

General purpose (dual digital transistors)

EMB3 / UMB3N / IMB3A

●Features

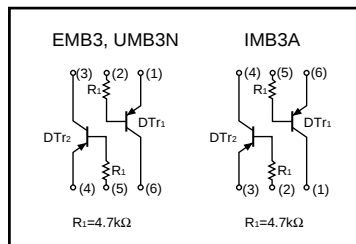
- 1) Two DTA143T chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

●Structure

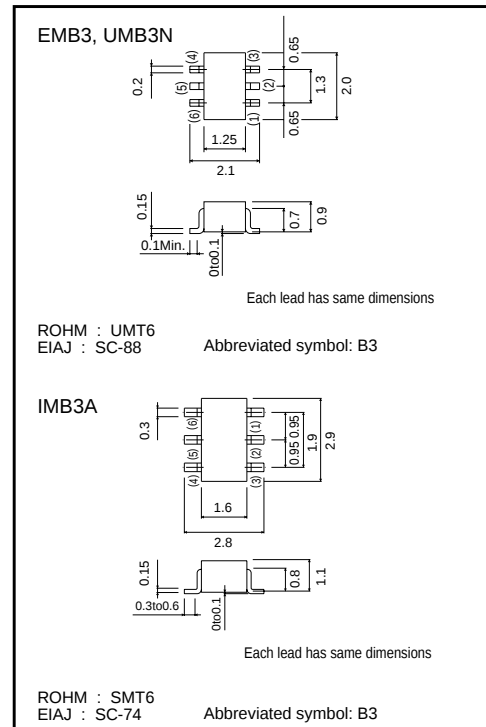
Dual PNP digital transistor
(each with single built in resistor)

The following characteristics apply to both DTr₁ and DTr₂.

●Equivalent circuit



●External dimensions (Units : mm)



●Packaging specifications

Type	Package	Taping		
	Code	T2R	TN	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMB3		○	—	—
UMB3N		—	○	—
IMB3N		—	—	○

●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	EMB3, UMB3N	150 (TOTAL)	mW *1
	IMB3A	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.

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	$I_C/I_E = -5mA/-2.5mA$
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	$k\Omega$	—

* Transition frequency of the device

●Electrical characteristic curves

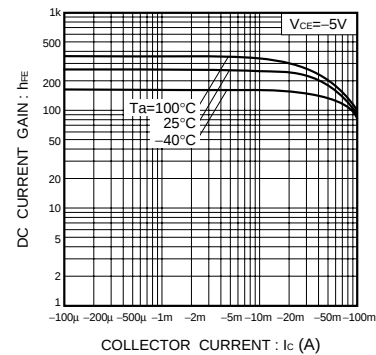


Fig.1 DC current gain vs. collector current

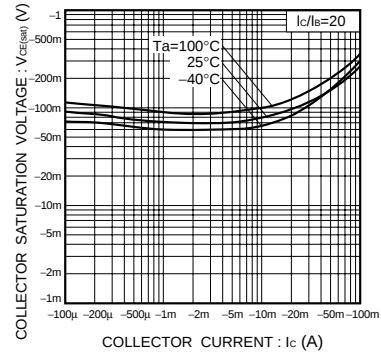


Fig.2 Collector-emitter saturation voltage vs. collector current