

General purpose (dual digital transistors)

UMH2N / IMH2A

●Features

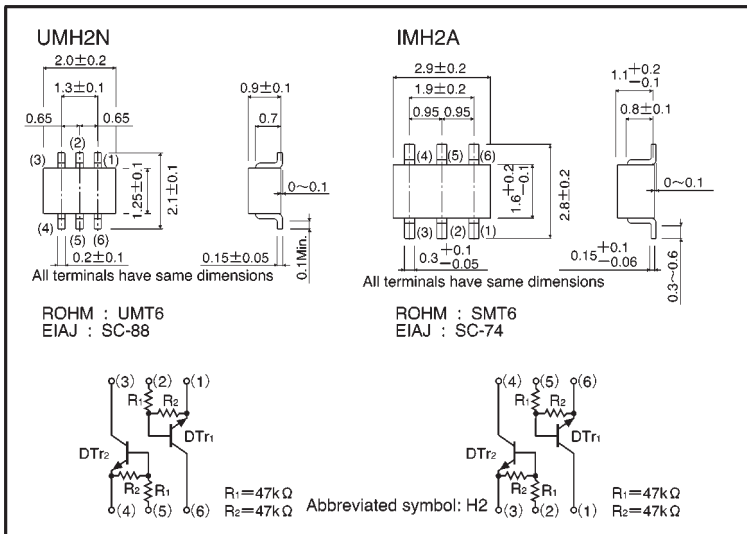
- 1) Two DTC144Es chips in a UMT or SMT package.
- 2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both DTr₁ and DTr₂.

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Supply voltage		V _{CC}	50	V
Input voltage		V _{IN}	40	V
			-10	
Output current		I _O	30	mA
		I _{C(Max.)}	100	
Power dissipation	UMH2N	P _d	150 (TOTAL)	mW
	IMH2A		300 (TOTAL)	
Junction temperature		T _j	150	°C
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 (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	—	—	0.5	V	$V_{CC}=5V, I_o=100\mu A$
	$V_{I(on)}$	3	—	—		$V_o=0.3V, I_o=2mA$
Output voltage	$V_{O(on)}$	—	0.1	0.3	V	$I_o/I_i=10mA/0.5mA$
Input current	I_i	—	—	0.18	mA	$V_i=5V$
Output current	$I_{O(off)}$	—	—	0.5	μA	$V_{CC}=50V, V_i=0V$
DC current gain	G_i	68	—	—	—	$V_o=5V, I_o=5mA$
Transition frequency	f_r	—	250	—	MHz	$V_{CE}=10mA, I_E=-5mA, f=100MHz*$
Input resistance	R_i	32.9	47	61.1	k Ω	—
Resistance ratio	R_2/R_1	0.8	1	1.2	—	—

* Transition frequency of the device

●Packaging specifications

Part No.	Packaging type	Taping	
	Code	TN	T110
	Basic ordering unit (pieces)	3000	3000
UMH2N			—
IMH2A		—	

●Electrical characteristic curves

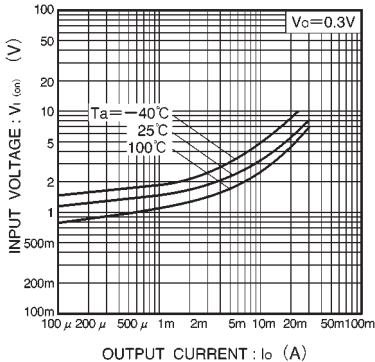


Fig.1 Input voltage vs. output current (ON characteristics)

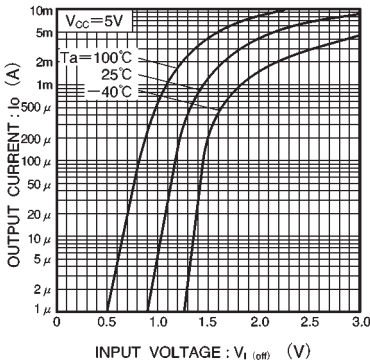


Fig.2 Output current vs. input voltage (OFF characteristics)

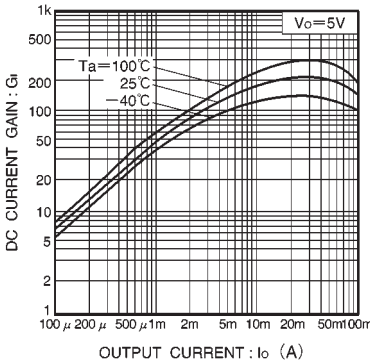


Fig.3 DC current gain vs. output current

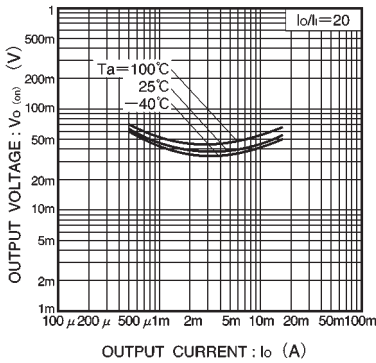


Fig.4 Output voltage vs. output current