General purpose (dual digital transistors)

EMB3 / UMB3N / IMB3A

●Features

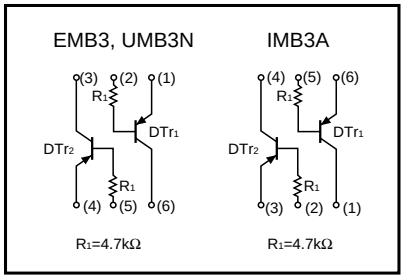
1) Two DTA143T chips in a EMT6 or UMT6 or SMT6 package.
2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.

●Structure

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

The following characteristics apply to both DTr_1 and DTr_2.

●Equivalent circuit

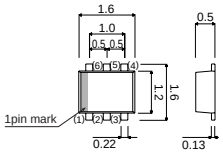


●Packaging specifications

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

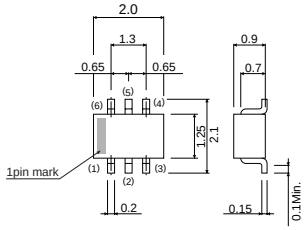
●External dimensions (Unit : mm)

EMB3



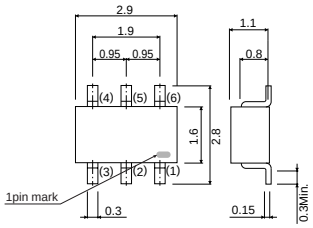
Each lead has same dimensions
ROHM : EMT6 Abbreviated symbol : B3

UMB3N



ROHM : UMT6 Each lead has same dimensions
EIAJ : SC-88 Abbreviated symbol : B3

IMB3A



ROHM : SMT6 Each lead has same dimensions
EIAJ : SC-74 Abbreviated symbol : B3

●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	P_C	150 (TOTAL)	mW ∗1
	IMB3A		300 (TOTAL)	mW ∗2
Junction temperature		Tj	150	°C
Storage temperature		Tstg	–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_{CBO}	–50	–	–	V	I_C=–50µA
Collector-emitter breakdown voltage	BV_{CEO}	–50	–	–	V	I_C=–1mA
Emitter-base breakdown voltage	BV_{EBO}	–5	–	–	V	I_E=–50µA
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=–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_1	3.29	4.7	6.11	kΩ	–

∗ Transition frequency of the device

●Electrical characteristic curves

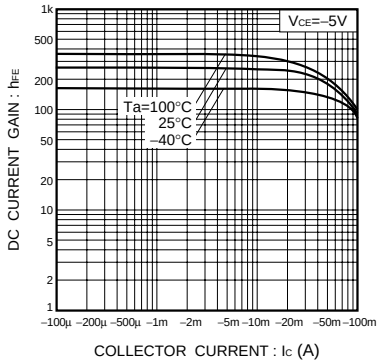


Fig.1 DC current gain vs. collector current

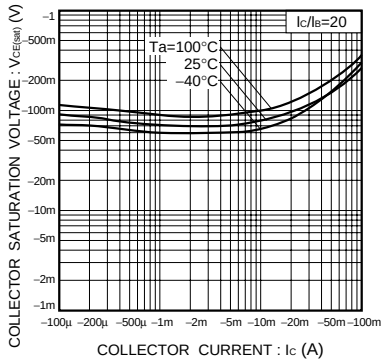


Fig.2 Collector-emitter saturation voltage vs. collector current

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