

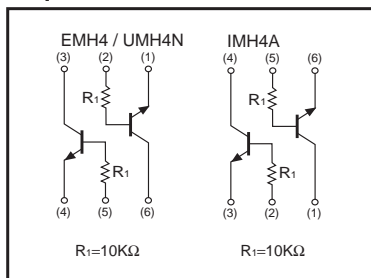
# General purpose (dual digital transistors)

## EMH4 / UMH4N / IMH4A

●Features

- Two DTC114T chips in a EMT or UMT or SMT package.

●Equivalent circuits



●Package, marking, and packaging specifications

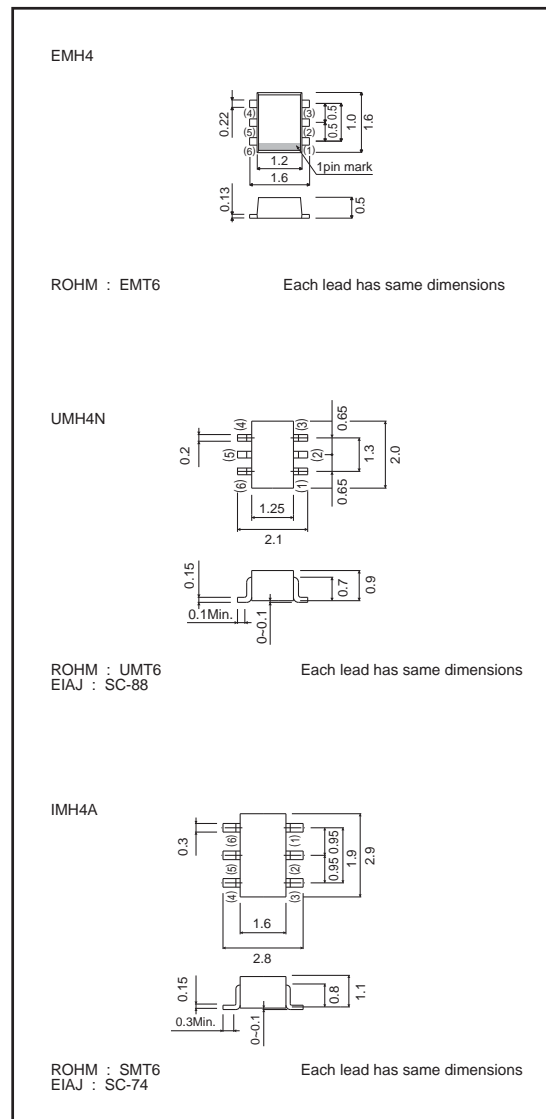
Type	EMH4	UMH4N	IMH4A
Package	EMT5	UMT6	SMT6
Marking	H4	H4	H4
Code	T2R	TN	T110
Basic ordering unit (pieces)	8000	3000	3000

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V <sub>CS0</sub>	50	V	
Collector-emitter voltage	V <sub>CE0</sub>	50	V	
Emitter-base voltage	V <sub>EB0</sub>	5	V	
Collector current	I <sub>c</sub>	100	mA	
Power dissipation	EMH4 / UMH4N IMH4A	Pd	150(TOTAL) 300(TOTAL)	mW <sup>*1</sup>
				<sup>*2</sup>
Junction temperature	T <sub>J</sub>	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	

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

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	50	–	–	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	50	–	–	V	$I_C=1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	5	–	–	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	–	–	0.5	$\mu A$	$V_{CB}=50V$
Emitter cutoff current	$I_{EBO}$	–	–	0.5	$\mu A$	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.3	V	$I_C/I_B=10mA/1mA$
DC current transfer ratio	$h_{FE}$	100	250	600	–	$V_{CE}=5V, I_C=1mA$
Transition frequency	$f_T$	–	250	–	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *
Input resistance	$R_1$	7	10	13	$k\Omega$	–

\*Transition frequency of the device.

●Electrical characteristics curves

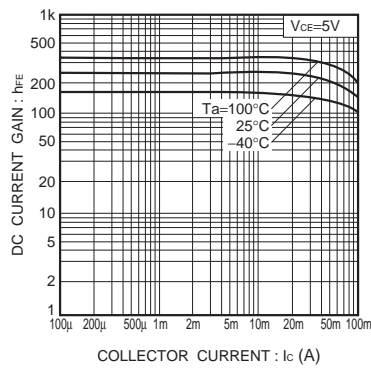


Fig.1 DC current gain vs. collector current

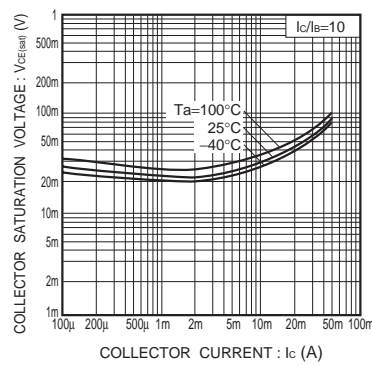


Fig.2 Collector-emitter saturation voltage vs. collector current

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