General purpose (dual digital transistors)

EMH10 / UMH10N

●Structure
Epitaxial planar type
NPN silicon transistor
(Built-in resistor type)

●Features
1) Two DTC123J chips in a EMT or UMT package.
2) Mounting possible with EMT3 or UMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

●Packaging specifications

Type	Package	Taping	
	Code	T2R	TN
	Basic ordering unit (pieces)	8000	3000
EMH10		○	–
UMH10N		–	○

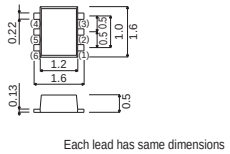
●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Supply voltage		V_{CC}	50	V
Input voltage		V_{IN}	12	V
			–5	
Output current		I_O	100	mA
		I_C (Max.)	100	mA
Power dissipation	EMH10,UMH10N	Pd	150 (TOTAL)	mW *
Junction temperature		Tj	150	°C
Storage temperature		Tstg	–55~+150	°C

∗ 120mW per element must not be exceeded.

●Dimensions (Unit : mm)

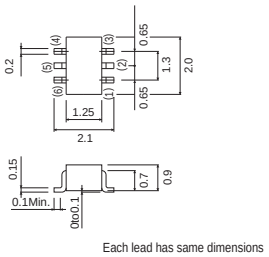
EMH10



Abbreviated symbol : H10

ROHM : EMT6

UMH10N

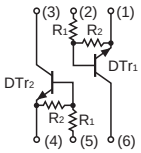


ROHM : UMT6
EIAJ : SC-88

Abbreviated symbol : H10

●Equivalent circuit

EMH10 / UMH10N



R_1=2.2kΩ
R_2=47kΩ

●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
	$V_{I(on)}$	1.1	–	–		V_O=0.3V, I_O=5mA
Output voltage	$V_{O(on)}$	–	0.1	0.3	V	I_O/I_I=5mA/0.25mA
Input current	I_I	–	–	3.6	mA	V_I=5V
Output current	$I_{O(off)}$	–	–	0.5	μA	V_{CC}=50V, V_I=0V
DC current gain	G_I	80	–	–	–	V_O=5V, I_O=10mA
Transition frequency	f_T	–	250	–	MHz	V_{CE}=10V, I_E= –5mA, f=100MHz ∗
Input resistance	R_1	1.54	2.2	2.86	kΩ	–
Resistance ratio	R_2/R_1	17	21	26	–	–

∗ Transition frequency of the device

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●Electrical characteristic curves

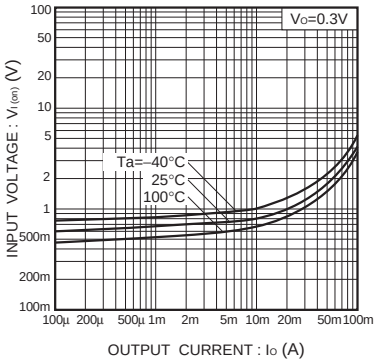

Fig.1 Input voltage vs. output current (ON characteristics)

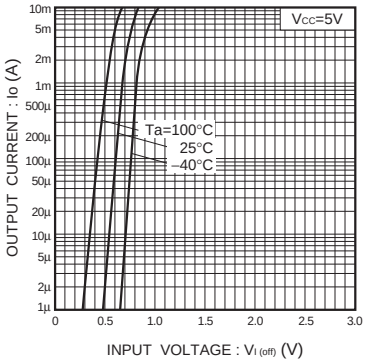

Fig.2 Output current vs. input voltage (OFF characteristics)

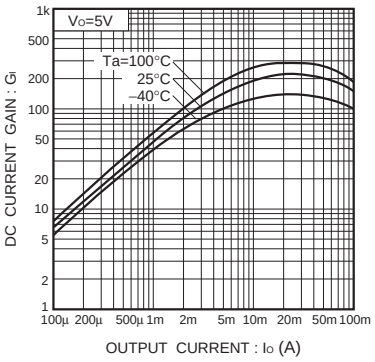

Fig.3 DC current gain vs. output current

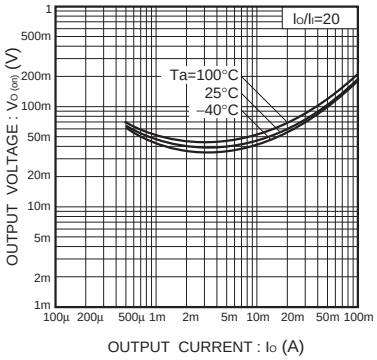

Fig.4 Output voltage vs. output current

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