2SD2696

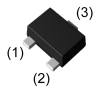
Low frequency transistor (for amplification)

Datasheet

Parameter	Value
V_{CEO}	30V
I_C	400mA

●Outline

VMT3



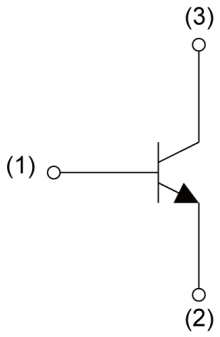
SOT-723
SC-105AA

●Features

1)The transistor of 400mA class which went only with 2012 size conventionally is attained in 1208 size.

2)Collector saturation voltage is low.
$V_{CE(sat)} \leqq 300mV$ at $I_C=100mA/I_B=2mA$

●Inner circuit



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

●Application

GENERAL PURPOSE SMALL SIGNAL AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
2SD2696	VMT3	1212	T2L	180	8	8000	UH

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●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	400	mA
	I_{CP} *1	800	mA
Power dissipation	P_D *2	150	mW
Junction temperature	T_j	150	℃
Range of storage temperature	T_{stg}	-55 to +150	℃

●Electrical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	I_C = 10μA	30	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA	30	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 10μA	6	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = 30V	-	-	100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 6V	-	-	100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 2mA	-	120	300	mV
DC current gain	h_{FE} *3	V_{CE} = 2V, I_C = 100mA	270	-	680	-
Transition frequency	f_T *3	V_{CE} = 2V, I_E = -100mA, f = 100MHz	-	400	-	MHz
Output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0mA, f = 1MHz	-	3.0	-	pF

*1 Pw=10ms, Single Pulse.

*2 Each terminal mounted on a reference land.

*3 Pulsed

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●Electrical characteristic curves(T_a = 25°C)

Fig.1 Ground Emitter Propagation Characteristics

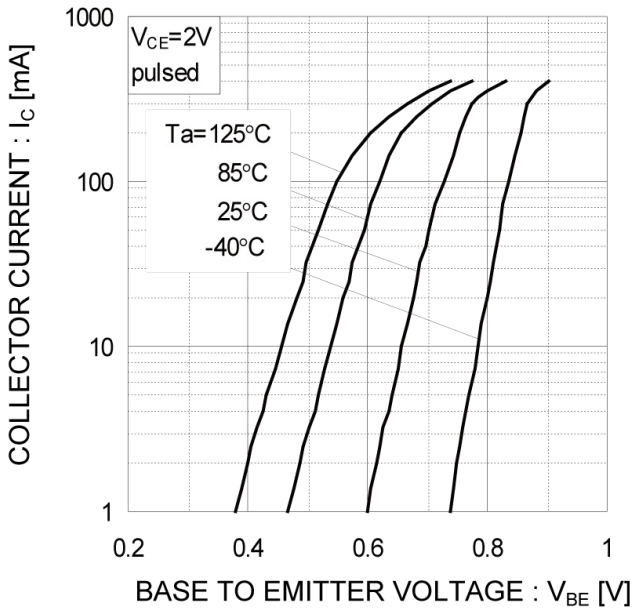


Fig.2 Typical Output Characteristics

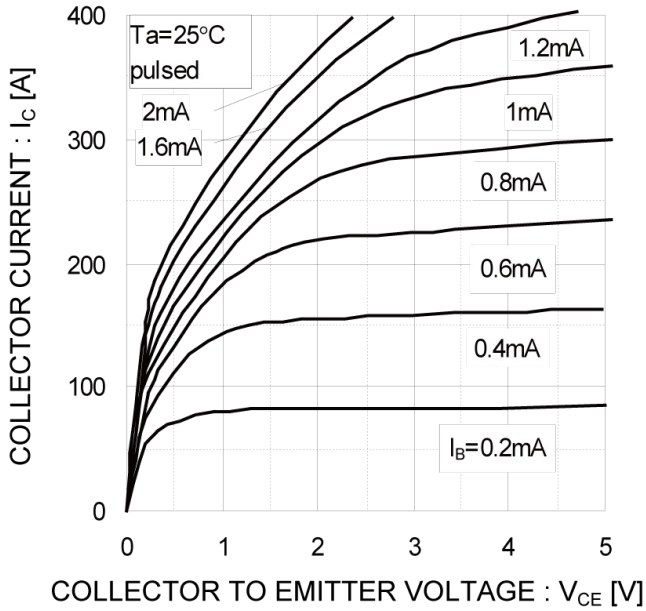


Fig.3 DC Current Gain vs. Collector Current (I)

