

General purpose (dual digital transistors)

EMH10 / UMH10N / IMH10A

●Features

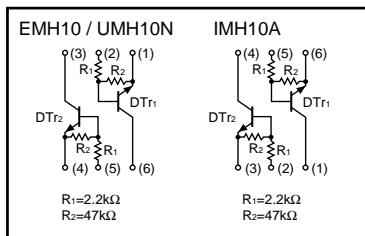
- 1) Two DTC123J chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both DT_{r1} and DT_{r2}.

●Equivalent circuit



●External dimensions (Units : mm)

EMH10		Each lead has same dimensions
ROHM : EMT6	Abbreviated symbol : H10	
UMH10N		
ROHM : UMT6 EIAJ : SC-88	Abbreviated symbol : H10	Each lead has same dimensions
IMH10A		
ROHM : SMT6 EIAJ : SC-74	Abbreviated symbol : H10	Each lead has same dimensions

●Packaging specifications

Type	Package	Taping		
		T2R	TN	T110
		Basic ordering unit (pieces)	8000	3000
EMH10		○	—	—
UMH10N		—	○	—
IMH10A		—	—	○

EMH10 / UMH10N / IMH10A

Transistors

● Absolute maximum ratings ($T_a=25^\circ\text{C}$)

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	P_d	150 (TOTAL)	mW *1
	IMH10A		300 (TOTAL)	
Storage temperature		T_{STG}	-55~+150	°C

*1 120mW per element must not be exceeded.

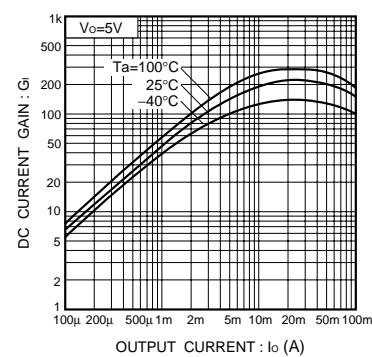
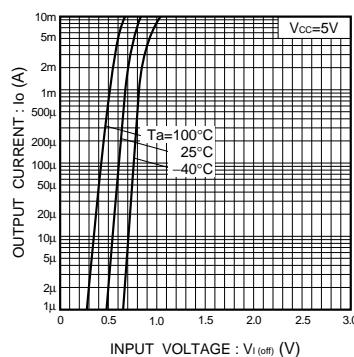
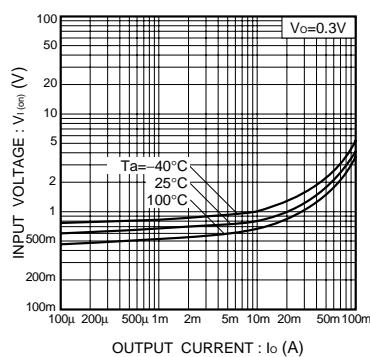
*2 200mW per element must not be exceeded.

● Electrical characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(\text{off})}$	—	—	0.5	V	$V_{CC}=5\text{V}$, $I_O=100\mu\text{A}$
	$V_{I(\text{on})}$	1.1	—	—		$V_O=0.3\text{V}$, $I_O=5\text{mA}$
Output voltage	$V_O(\text{on})$	—	0.1	0.3	V	$I_O/I_I=5\text{mA}/0.25\text{mA}$
Input current	I_I	—	—	3.6	mA	$V_I=5\text{V}$
Output current	$I_O(\text{off})$	—	—	0.5	μA	$V_{CC}=50\text{V}$, $V_I=0\text{V}$
DC current gain	G_I	80	—	—	—	$V_O=5\text{V}$, $I_O=10\text{mA}$
Transition frequency	f_T	—	250	—	MHz	$V_{CE}=10\text{mA}$, $I_E=-5\text{mA}$, $f=100\text{MHz}$ *
Input resistance	R_I	1.54	2.2	2.86	kΩ	—
Resistance ratio	R_2/R_1	17	21	26	—	—

* Transition frequency of the device

● Electrical characteristic curves



Transistors

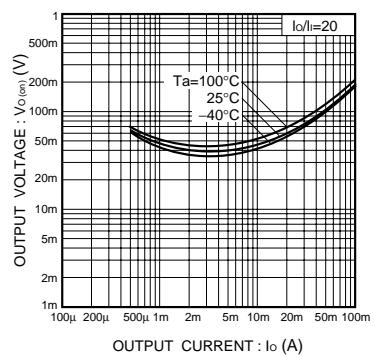


Fig.4 Output voltage vs. output current