

## Transistors

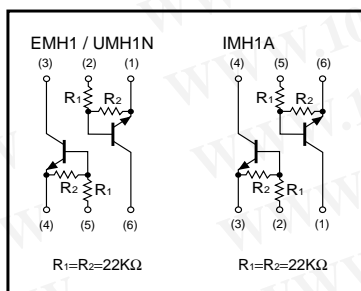
# General purpose (dual digital transistors)

## EMH1 / UMH1N / IMH1A

### ●Features

- Two DTC124E chips in a EMT or UMT or SMT package.

### ●Circuit schematic



### ●Absolute maximum ratings (Ta = 25°C)

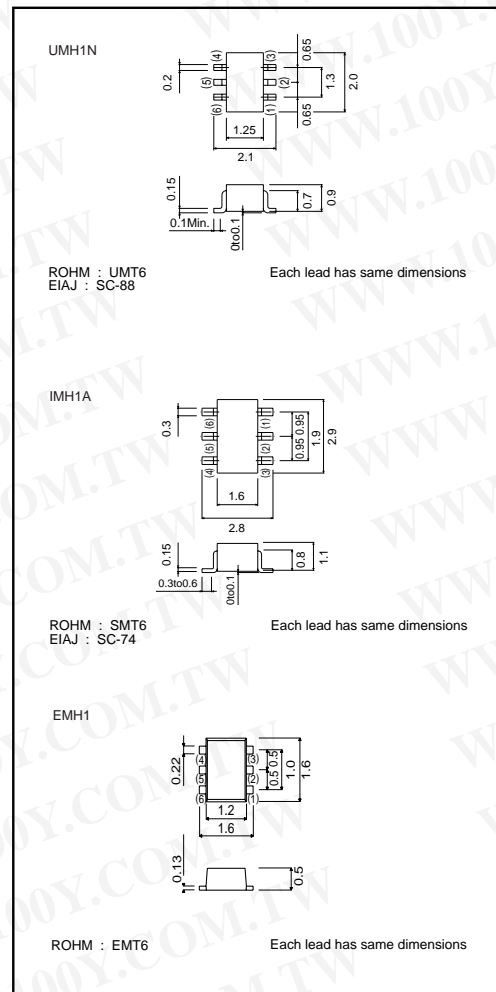
Parameter	Symbol	Limits	Unit
Supply voltage	$V_{CC}$	50	V
Input voltage	$V_{IN}$	40 -10	V
Output current	$I_O$	30	mA
Collector current	$I_{C(MAX)}$	100	mA
Power dissipation	$P_d$	150(TOTAL) 300(TOTAL)	mW *1 *2
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

### ●Package, marking, and packaging specifications

Type	EMH1	UMH1N	IMH1A
Package	EMT5	UMT6	SMT6
Marking	H1	H1	H1
Code	T2R	TN	T110
Basic ordering unit (pieces)	8000	3000	3000

### ●External dimensions (Unit : mm)



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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	—	—		$V_o=0.2V, I_o=5mA$
Output voltage	$V_{o(on)}$	—	0.1	0.3	V	$I_o=10mA, I_i=0.5mA$
Input current	$I_i$	—	—	0.36	mA	$V_i=5V$
Output current	$I_{o(off)}$	—	—	0.5	$\mu A$	$V_{cc}=50V, V_i=0V$
DC current gain	$G_i$	56	—	—	—	$V_o=5V, I_o=5mA$
Transition frequency	$f_T$	—	250	—	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *
Input resistance	$R_1$	15.4	22	28.6	k $\Omega$	—
Resistance ratio	$R_2/R_1$	0.8	1	1.2	—	—

\* Characteristics of built-in transistor

### ●Electrical characteristics curves

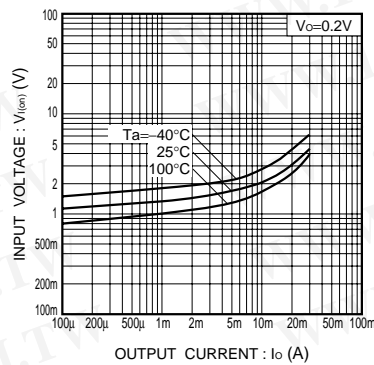


Fig.1 Input voltage vs. output current (ON characteristics)

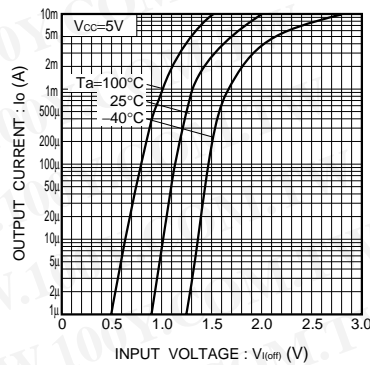


Fig.2 Output current vs. input voltage (OFF characteristics)

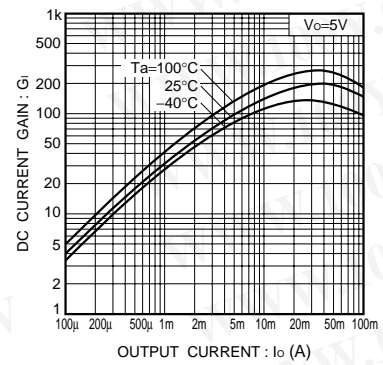


Fig.3 DC current gain vs. output current

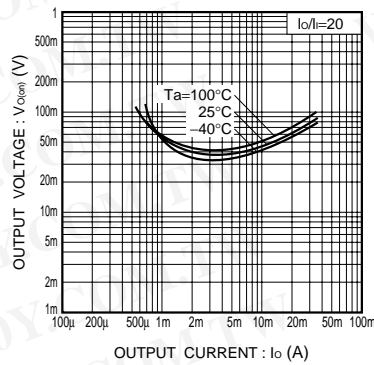


Fig.4 Output voltage vs. output current

## Appendix

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