

Emitter common (dual digital transistors)

UMG3N / FMG3A

●Features

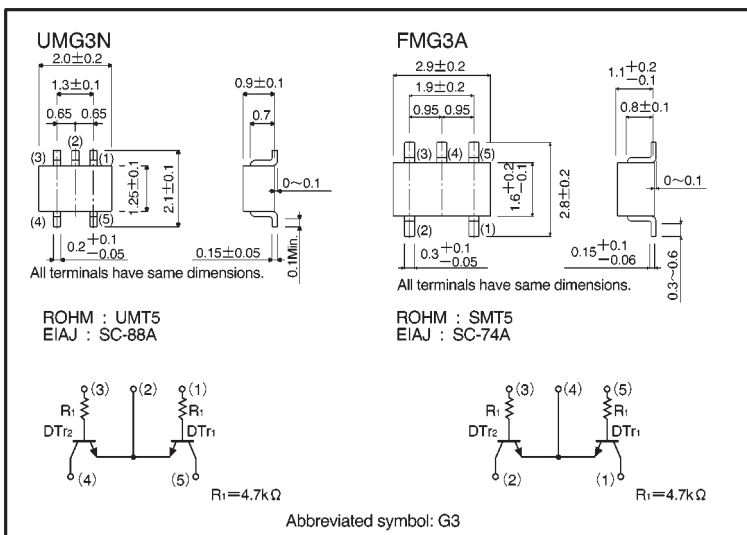
- 1) Two DTC143T chips in a UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

Dual NPN digital transistor
(each with single built in resistor)

The following characteristics apply to both DTr₁ and DTr₂.

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 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	UMG3N	150 (TOTAL)	mW
	FMG3A	300 (TOTAL)	
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.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	$I_C = 50\ \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E = 50\ \mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 50V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C/I_B = 10mA/1mA$
DC current transfer ratio	h_{FE}	100	250	600	—	$V_{CE} = 5V, I_C = 1mA$
Transition frequency	f_T	—	250	—	MHz	$V_{CE} = 10mA, I_E = -5mA, f = 100MHz^*$
Input resistance	R_1	3.29	4.7	6.11	k Ω	—

* Transition frequency of the device

●Packaging specifications

Part No.	Packaging type	Taping	
	Code	TR	T148
	Basic ordering unit (pieces)	3000	3000
UMG3N			—
FMG3A		—	

●Electrical characteristic curves

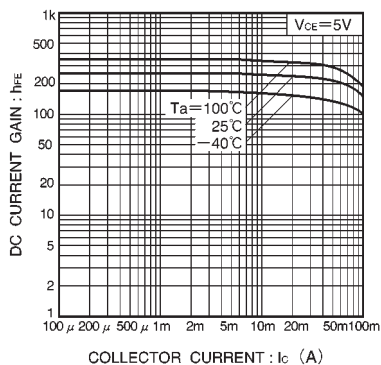


Fig.1 DC current gain vs. collector current

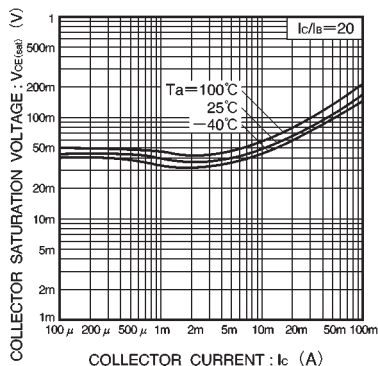


Fig.2 Collector-emitter saturation voltage vs. collector current