

Emitter common (dual digital transistors)

EMA3 / UMA3N / FMA3A

●Features

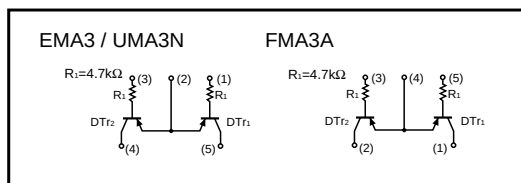
- 1) Two DTA143Ts in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

●Structure

Epitaxial planar type PNP silicon transistor (Built-in resistor type.)

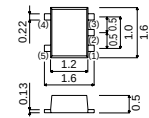
The following characteristics apply to both DTr1 and DTr2.

●Equivalent circuit



●External dimensions (Unit : mm)

EMA3

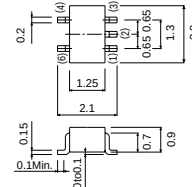


Each lead has same dimensions

ROHM : EMT5

Abbreviated symbol : A3

UMA3N



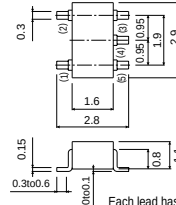
Each lead has same dimensions

ROHM : UMT5

EIAJ : SC-88A

Abbreviated symbol : A3

FMA3A



Each lead has same dimensions

ROHM : SMT5

EIAJ : SC-74A

Abbreviated symbol : A3

Transistors

●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	EMA3, UMA3N	150 (TOTAL)	mW *1
	FMA3A	300 (TOTAL)	
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.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	-50	—	—	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CE0}	-50	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	-5	—	—	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	—	—	-0.5	μA	$V_{CB} = -50V$
DC current transfer ratio	h_{FE}	100	250	600	—	$V_{CE}/I_C = -5V/-1mA$
Emitter cutoff current	I_{EBO}	—	—	-0.5	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.3	V	$I_C/I_B = -5mA/-0.25mA$
Transition frequency	f_T	—	250	—	MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$ *
Input resistance	R_1	3.29	4.7	6.11	k Ω	—

* Transition frequency of the device

●Packaging specifications

Type	Package	Taping		
	Code	T2R	TR	T148
	Basic ordering unit (pieces)	8000	3000	3000
EMA3		○	—	—
UMA3N		—	○	—
FMA3A		—	—	○

●Electrical characteristic curves

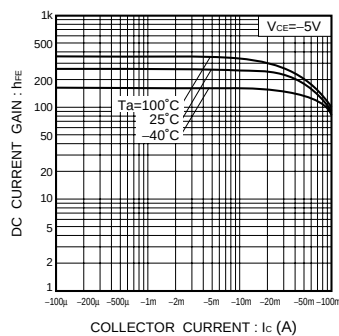


Fig.1 DC current gain vs. collector current

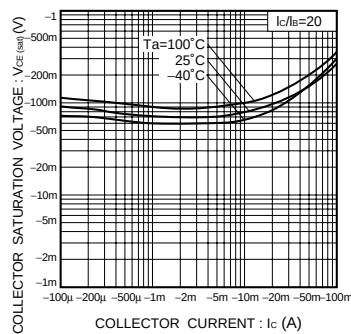


Fig.2 Collector-emitter saturation voltage vs. collector current

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