

# General purpose (dual digital transistors)

## EMH3 / UMH3N / IMH3A

### ●Features

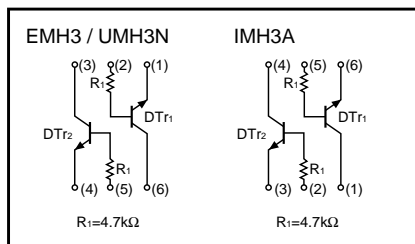
- 1) Two DTAK13Ts chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

### ●Structure

Epitaxial planar type  
NPN silicon transistor

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

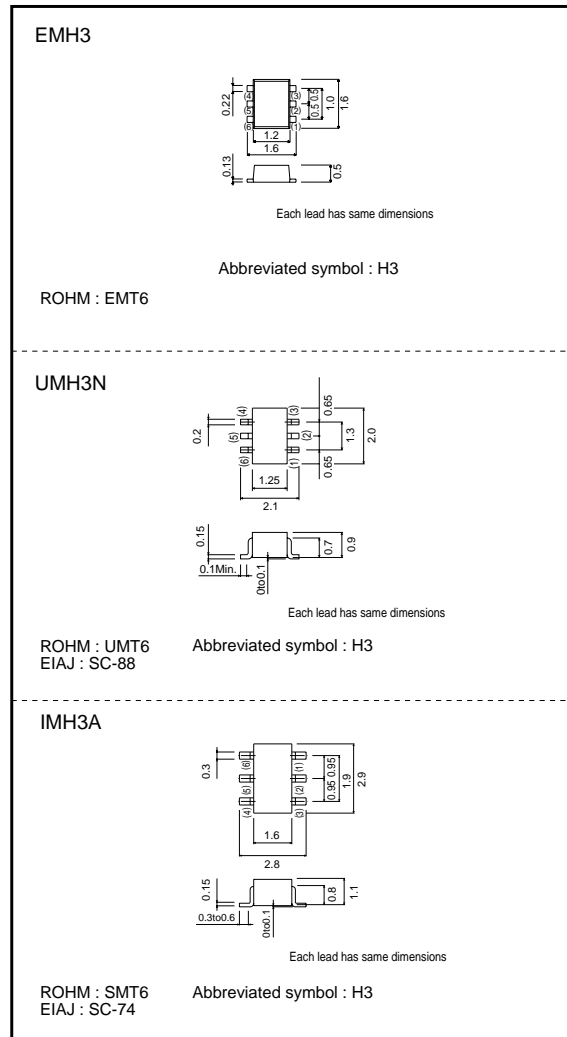
### ●Equivalent circuit



### ●Packaging specifications

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMH3		○	-	-
UMH3N		-	○	-
IMH3A		-	-	○

### ●External dimensions (Units : mm)



Transistors

● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	50	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
Collector power dissipation	EMH3,UMH3N	150 (TOTAL)	mW *1
	IMH3A	300 (TOTAL)	
Junction temperature	T <sub>j</sub>	150	°C
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
Collector-base breakdown voltage	BV <sub>CBO</sub>	50	—	—	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	50	—	—	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	5	—	—	V	I <sub>E</sub> =50μA
Collector cutoff current	I <sub>cBO</sub>	—	—	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EBO</sub>	—	—	0.5	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	0.3	V	I <sub>c</sub> /I <sub>B</sub> =5mA/0.25mA
DC current transfer ratio	h <sub>FE</sub>	100	250	600	—	V <sub>CE</sub> =5V, I <sub>c</sub> =1mA
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>	3.29	4.7	6.11	kΩ	—

\* Transition frequency of the device

● Electrical characteristic curves

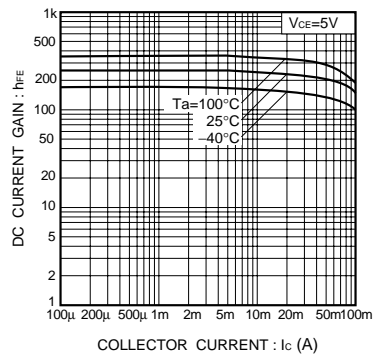


Fig.1 DC current gain vs. collector current

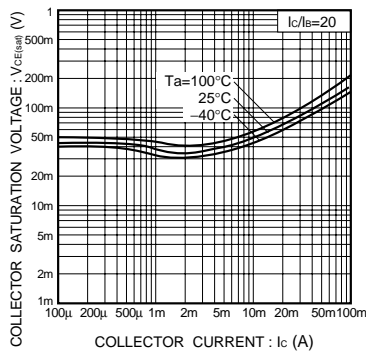


Fig.2 Collector-emitter saturation voltage vs. collector current