

Emitter common (dual digital transistors)

EMG2 / UMG2N / FMG2A

●Features

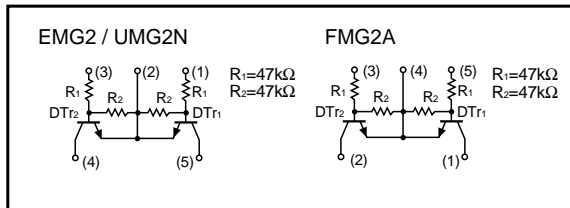
- 1) Two DTC144E chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

Dual NPN digital transistor
(each with a single built in resistors)

The following characteristics apply to both the DTr1 and DTr2.

●Equivalent circuit

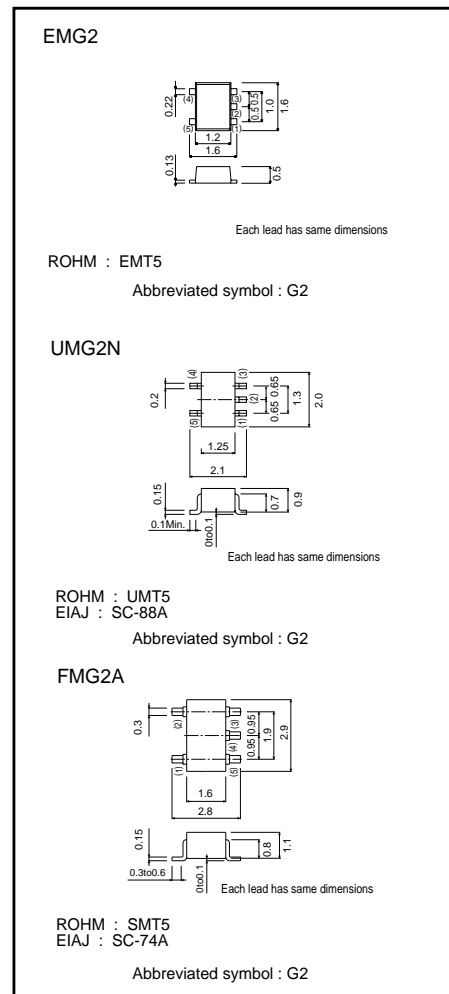


●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Supply voltage	V _{CC}	50	V	
Input voltage	V _{IN}	40	V	
		-10		
Output current	I _o	30	mA	
	I _{c (Max.)}	100		
Power dissipation	EMG2, UMG2N	Pd	150 (TOTAL)	mW
	FMG2A		300 (TOTAL)	
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.

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	–	–	0.5	V	$V_{CC}=5V, I_o=100\mu A$
	$V_{I(on)}$	3	–	–		$V_o=0.3V, I_o=2mA$
Output voltage	$V_{O(on)}$	–	0.1	0.3	V	$I_o=10mA, I_i=0.5mA$
Input current	I_i	–	–	0.18	mA	$V_i=5V$
Output current	$I_{O(off)}$	–	–	0.5	μA	$V_{CC}=50V, V_i=0V$
DC current gain	G_i	68	–	–	–	$V_o=5V, I_o=5mA$
Transition frequency	f_T	–	250	–	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *
Input resistance	R_1	32.9	47	61.1	$k\Omega$	–
Resistance ratio	R_2/R_1	0.8	1	1.2	–	–

* Transition frequency of the device

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)	8000	3000	3000
EMG2		○	—	—
UMG2N		—	○	—
FMG2A		—	—	○

●Electrical characteristic curves

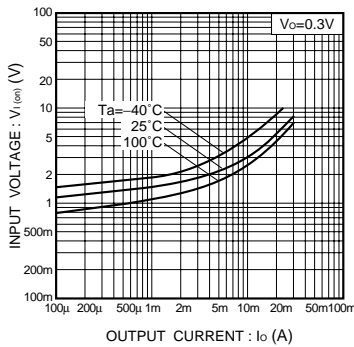


Fig.1 Input voltage vs. output current (on-characteristics)

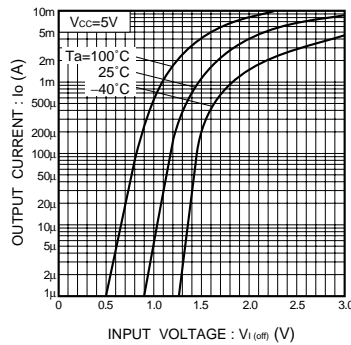


Fig.2 Output current vs. input voltage (off-characteristics)

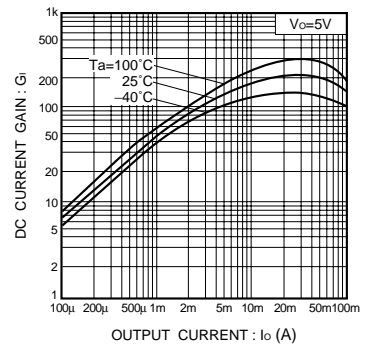


Fig.3 DC current gain vs. output current

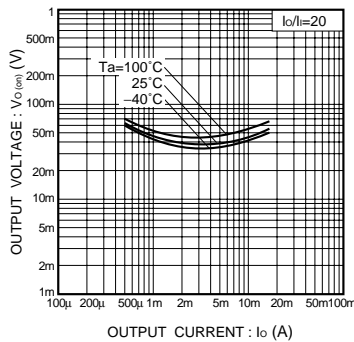


Fig.4 Output voltage vs. output current

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