General purpose transistors (dual transistors)

EMT18 / UMT18N / IMT18

●Features

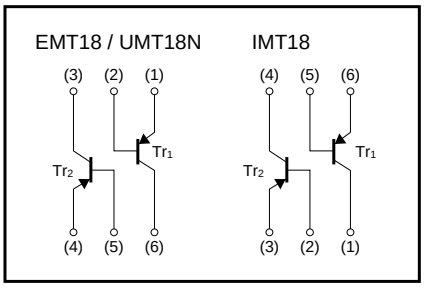
1) Two 2SA2018 chips in a EMT package.
2) Mounting possible with EMT3 or UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.

●Structure

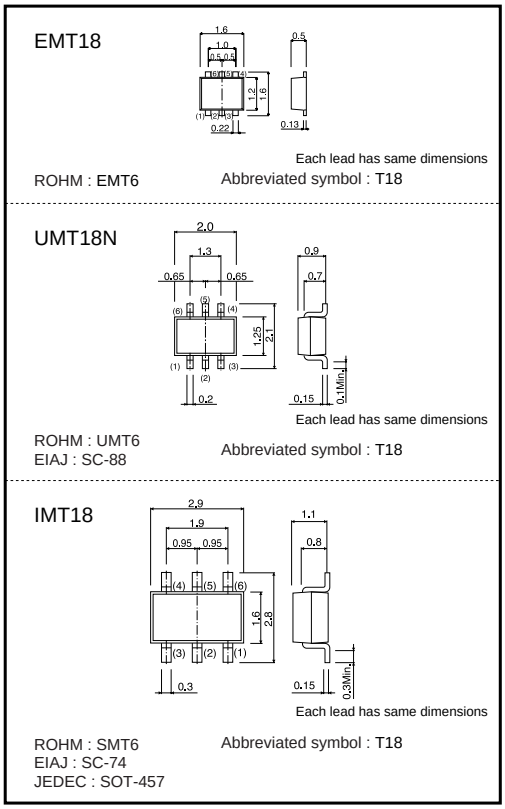
Epitaxial planar type
NPN silicon transistor

The following characteristics apply to both Tr_1 and Tr_2.

●Equivalent circuit



●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol		Limits	Unit
Collector-base voltage	V_{CBO}		–15	V
Collector-emitter voltage	V_{CEO}		–12	V
Emitter-base voltage	V_{EBO}		–6	V
Collector current	I_C		–500	mA
	I_{CP}		1.0 ∗1	A
Power dissipation	P_C	EMT6 UMT6	150 (TOTAL)∗2	mW
		SMT6	300 (TOTAL)∗3	
Junction temperature	Tj		150	°C
Storage temperature	Tstg		–55 to +150	°C

∗1 Single pulse Pw=1ms
∗2 120mW per element must not be exceeded.
∗3 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}	–15	–	–	V	I_C= –10μA
Collector-emitter breakdown voltage	BV_{CEO}	–12	–	–	V	I_C= –1mA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	I_E= –10μA
Collector cutoff current	I_{CBO}	–	–	–0.1	μA	V_{CB}= –15V
Emitter cutoff current	I_{EBO}	–	–	–0.1	μA	V_{CB}= –6V
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	–	–100	–250	mV	I_C / I_B= –200mA / –10mA
DC current transfer ratio	h_{FE}	270	–	680	–	V_{CE}= –2V, I_C= –10mA
Transition frequency	f_T	–	260	–	MHz	V_{CE}= –2V, I_E=10mA, f=100MHz
Output capacitance	Cob	–	6.5	–	pF	V_{CB}= –10V, I_E=0A, f=1MHz

●Packaging specifications and h_{FE}

Type	Package name	Taping		
	Code	T2R	TR	T110
	Basic ordering unit (pieces)	8000	3000	3000
EMT18		○	–	–
UMT18N		–	○	–
IMT18		–	–	○

●Electrical characteristic curves

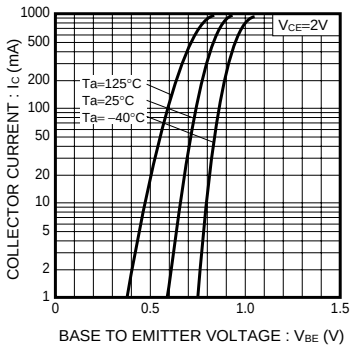


Fig.1 Grounded Emitter Propagation Characteristics

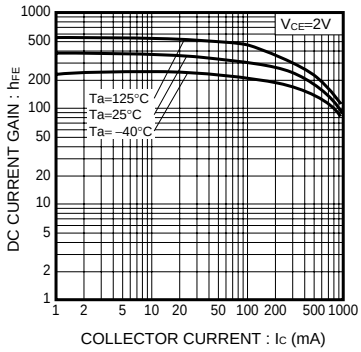


Fig.2 DC Current Gain vs. Collector Current

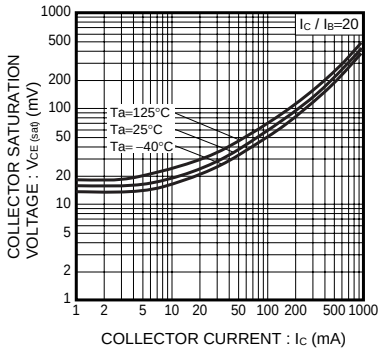


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current (I)

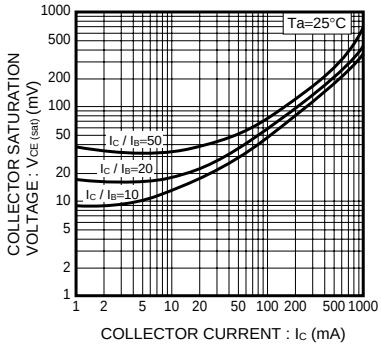


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (II)

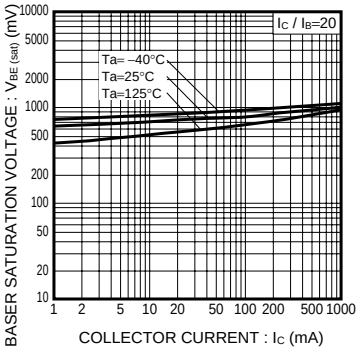


Fig.5 Base-Emitter Saturation Voltage vs.Collecter Current

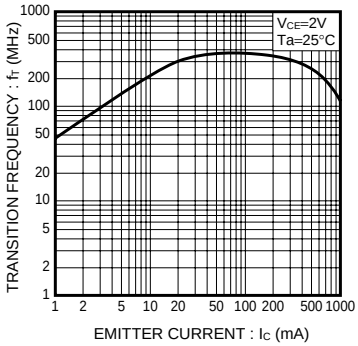


Fig.6 Gain Bandwidth Product vs. Emitter Current

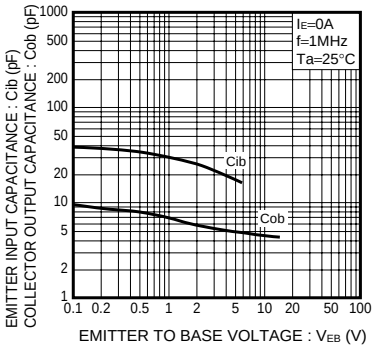


Fig.7 Collector Output Capacitance vs. Collector-Base Voltage
Emitter Input Capacitance vs. Emitter-Base Voltage

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