

Emitter common (dual digital transistors)

EMA11 / UMA11N / FMA11A

●Features

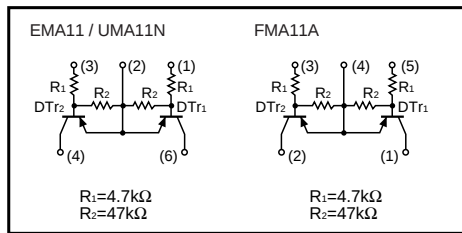
- 1) Two DTA143Z chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

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

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

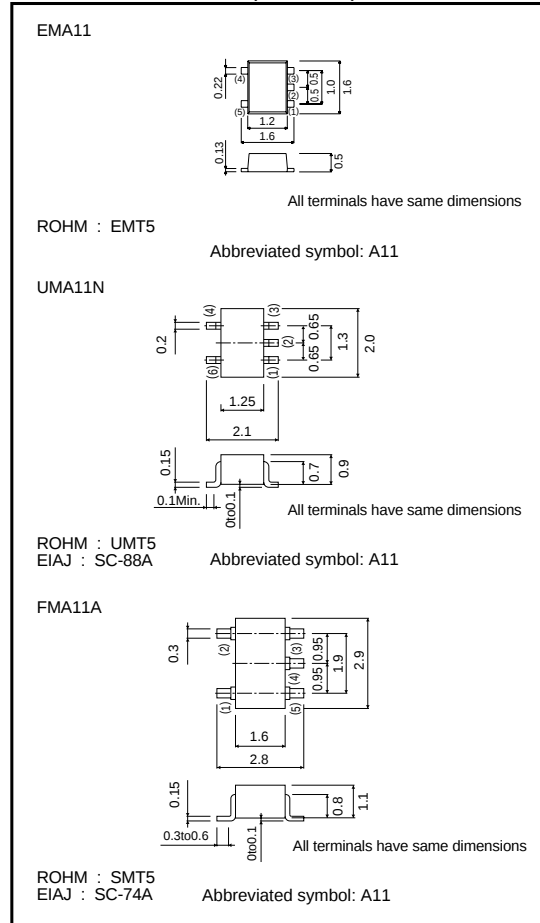
●Equivalent circuit



●Packaging specifications

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

●External dimensions (Unit : mm)



Transistors

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Supply voltage		V_{CC}	-50	V
Input voltage		V_{IN}	-30	V
			5	
Output current		I_O	-100	mA
		$I_{C (Max.)}$	-100	
Power dissipation	EMA11 / UMA11N	P_d	150 (TOTAL)	mW *1
	FMA11A		300 (TOTAL)	mW *2
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	-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	$V_{I (off)}$	—	—	-0.5	V	$V_{CC} = -5V, I_O = -100\mu A$
	$V_{I (on)}$	-1.3	—	—		$V_O = -0.3V, I_O = -5mA$
Output voltage	$V_{O (on)}$	—	-0.1	-0.3	V	$I_O/I_I = -5mA/-0.25mA$
Input current	I_I	—	—	-1.8	mA	$V_I = -5V$
Output current	$I_O (off)$	—	—	-0.5	μA	$V_{CC} = -50V, V_I = 0V$
DC current gain	G_I	80	—	—	—	$V_O = -5V, I_O = -10mA$
Transition frequency	f_T	—	250	—	MHz	$V_{CE} = 10mA, I_E = -5mA, f = 100MHz$ *
Input resistance	R_1	3.29	4.7	6.11	k Ω	—
Resistance ratio	R_2/R_1	8	10	12	—	—

* Transition frequency of the device

●Electrical characteristic curves

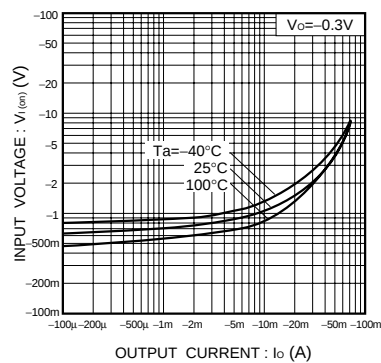


Fig.1 Input voltage vs. output current (ON characteristics)

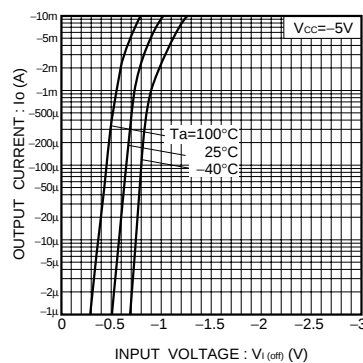


Fig.2 Output current vs. input voltage (OFF characteristics)

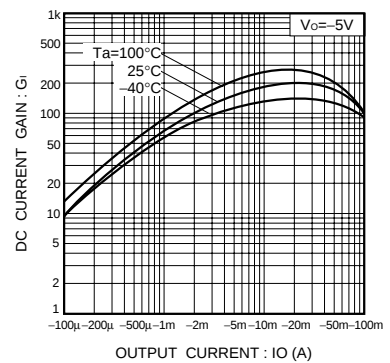


Fig.3 DC current gain vs. output current

Transistors

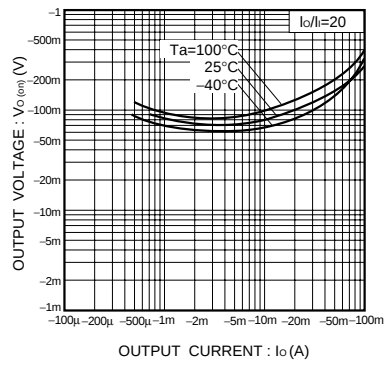


Fig.4 Output voltage vs. output current