

# Emitter common (dual digital transistors)

## EMA11 / UMA11N / FMA11A

**●Features**

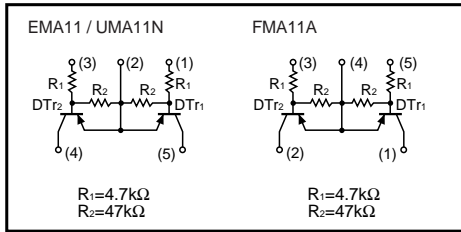
- 1) Two DTA143Z chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

**●Structure**

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

The following characteristics apply to both DTr<sub>1</sub> and DTr<sub>2</sub>.

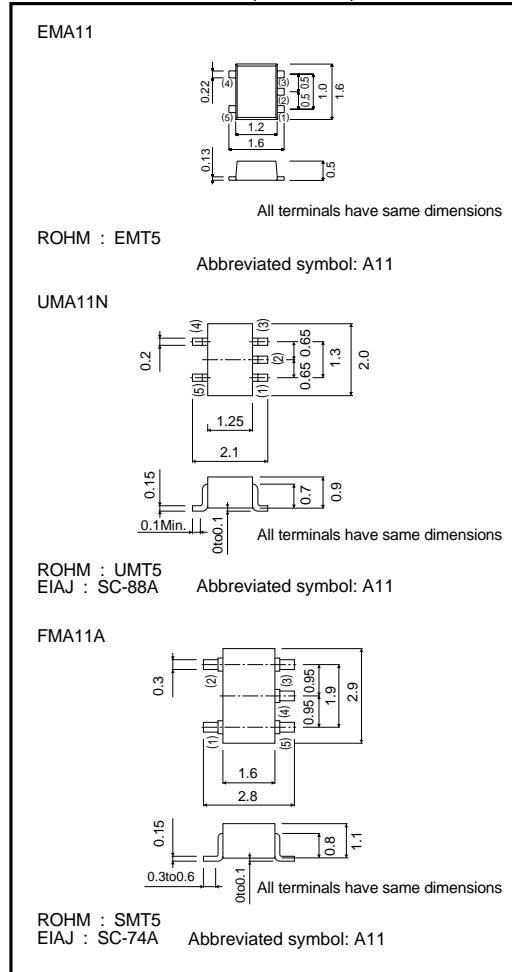
**●Equivalent circuit**



**●Packaging specifications**

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)			
EMA11		8000	3000	3000
UMA11N		-	○	-
FMA11A		-	-	○

**●External dimensions (Unit : mm)**



Transistors

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit	
Supply voltage		V <sub>CC</sub>	-50	V	
Input voltage		V <sub>IN</sub>	-30	V	
			5		
Output current		I <sub>o</sub>	-100	mA	
		I <sub>C (Max.)</sub>	-100		
Power dissipation	EMA11 / UMA11N	P <sub>d</sub>	150 (TOTAL)	mW	*1
	FMA11A		300 (TOTAL)		*2
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
Input voltage	V <sub>I (off)</sub>	-	-	-0.5	V	V <sub>CC</sub> =-5V, I <sub>o</sub> =-100μA
	V <sub>I (on)</sub>	-1.3	-	-		V <sub>O</sub> =-0.3V, I <sub>o</sub> =-5mA
Output voltage	V <sub>O (on)</sub>	-	-0.1	-0.3	V	I <sub>o</sub> /I <sub>i</sub> =-5mA/-0.25mA
Input current	I <sub>i</sub>	-	-	-1.8	mA	V <sub>I</sub> =-5V
Output current	I <sub>o (off)</sub>	-	-	-0.5	μA	V <sub>CC</sub> =-50V, V <sub>I</sub> =0V
DC current gain	G <sub>I</sub>	80	-	-	-	V <sub>O</sub> =-5V, I <sub>o</sub> =-10mA
Transition frequency	f <sub>r</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	-
Resistance ratio	R <sub>2</sub> /R <sub>1</sub>	8	10	12	-	-

\* Transition frequency of the device

●Electrical characteristic curves

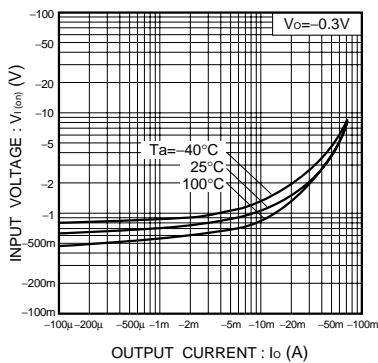


Fig.1 Input voltage vs. output current (ON characteristics)

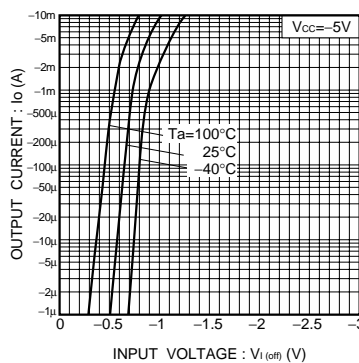


Fig.2 Output current vs. input voltage (OFF characteristics)

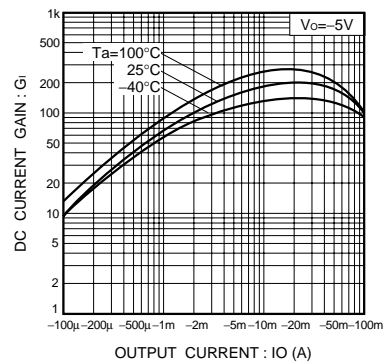


Fig.3 DC current gain vs. output current

Transistors

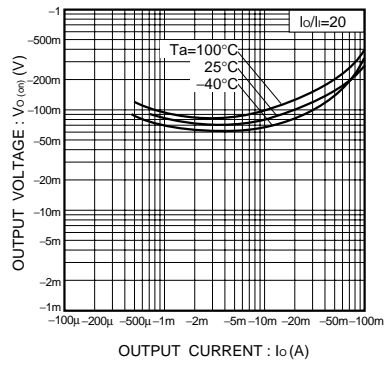


Fig.4 Output voltage vs. output current

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