

# General purpose (dual digital transistors)

## EMB3 / UMB3N / IMB3A

**●Features**

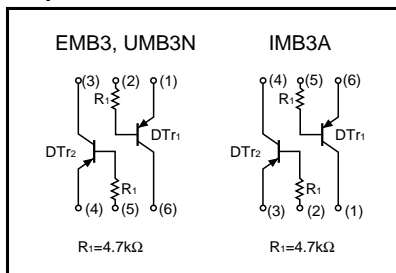
- 1) Two DTA143T chips in a EMT6 or UMT6 or SMT6 package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

**●Structure**

Dual PNP digital transistor  
(each with single built in resistor)

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

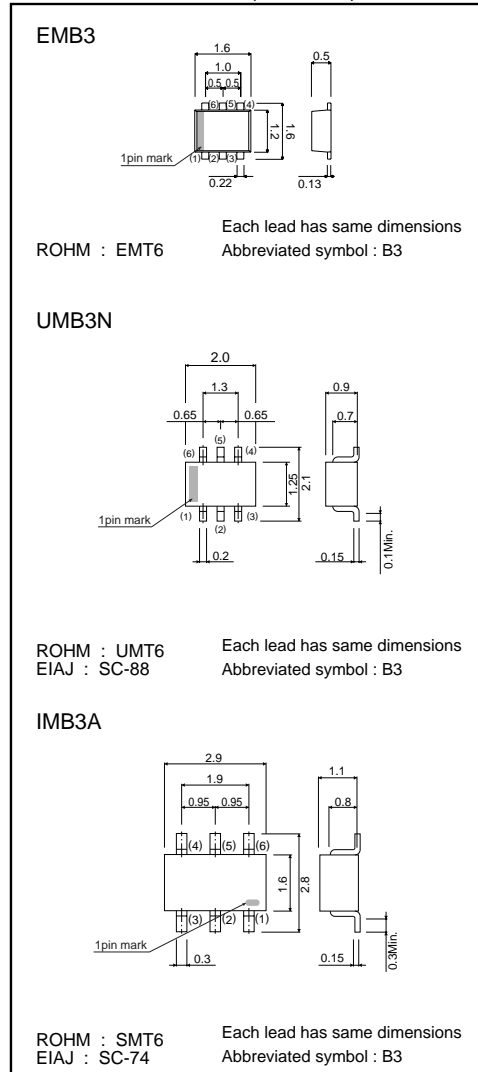
**●Equivalent circuit**



**●Packaging specifications**

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMB3		○	-	-
UMB3N		-	○	-
IMB3A		-	-	○

**●External dimensions (Unit : mm)**



Transistors

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit		
Collector-base voltage	V <sub>CB0</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	EMB3,UMB3N	P <sub>c</sub>	150 (TOTAL)	mW	*1
	IMB3A		300 (TOTAL)		
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.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV <sub>CB0</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>CB0</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/-2.5mA	
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

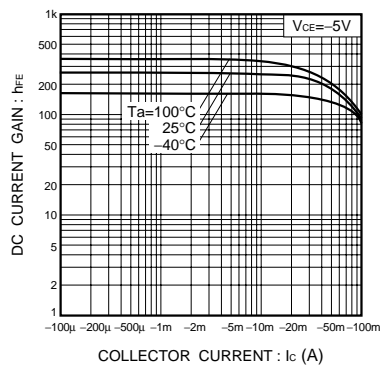


Fig.1 DC current gain vs. collector current

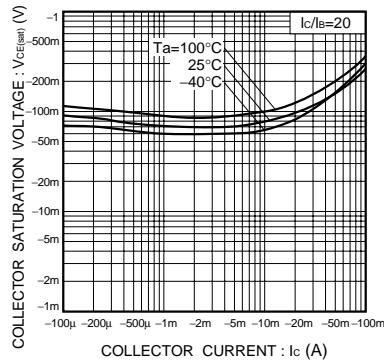


Fig.2 Collector-emitter saturation voltage vs. collector current

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