

# General purpose (dual digital transistors)

## EMH10 / UMH10N / IMH10A

**●Features**

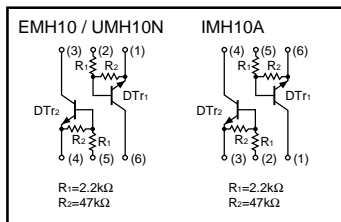
- 1) Two DTC123J chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

**●Structure**

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

The following characteristics apply to both DT<sub>r1</sub> and DT<sub>r2</sub>.

**●Equivalent circuit**



**●Packaging specifications**

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

**●External dimensions (Units : mm)**

**EMH10**

Abbreviated symbol : H10  
 ROHM : EMT6

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**UMH10N**

Abbreviated symbol : H10  
 ROHM : UMT6  
 EIAJ : SC-88

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**IMH10A**

Abbreviated symbol : H10  
 ROHM : SMT6  
 EIAJ : SC-74

Transistors

● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit		
Supply voltage	V <sub>CC</sub>	50	V		
Input voltage	V <sub>IN</sub>	12	V		
		-5			
Output current	I <sub>O</sub>	100	mA		
	I <sub>C (Max.)</sub>	100	mA		
Power dissipation	EMH10,UMH10N IMH10A	P <sub>d</sub>	150 (TOTAL)	mW	*1
			300 (TOTAL)		
Storage temperature	T <sub>stg</sub>	-55~+150	°C		

\*1 120mW per element must not be exceeded.  
\*2 200mW per element must not be exceeded.

● Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>I (off)</sub>	-	-	0.5	V	V <sub>CC</sub> =5V, I <sub>O</sub> =100μA
	V <sub>I (on)</sub>	1.1	-	-		V <sub>O</sub> =0.3V, I <sub>O</sub> =5mA
Output voltage	V <sub>O (on)</sub>	-	0.1	0.3	V	I <sub>O</sub> /I <sub>I</sub> =5mA/0.25mA
Input current	I <sub>I</sub>	-	-	3.6	mA	V <sub>I</sub> =5V
Output current	I <sub>O (off)</sub>	-	-	0.5	μA	V <sub>CC</sub> =50V, V <sub>I</sub> =0V
DC current gain	G <sub>I</sub>	80	-	-	-	V <sub>O</sub> =5V, I <sub>O</sub> =10mA
Transition frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =10mA, I <sub>E</sub> =-5mA, f=100MHz *
Input resistance	R <sub>I</sub>	1.54	2.2	2.86	kΩ	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	17	21	26	-	-

\* Transition frequency of the device

● Electrical characteristic curves

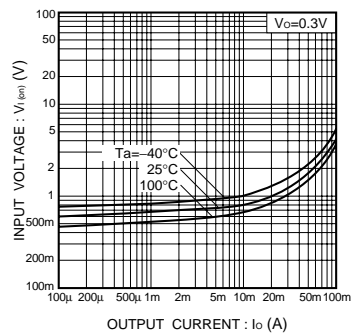


Fig.1 Input voltage vs. output current (ON characteristics)

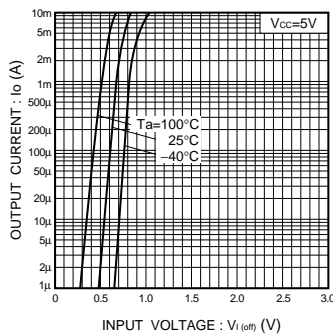


Fig.2 Output current vs. input voltage (OFF characteristics)

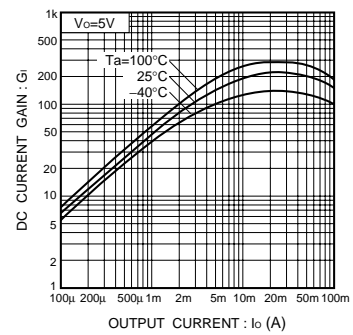


Fig.3 DC current gain vs. output current

## Transistors

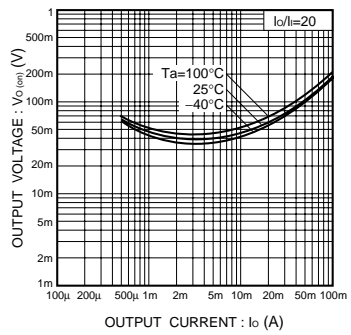


Fig.4 Output voltage vs. output current