

Emitter common (dual digital transistors)

EMG8 / UMG8N / FMG8A

●Features

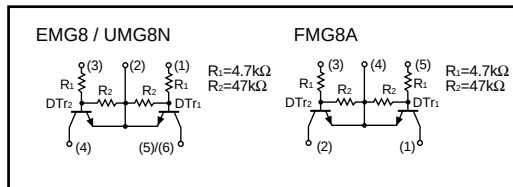
- 1) Two DTC143Z chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both the DTr1 and DTr2.

●Equivalent circuit



●Absolute maximum ratings (Ta = 25°C)

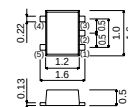
Parameter	Symbol	Limits	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _{IN}	30 -5	V
Output current	I _O I _C (Max.)	100 100	mA
Power dissipation	P _d	150 (TOTAL) 300 (TOTAL)	mW *2
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55~+150	°C

*1 120mW per element must not be exceeded.

*2 200mW per element must not be exceeded.

●External dimensions (Units : mm)

EMG8

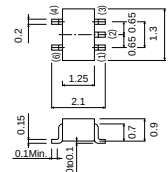


Each lead has same dimensions

ROHM : EMT5

Abbreviated symbol : G8

UMG8N

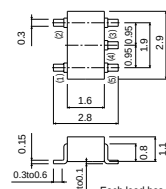


Each lead has same dimensions

ROHM : UMT5
EIAJ : SC-88A

Abbreviated symbol : G8

FMG8A



Each lead has same dimensions

ROHM : SMT5
EIAJ : SC-74A

Abbreviated symbol : G8

Transistors

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	—	—	0.5	V	$V_{CC}=5V, I_o=100\mu A$
	$V_{I(on)}$	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	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_i	3.29	4.7	6.11	$k\Omega$	—
Resistance ratio	R_z/R_i	8	10	12	—	—

* Transition frequency of the device

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)	8000	3000	3000
EMG8	○	—	—	—
UMG8N	—	○	—	—
FMG8A	—	—	—	○

●Electrical characteristic curves

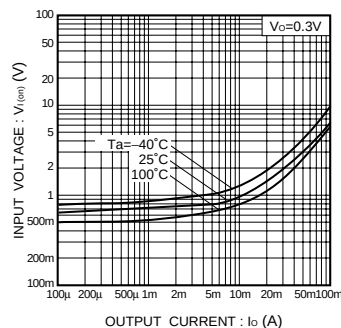


Fig.1 Input voltage vs. output current (ON characteristics)

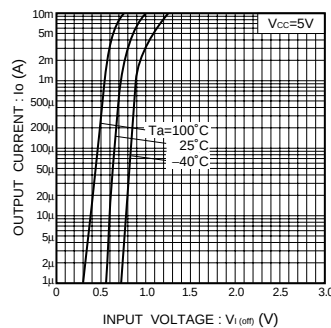


Fig.2 Output current vs. input voltage (OFF characteristics)

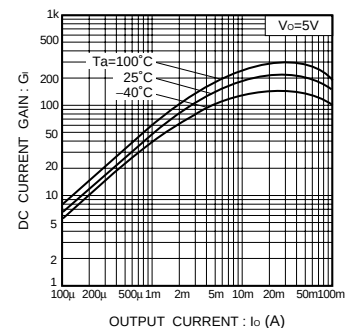


Fig.3 DC current gain vs. output current

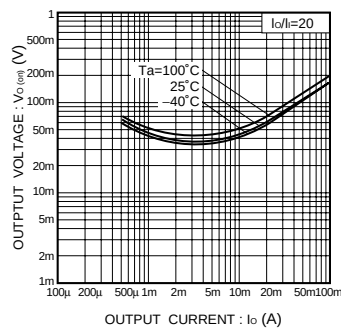


Fig.4 Output voltage vs. output current