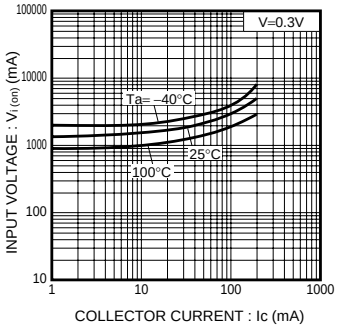

Fig.1 Input voltage vs. output current (ON characteristics)

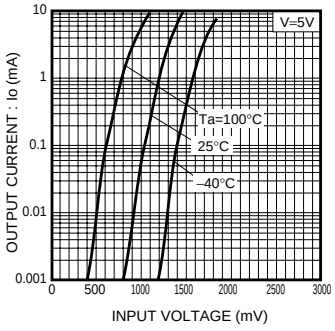

Fig.2 Output current vs. input voltage (OFF characteristics)

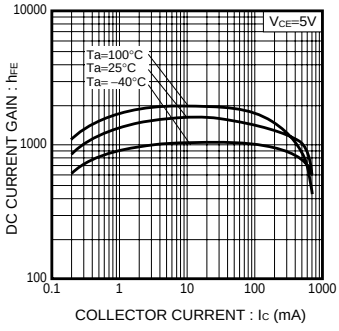

Fig.3 DC current gain vs. output current characteristics

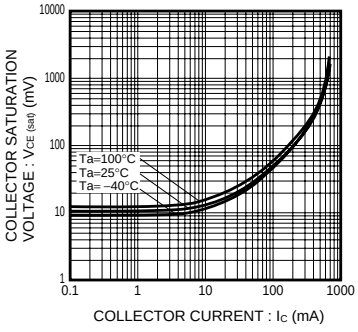

Fig.4 Output voltage vs. output curent characteristics

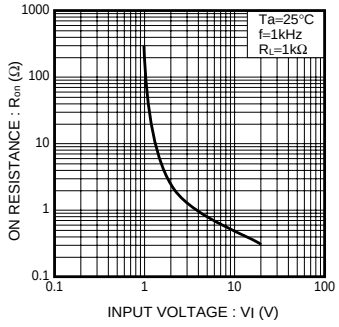

Fig.5 "ON" characteristics vs. input voltage characteristics

●**R_{on} measurement circuit**

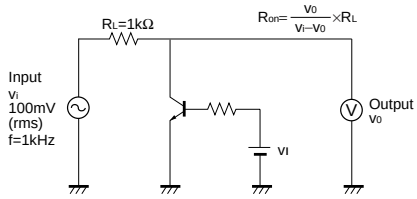

Fig.4 Output "ON" resistance (R_{on}) measurement circuit

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