

# Emitter common (dual digital transistors)

## EMG2 / UMG2N / FMG2A

### ●Features

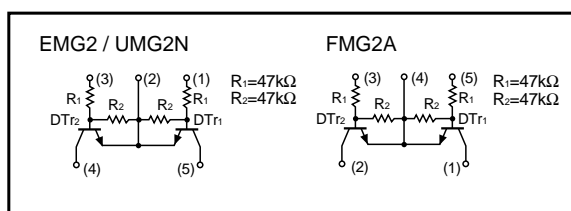
- 1) Two DTC144E chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

### ●Structure

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

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

### ●Equivalent circuit



### ●Absolute maximum ratings (Ta = 25°C)

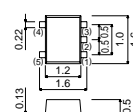
Parameter		Symbol	Limits	Unit
Supply voltage		V <sub>CC</sub>	50	V
Input voltage		V <sub>IN</sub>	40	V
			-10	
Output current		I <sub>O</sub>	30	mA
		I <sub>C</sub> (Max.)	100	
Power dissipation	EMG2, UMG2N	P <sub>d</sub>	150 (TOTAL)	mW
	FMG2A		300 (TOTAL)	
Junction temperature		T <sub>j</sub>	150	°C
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.

### ●External dimensions (Unit : mm)

#### EMG2

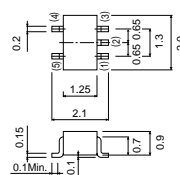


Each lead has same dimensions

ROHM : EMT5

Abbreviated symbol : G2

#### UMG2N



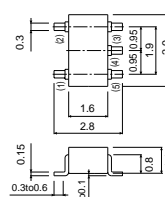
Each lead has same dimensions

ROHM : UMT5

EIAJ : SC-88A

Abbreviated symbol : G2

#### FMG2A



Each lead has same dimensions

ROHM : SMT5

EIAJ : SC-74A

Abbreviated symbol : G2

## 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	$\mu A$	$V_{CC}=50V, V_i=0V$
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	$R_i$	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

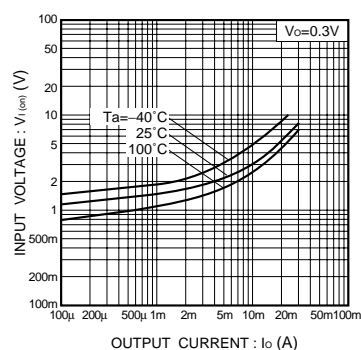


Fig.1 Input voltage vs. output current (on-characteristics)

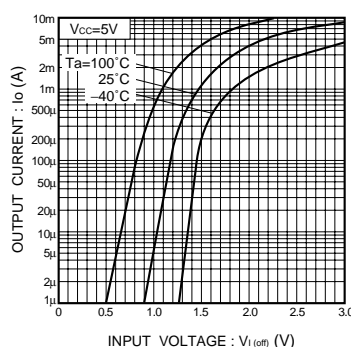


Fig.2 Output current vs. input voltage (off-characteristics)

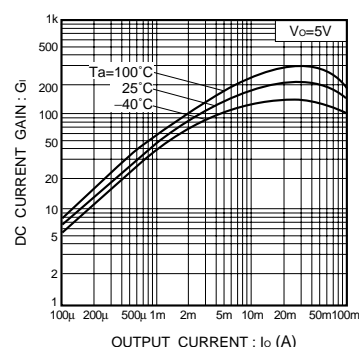


Fig.3 DC current gain vs. output current

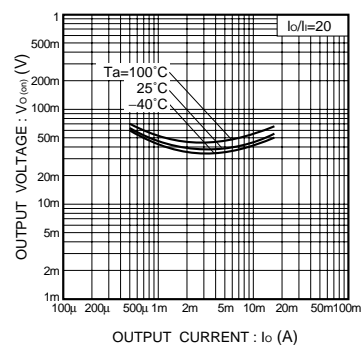


Fig.4 Output voltage vs. output current

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