

# General purpose (dual digital transistors)

## EMB3 / UMB3N / IMB3A

●Features

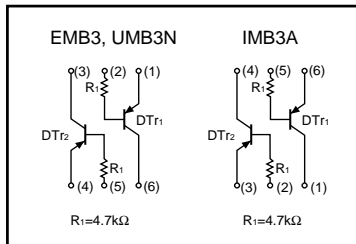
- 1) Two DTA143T chips in a EMT or UMT or SMT package.
- 2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

●Structure

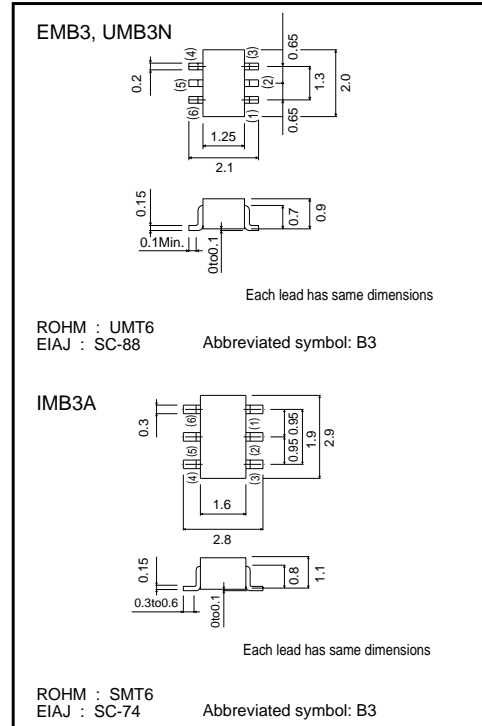
Dual PNP digital transistor  
(each with single built in resistor)

The following characteristics apply to both DT<sub>r1</sub> and DT<sub>r2</sub>.

●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 <sub>CBO</sub>	-50	V
Collector-emitter voltage	V <sub>CEO</sub>	-50	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	I <sub>c</sub>	-100	mA
Collector power dissipation	EMB3, UMB3N	150 (TOTAL)	mW *1
	IMB3A	300 (TOTAL)	mW *2
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-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	$\mu A$	$V_{CB} = -50V$
Emitter cutoff current	$I_{EBO}$	-	-	-0.5	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.3	V	$I_C/I_B = -5mA/-2.5mA$
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

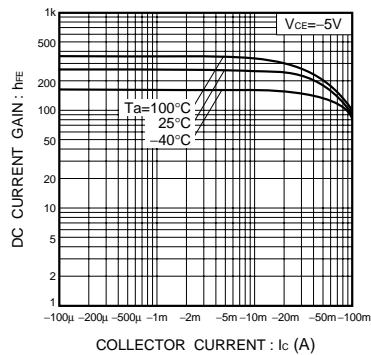


Fig.1 DC current gain vs. collector current

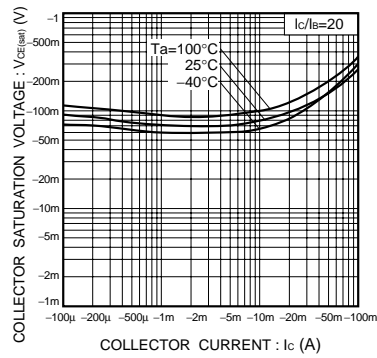


Fig.2 Collector-emitter saturation voltage vs. collector current