General Purpose Transistor (Isolated Dual Transistors)

EMT1 / UMT1N / IMT1A

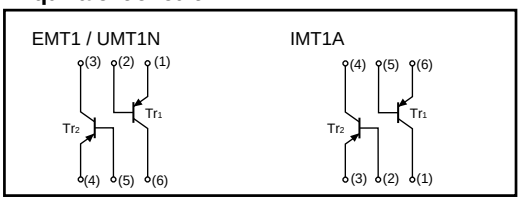
●Features

1) Two 2SA1037AK 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

Epitaxial planar type
PNP silicon transistor

●Equivalent circuit



The following characteristics apply to both Tr_1 and Tr_2.

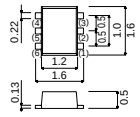
●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	–60	V
Collector-emitter voltage		V_{CEO}	–50	V
Emitter-base voltage		V_{EBO}	–6	V
Collector current		I_C	–150	mA
Collector power dissipation	EMT1, UMT1N	P_C	150 (TOTAL)	mW ∗1
	IMT1A		300 (TOTAL)	∗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.

●External dimensions (Unit : mm)

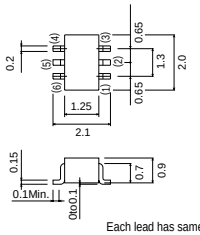
EMT1



Each lead has same dimensions

ROHM : EMT6 Abbreviated symbol : T1

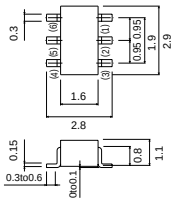
UMT1N



Each lead has same dimensions

ROHM : UMT6
EIAJ : SC-88 Abbreviated symbol : T1

IMT1A



Each lead has same dimensions

ROHM : SMT6
EIAJ : SC-74 Abbreviated symbol : T1

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	–60	–	–	V	I_C = –50μA
Collector-emitter breakdown voltage	BV_{CEO}	–50	–	–	V	I_C = –1mA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	I_E = –50μA
Collector cutoff current	I_{CBO}	–	–	–0.1	μA	V_{CB} = –60V
Emitter cutoff current	I_{EBO}	–	–	–0.1	μA	V_{EB} = –6V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	–0.5	V	I_C/I_B = –50mA/–5mA
DC current transfer ratio	h_{FE}	120	–	560	–	V_{CE} = –6V, I_C = –1mA
Transition frequency	f_T	–	140	–	MHz	V_{CE} = –12V, I_E = 2mA, f = 100MHz
Output capacitance	Cob	–	4	5	pF	V_{CB} = –12V, I_E = 0A, f = 1MHz

●Packaging specifications

	Package	Taping		
	Code	T2R	TR	T108
Type	Basic ordering unit (pieces)	8000	3000	3000
EMT1		○	–	–
UMT1N		–	○	–
IMT1A		–	–	○

●Electrical characteristic curves

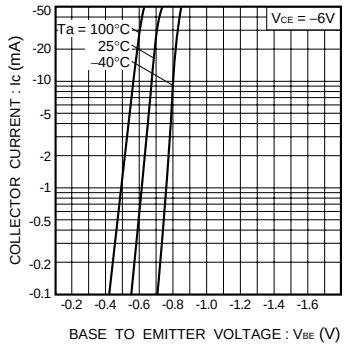


Fig.1 Grounded emitter propagation characteristics

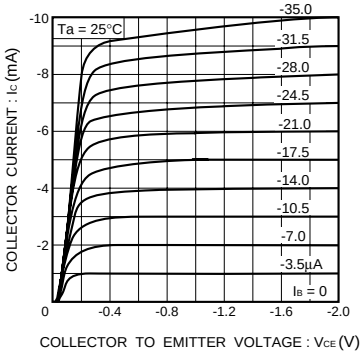


Fig.2 Grounded emitter output characteristics (I)

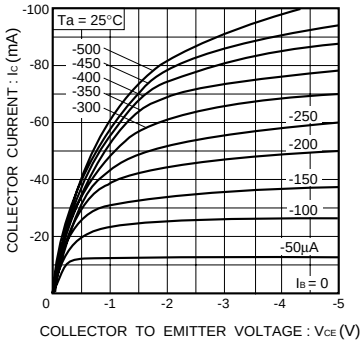


Fig.3 Grounded emitter output characteristics (II)

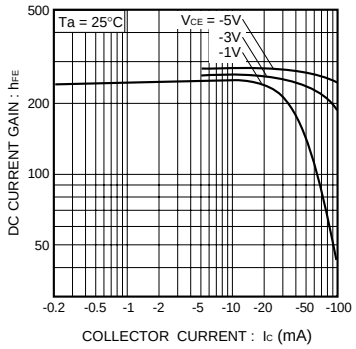


Fig.4 DC current gain vs. collector current (I)

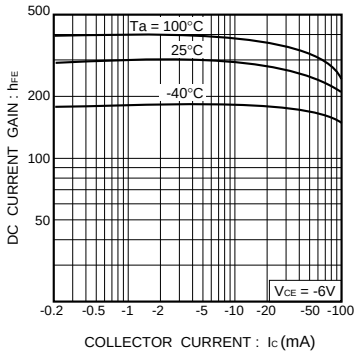


Fig.5 DC current gain vs. collector current (II)

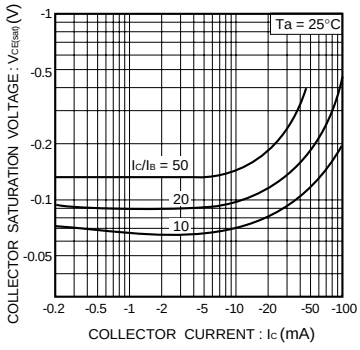


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

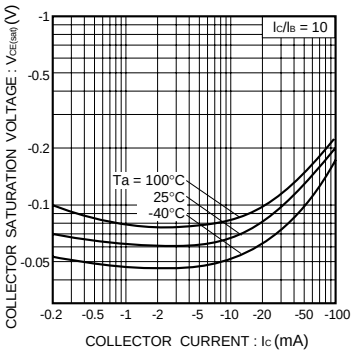


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

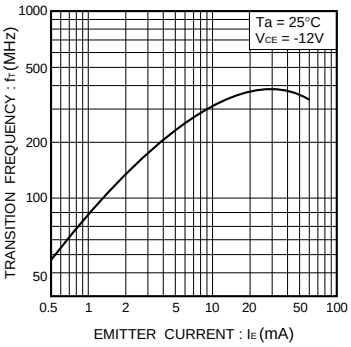


Fig.8 Gain bandwidth product vs. emitter current

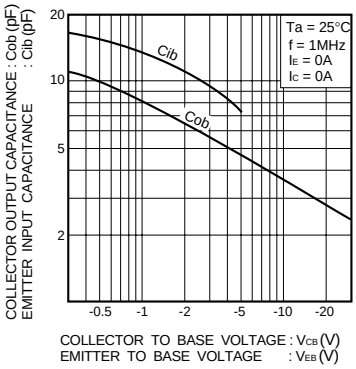


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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