

# Emitter common (dual digital transistors)

## EMG8 / UMG8N

### ●Structure

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

The following characteristics apply to both the DTr1 and DTr2.

### ●Features

- 1) Two DTC143Z chips in a EMT or UMT package.
- 2) Mounting cost and area can be cut in half.

### ●Packaging specifications

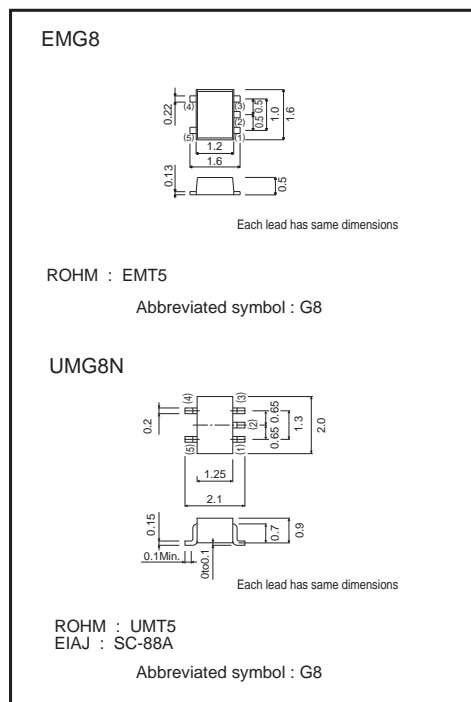
Type	Package	Taping	
	Code	T2R	TR
	Basic ordering unit (pieces)	8000	3000
EMG8		○	—
UMG8N		—	○

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

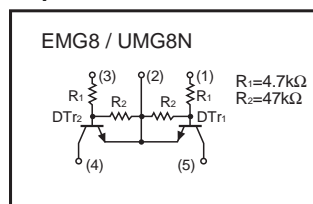
Parameter	Symbol	Limits	Unit
Supply voltage	$V_{CC}$	50	V
Input voltage	$V_{IN}$	30	V
		-5	
Output current	$I_O$	100	mA
	$I_C (Max.)$	100	
Power dissipation	EMG8, UMG8N	$P_d$	150 (TOTAL) mW *
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\* 120mW per element must not be exceeded.

### ●Dimensions (Unit : mm)



### ●Equivalent circuit



●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	$I_o=5mA, I_i=0.25mA$
Input current	$I_i$	—	—	1.8	mA	$V_i=5V$
Output current	$I_{O(off)}$	—	—	0.5	$\mu A$	$V_{CC}=50V, V_i=0V$
DC current gain	$G_i$	80	—	—	—	$V_o=5V, I_o=10mA$
Transition frequency	$f_T$	—	250	—	MHz	$V_{CE}=10V, I_E=-5mA, f=100MHz$ *
Input resistance	$R_i$	3.29	4.7	6.11	$k\Omega$	—
Resistance ratio	$R_2/R_1$	8	10	12	—	—

\* Transition frequency of the device

●Electrical characteristic curves

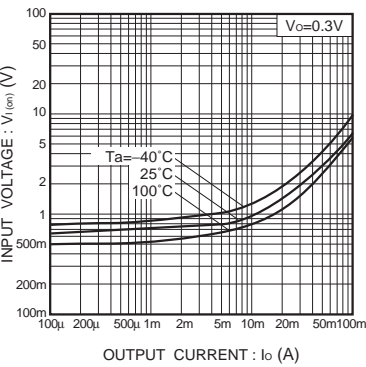


Fig.1 Input voltage vs. output current (ON characteristics)

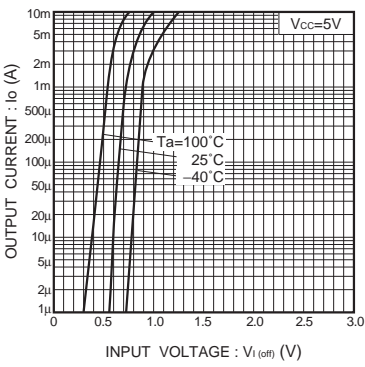


Fig.2 Output current vs. input voltage (OFF characteristics)

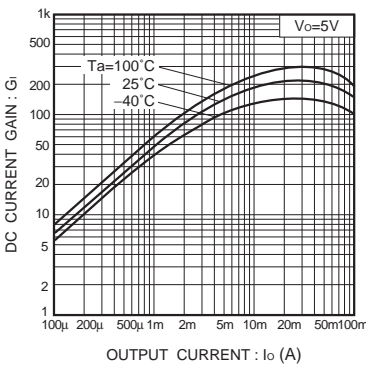


Fig.3 DC current gain vs. output current

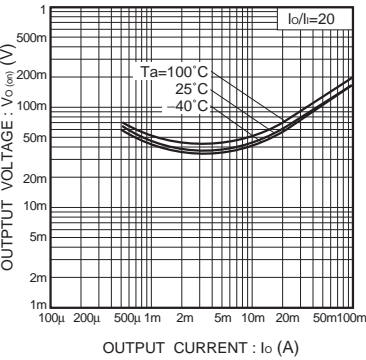


Fig.4 Output voltage vs. output current

## Notes

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