

General Purpose Transistor (Isolated Dual Transistors)

UMT1N / IMT1A

●Features

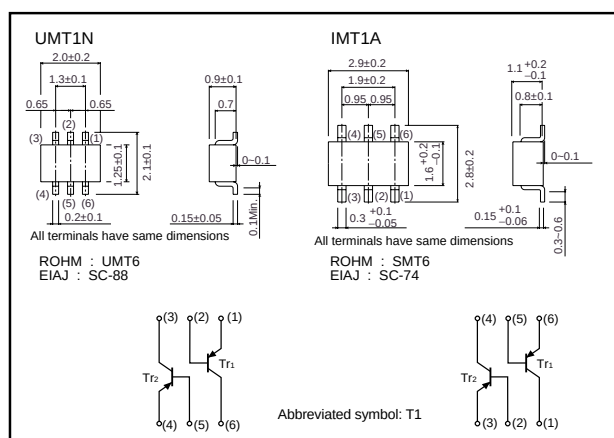
- 1) Two 2SA1037AK chips in UMT and SMT packages.
- 2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.

●Structure

Epitaxial planar type
PNP silicon transistor

The following characteristics apply to both
Tr1 and Tr2.

●External dimensions (Units : mm)



●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	UMT1N	150 (TOTAL)	mW *1
	IMT1A	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.

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-60	-	-	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-50	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	-	-	-0.1	μA	$V_{CB} = -60V$
Emitter cutoff current	I_{EBO}	-	-	-0.1	μA	$V_{EB} = -7V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.5	V	$I_C/I_E = -50mA/-5mA$
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	C_{ob}	-	4	5	pF	$V_{CB} = -12V, I_E = 0A, f = 1MHz$

Transistors

●Packaging specifications

Part No.	Packaging type	Taping	
	Code	TR	T108
	Basic ordering unit (pieces)	3000	3000
UMT1N		○	-
IMT1A		-	○

●Electrical characteristic curves

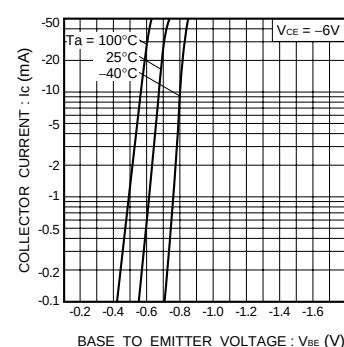


Fig.1 Grounded emitter propagation characteristics

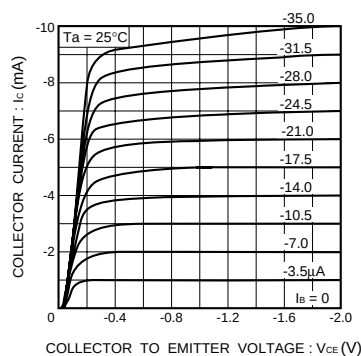


Fig.2 Grounded emitter output characteristics (I)

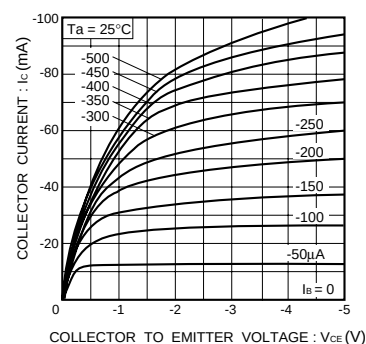


Fig.3 Grounded emitter output characteristics (II)

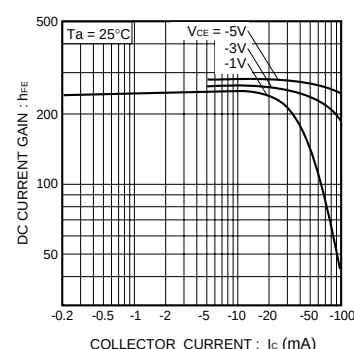


Fig.4 DC current gain vs. collector current (I)

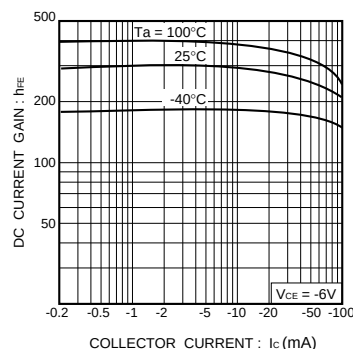


Fig.5 DC current gain vs. collector current (II)

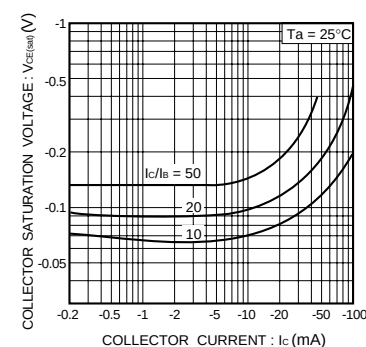


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

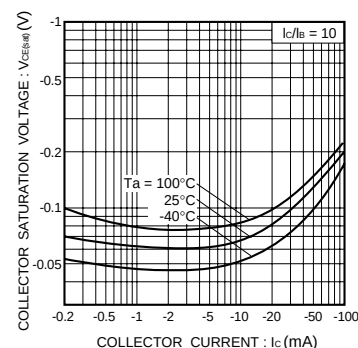


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

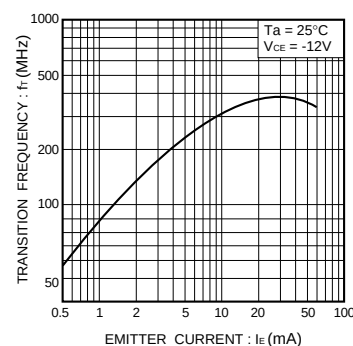


Fig.8 Gain bandwidth product vs. emitter current

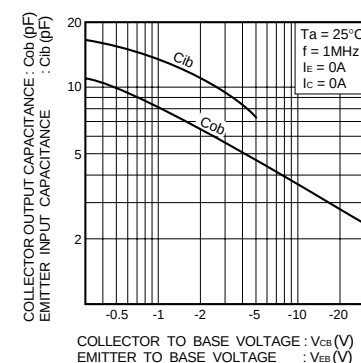


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage