

# Emitter common (dual digital transistors)

## EMA3 / UMA3N / FMA3A

**●Features**

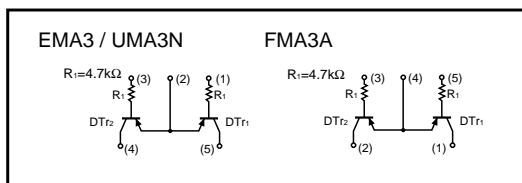
- 1) Two DTA143Ts in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

**●Structure**

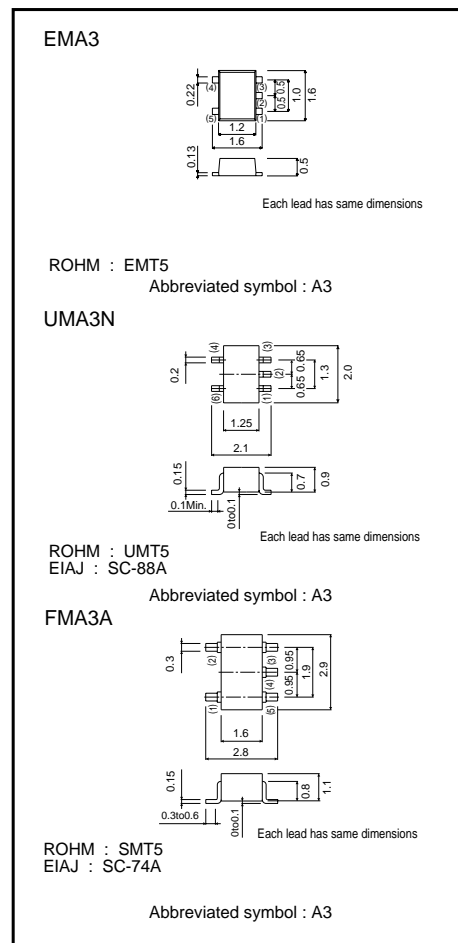
Epitaxial planar type PNP silicon transistor (Built-in resistor type.)

The following characteristics apply to both DTr1 and DTr2.

**●Equivalent circuit**



**●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>CE0</sub>	-50	V
Emitter-base voltage	V <sub>EB0</sub>	-5	V
Collector current	I <sub>c</sub>	-100	mA
Collector power dissipation	EMA3, UMA3N	150 (TOTAL)	mW *1
	FMA3A	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>CE0</sub>	-50	-	-	V	I <sub>c</sub> =-1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	-5	-	-	V	I <sub>E</sub> =-50μA
Collector cutoff current	I <sub>CB0</sub>	-	-	-0.5	μA	V <sub>CB</sub> =-50V
DC current transfer ratio	h <sub>FE</sub>	100	250	600	-	V <sub>CE</sub> /I <sub>c</sub> =-5V/-1mA
Emitter cutoff current	I <sub>EB0</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
Transition frequency	f <sub>T</sub>	-	250	-	MHz	V <sub>CE</sub> =-10V, I <sub>E</sub> =5mA, f=100MHz *
Input resistance	R <sub>1</sub>	3.29	4.7	6.11	kΩ	-

\* Transition frequency of the device

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)	8000	3000	3000
EMA3		○	—	—
UMA3N		—	○	—
FMA3A		—	—	○

●Electrical characteristic curves

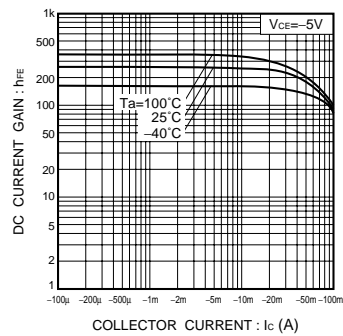


Fig.1 DC current gain vs. collector current

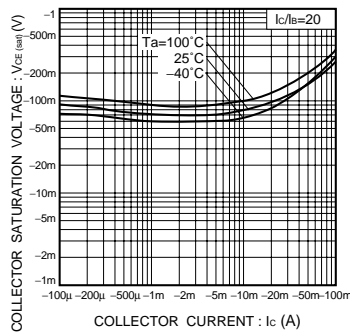


Fig.2 Collector-emitter saturation voltage vs. collector current

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