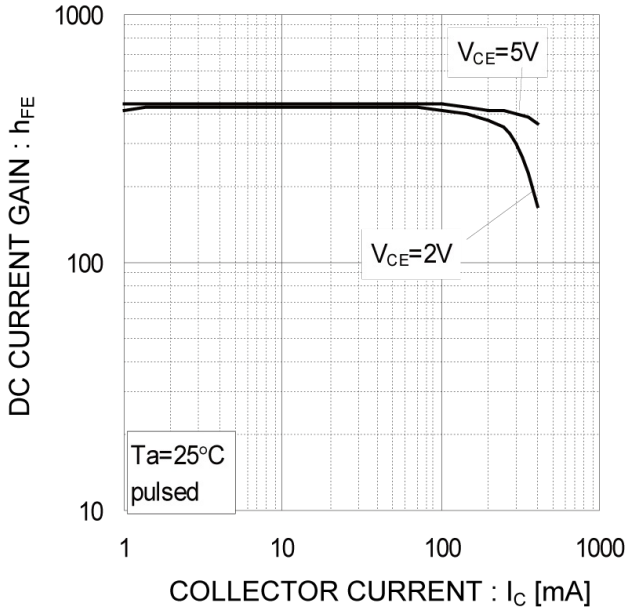
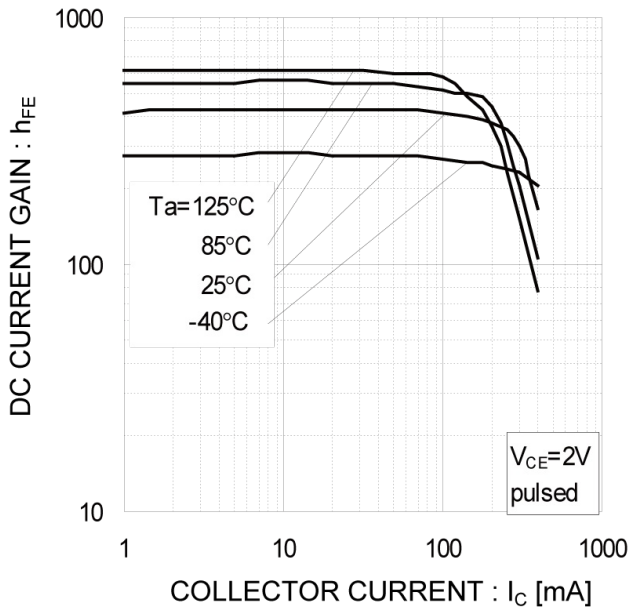


Fig.4 DC Current Gain vs. Collector Current (II)



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●Electrical characteristic curves(T_a = 25°C)

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

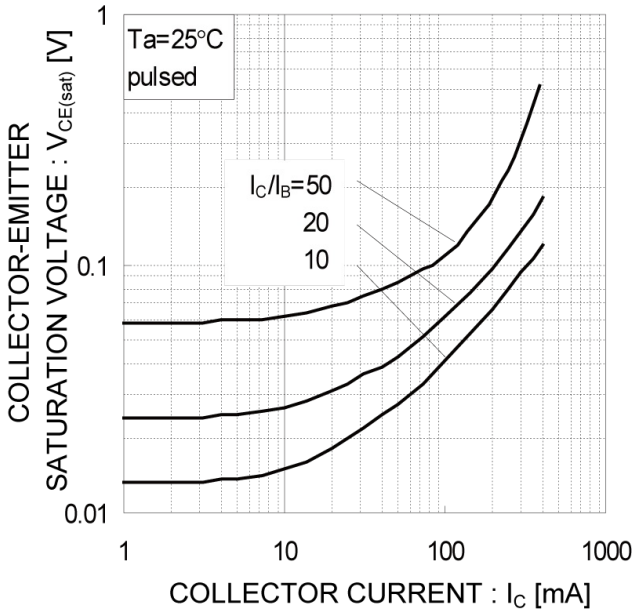


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

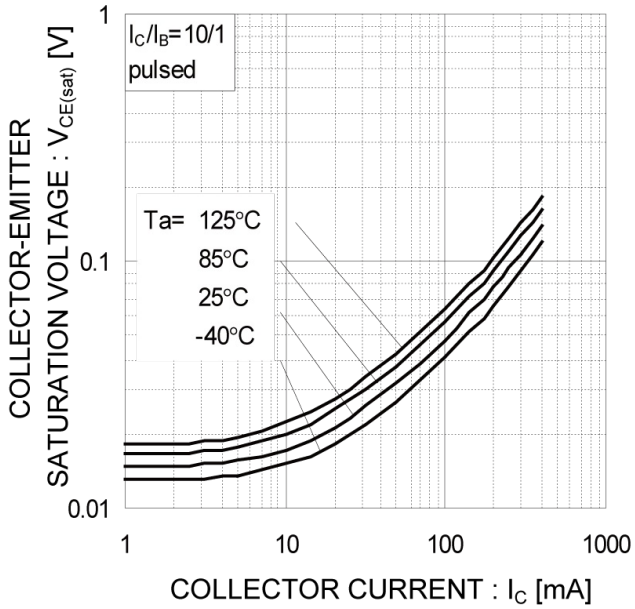


Fig.7 Collector-Emitter Saturation Voltage vs. Collector Current (III)

