Medium power transistor (–60V, –0.5A)

2SA2088

●Features

1) High speed switching. (Tf : Typ. : 60ns at I_C = −500mA)
2) Low saturation voltage, typically
   (Typ. : −150mV at I_C = −100mA, I_B = −10mA)
3) Strong discharge power for inductive load and capacitance load.
4) Complements the 2SC5876

●Applications

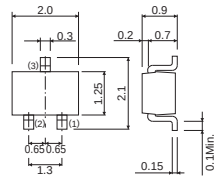
Small signal low frequency amplifier
High speed switching

●Structure

PNP Silicon epitaxial planar transistor

●Dimensions (Unit : mm)

UMT3



(1) Emitter
(2) Base
(3) Collector

Each lead has same dimensions

Abbreviated symbol : VM

●Packaging specifications

Type	Package	Taping
	Code	T106
	Basic ordering unit (pieces)	3000
2SA2088		◯

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit	
Collector-base voltage		V_{CBO}	–60	V	
Collector-emitter voltage		V_{CEO}	–60	V	
Emitter-base voltage		V_{EBO}	–6	V	
Collector current	DC	I_C	–0.5	A	
	Pulsed	I_{CP}	–1.0	A	∗1
Power dissipation		P_C	200	mW	∗2
Junction temperature		Tj	150	°C	
Range of storage temperature		Tstg	–55 to 150	°C	

∗1 Pw=10ms
∗2 Each terminal mounted on a recommended land

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-emitter breakdown voltage	BV_{CEO}	–60	–	–	V	I_C= –1mA
Collector-base breakdown voltage	BV_{CBO}	–60	–	–	V	I_C= –100μA
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	I_E= –100μA
Collector cut-off current	I_{CBO}	–	–	–1.0	μA	V_{CB}= –40V
Emitter cut-off current	I_{EBO}	–	–	–1.0	μA	V_{EB}= –4V
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	–	–150	–500	mV	I_C= –100mA I_B= –10mA
DC current gain	h_{FE}	120	–	270	–	V_{CE}= –2V I_C= –50mA
Transition frequency	f_T	–	400	–	MHz	V_{CE}= –10V ∗1 I_E=100mA f=10MHz
Corrector output capacitance	C_{ob}	–	10	–	pF	V_{CB}= –10V I_E=0A f=1MHz
Turn-on time	t_{on}	–	35	–	ns	I_C= –500mA ∗2 I_{B1}= –50mA I_{B2}=50mA V_{CC}≒ –25V
Storage time	t_{stg}	–	100	–	ns	
Fall time	t_f	–	60	–	ns	

∗1 Non repetitive pulse
∗2 See Switching charactaristics measurement circuits

●h_{FE} RANK

Q
120–270

●Electrical characteristic curves

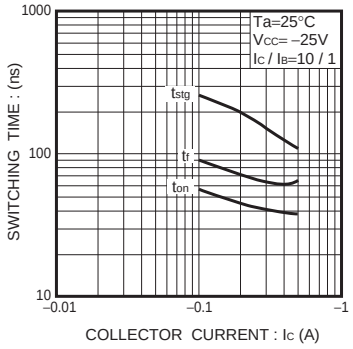


Fig.1 Switching Time

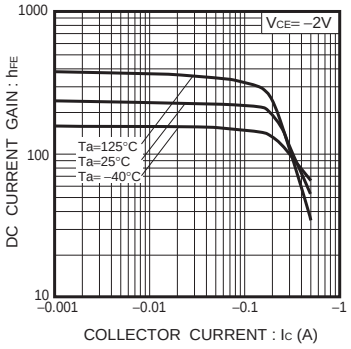


Fig.2 DC Current Gain vs. Collector Current (I)

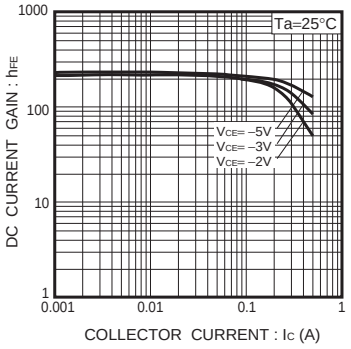


Fig.3 DC Current Gain vs. Collector Current (II)

