

General purpose (dual digital transistors)

UMH11N/IMH11A

●Features

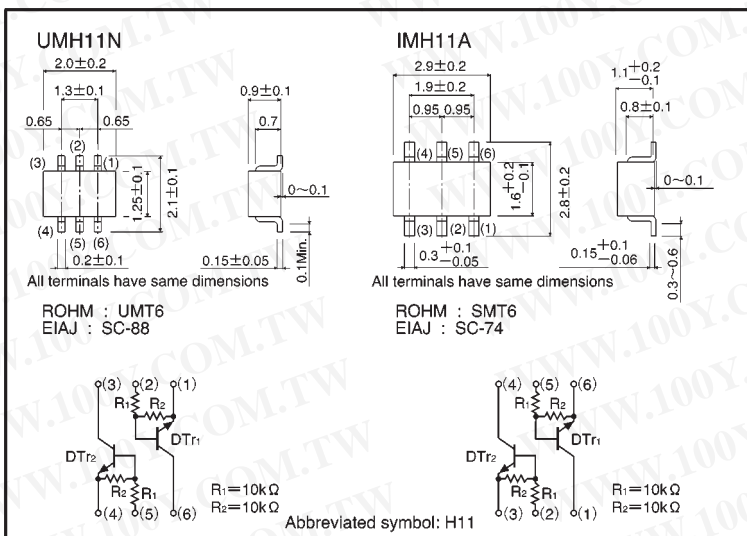
- 1) Two DTC114E chips in a UMT or SMT package.
- 2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

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

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

●External dimensions (Units: mm)



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

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	40 -10	V
Output current	I_o	50	mA
Collector current	$I_{C(\text{Max.})}$	100	mA
Power dissipation	UMH11N	150 (TOTAL)	mW *1
	IMH11A	300 (TOTAL)	mW *2
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

*1 120mW per element must not be exceeded.

*2 200mW per element must not be exceeded.

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●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	—	—		$V_o=0.3V$, $I_o=10mA$
Output voltage	$V_{O(on)}$	—	0.1	0.3	V	$I_o/I_i=10mA/0.5mA$
Input current	I_i	—	—	0.88	mA	$V_i=5V$
Output current	$I_{O(off)}$	—	—	0.5	μA	$V_{CC}=50V$, $V_i=0V$
DC current gain	G_i	30	—	—	—	$V_o=5V$, $I_o=5mA$
Transition frequency	f_T	—	250	—	MHz	$V_{CE}=10mA$, $I_E=-5mA$, $f=100MHz$ *
Input resistance	R_i	7	10	13	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
UMH11N		○	—
IMH11A		—	○

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●Electrical characteristic curves

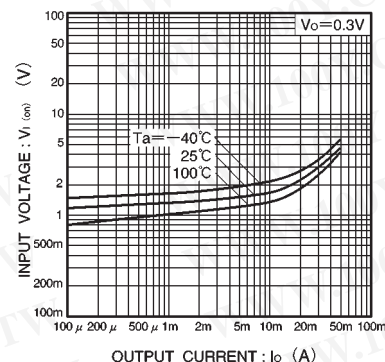


Fig.1 Input voltage vs. output current (ON characteristics)

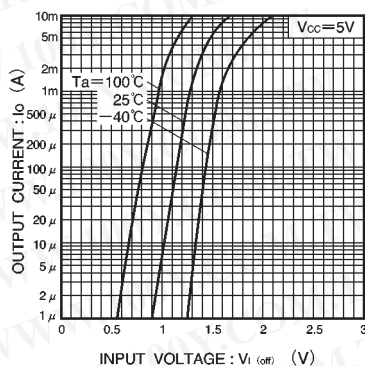


Fig.2 Output current vs. input voltage (OFF characteristics)

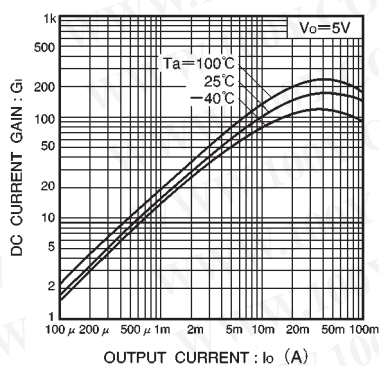


Fig.3 DC current gain vs. output current

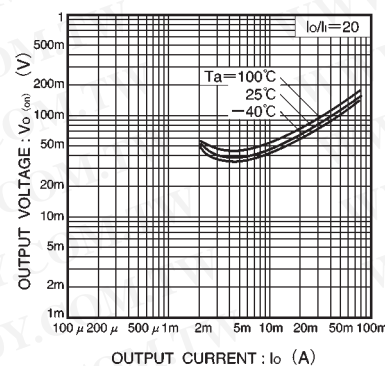


Fig.4 Output voltage vs. output current

Appendix

Notes

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