

Emitter common (dual digital transistors)

EMG3 / UMG3N / FMG3A

●Features

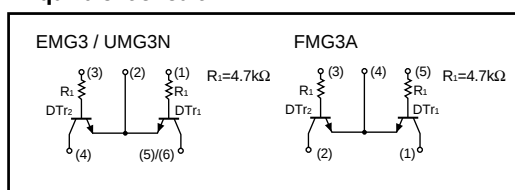
- 1) Two DTC143T chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

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

The following characteristics apply to both the DTr1 and DTr2.

●Equivalent circuit



●Absolute maximum ratings (Ta = 25°C)

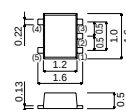
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	EMG3, UMG3N	P_C 150 (TOTAL)	mW *1
	FMG3A	300 (TOTAL)	mW *2
Junction temperature	T_j	150	°C
Storage temperature	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)

EMG3

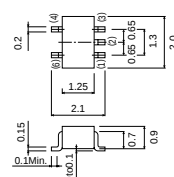


Each lead has same dimensions

ROHM : EMT5

Abbreviated symbol : G3

UMG3N



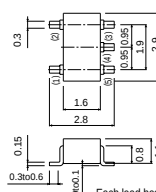
Each lead has same dimensions

ROHM : UMT5

EIAJ : SC-88A

Abbreviated symbol : G3

FMG3A



Each lead has same dimensions

ROHM : SMT5

EIAJ : SC-74A

Abbreviated symbol : G3

Transistors

●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_i	3.29	4.7	6.11	k Ω	—

* 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

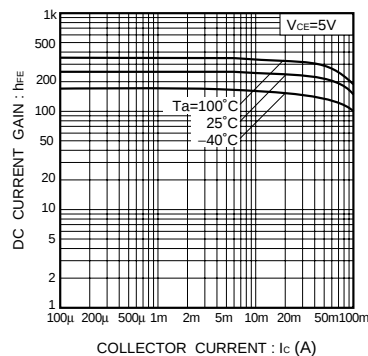


Fig.1 DC current gain vs. collector current

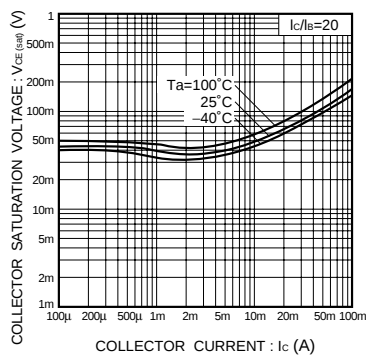


Fig.2 Collector-emitter saturation voltage vs. collector current