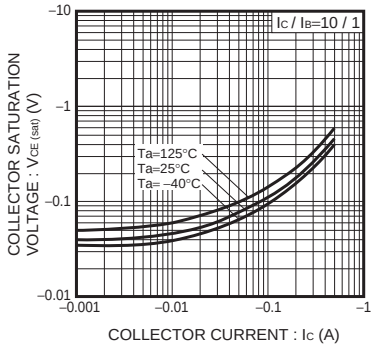


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (I)

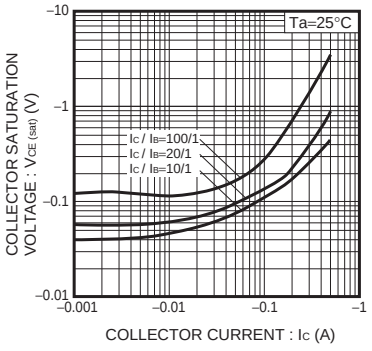


Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (II)

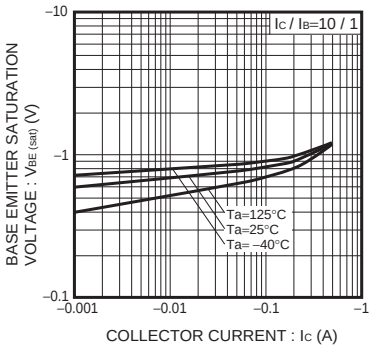


Fig.6 Base-Emitter Saturation Voltage vs. Collecter Current

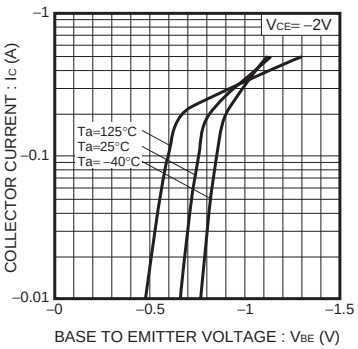


Fig.7 Grounded Emitter Propagation Characteristics

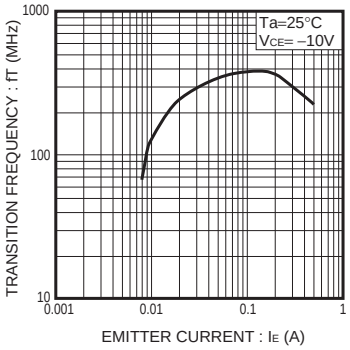


Fig.8 Transition Frequency

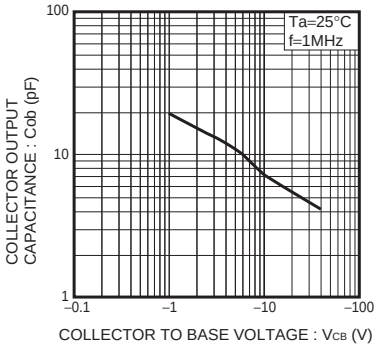
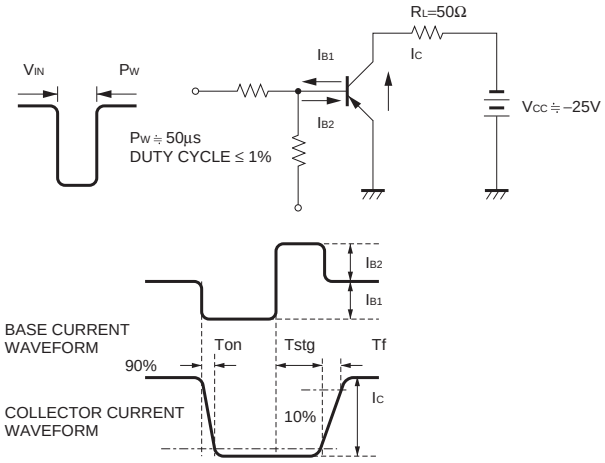


Fig.9 Collector Output Capacitance

●Switching characteristics measurement circuits



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