

General purpose (dual digital transistors)

EMH11 / UMH11N / IMH11A

●Features

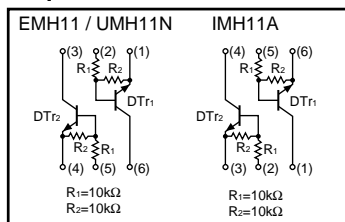
- 1) Two DTC114E chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

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

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

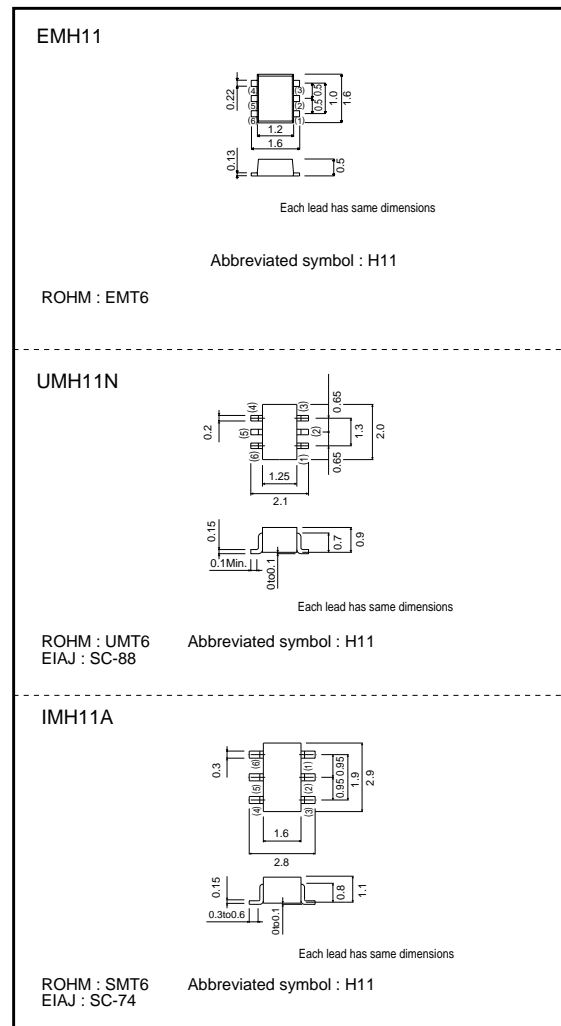
●Equivalent circuit



●Packaging specifications

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMH11		○	-	-
UMH11N		-	○	-
IMH11A		-	-	○

●External dimensions (Units : mm)



Transistors

● 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	50	mA	
Collector current	I _{C (Max.)}	100	mA	
Power dissipation	EMH11,UMH11N	Pd	150 (TOTAL)	mW
	IMH11A		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 =100μA
	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	kΩ	-
Resistance ratio	R ₂ /R ₁	0.8	1	1.2	-	-

* Transition frequency of the device

● Electrical characteristic curves

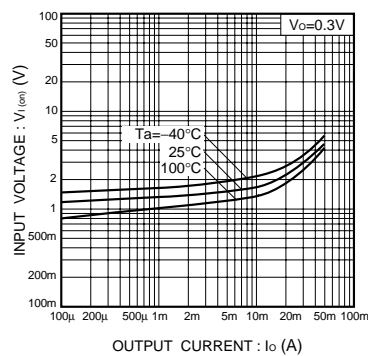


Fig.1 Input voltage vs. output current (ON characteristics)

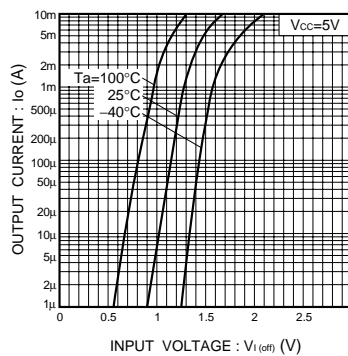


Fig.2 Output current vs. input voltage (OFF characteristics)

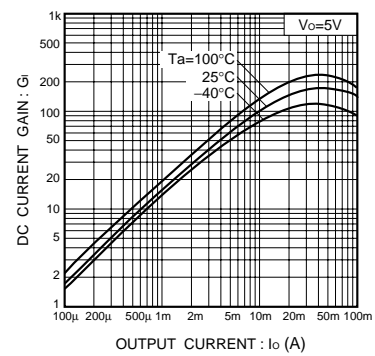


Fig.3 DC current gain vs. output current

Transistors

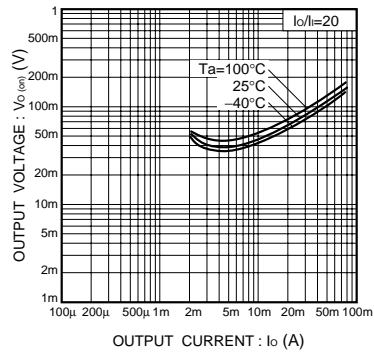


Fig.4 Output voltage vs. output current