

Emitter common (dual digital transistors)

EMG3 / UMG3N / FMG3A

●Features

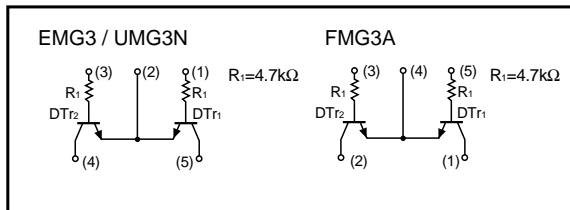
- 1) Two DTC143T chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both the DT_{r1} and DT_{r2}.

●Equivalent circuit

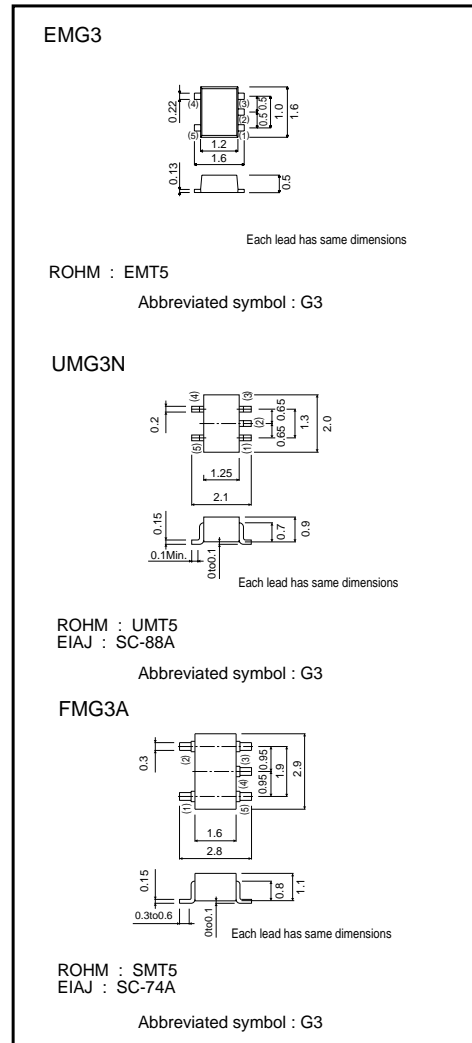


●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	50	V
Collector-emitter voltage	V _{CE0}	50	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _c	100	mA
Collector power dissipation	EMG3, UMG3N	150 (TOTAL)	mW *1
	FMG3A	300 (TOTAL)	mW *2
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
Collector-base breakdown voltage	BV _{CB0}	50	–	–	V	I _c =50μA
Collector-emitter breakdown voltage	BV _{CE0}	50	–	–	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	5	–	–	V	I _E =50μA
Collector cutoff current	I _{CB0}	–	–	0.5	μA	V _{CB} =50V
Emitter cutoff current	I _{EB0}	–	–	0.5	μA	V _{EB} =4V
Collector-emitter saturation voltage	V _{CE(sat)}	–	–	0.3	V	I _c /I _B =5mA/0.25mA
DC current transfer ratio	h _{FE}	100	250	600	–	V _{CE} =5V, I _c =1mA
Transition frequency	f _T	–	250	–	MHz	V _{CE} =10V, I _E = –5mA, f=100MHz *
Input resistance	R ₁	3.29	4.7	6.11	kΩ	–

* Transition frequency of the transistor

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)	8000	3000	3000
EMG3	○	—	—	—
UMG3N	—	○	—	—
FMG3A	—	—	—	○

●Electrical characteristic curves

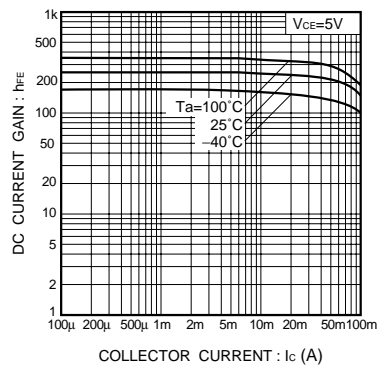


Fig.1 DC current gain vs. collector current

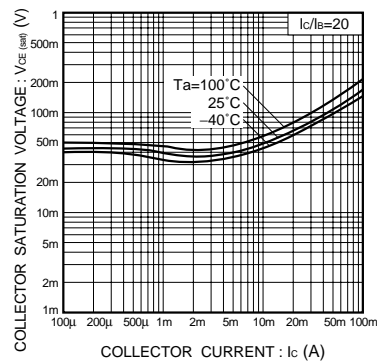


Fig.2 Collector-emitter saturation voltage vs. collector current

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