Emitter common (dual digital transistors)

EMG2 / UMG2N / FMG2A

●**Features**

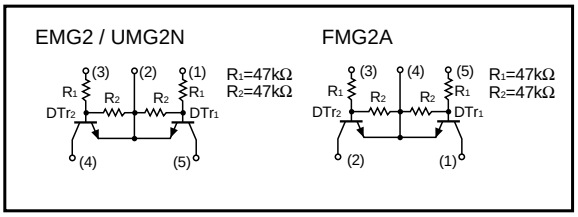
1) Two DTC144E chips in a EMT or UMT or SMT package.
2) Mounting cost and area can be cut in half.

●**Structure**

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

The following characteristics apply to both the DTr_1 and DTr_2.

●**Equivalent circuit**



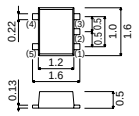
●**Absolute maximum ratings** (Ta = 25°C)

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 ∗1
	FMG2A		300 (TOTAL)	∗2
Junction temperature		Tj	150	˚C
Storage temperature		Tstg	−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

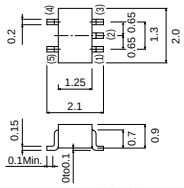


Each lead has same dimensions

ROHM : EMT5

Abbreviated symbol : G2

UMG2N

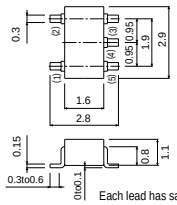


Each lead has same dimensions

ROHM : UMT5
EIAJ : SC-88A

Abbreviated symbol : G2

FMG2A



Each lead has same dimensions

ROHM : SMT5
EIAJ : SC-74A

Abbreviated symbol : G2

●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=100μA
	$V_{I(on)}$	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	kΩ	–
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

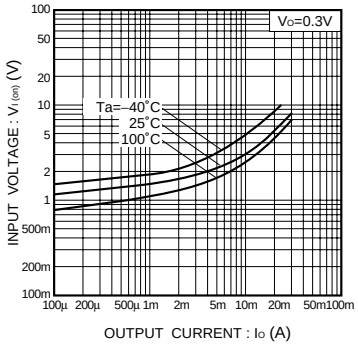


Fig.1 Input voltage vs. output current (on-characteristics)

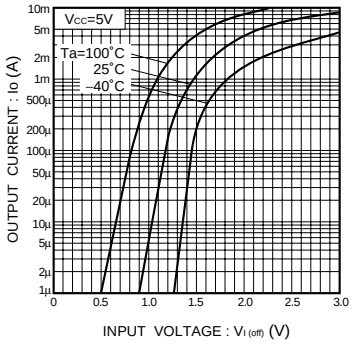


Fig.2 Output current vs. input voltage (off-characteristics)

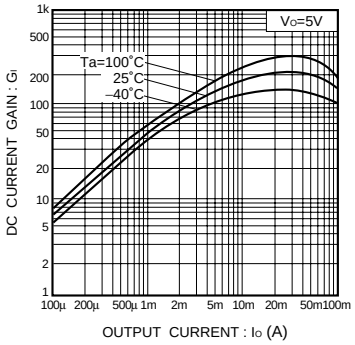


Fig.3 DC current gain vs. output current

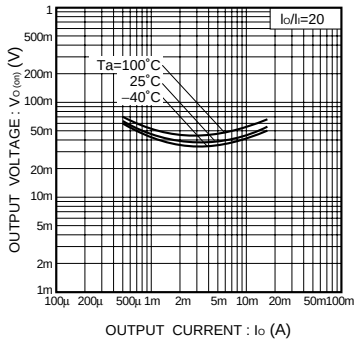


Fig.4 Output voltage vs. output current

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