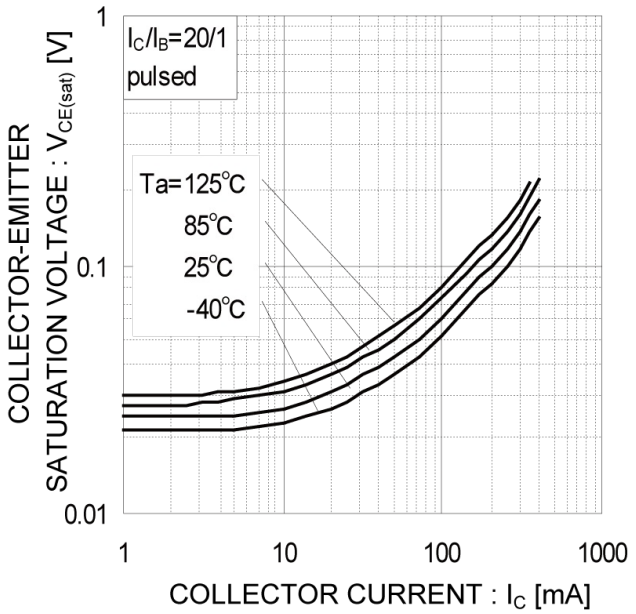
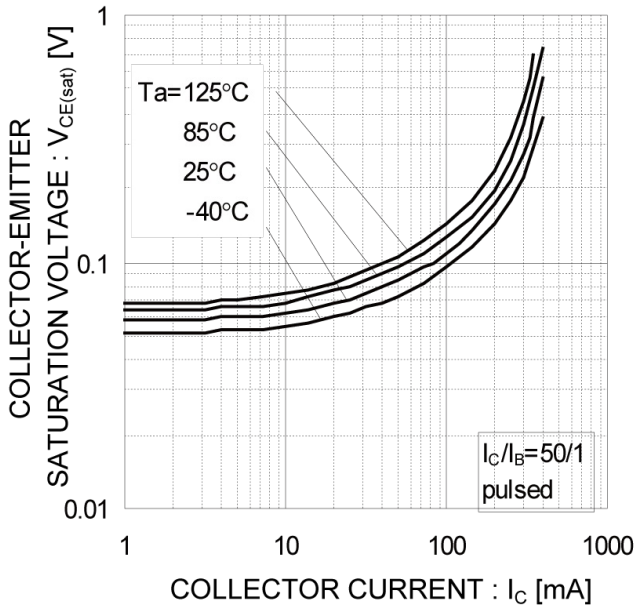


Fig.8 Collector-Emitter Saturation Voltage vs. Collector Current (IV)



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●Electrical characteristic curves(T_a = 25°C)

Fig.9 Gain Bandwidth Product vs. Emitter Current

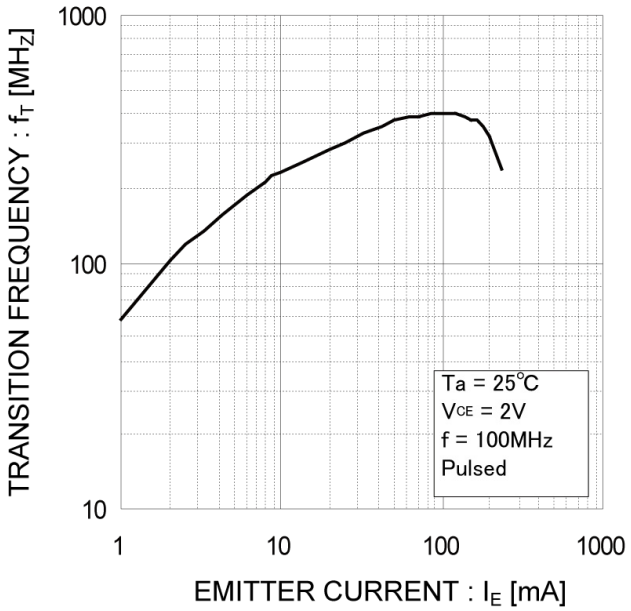
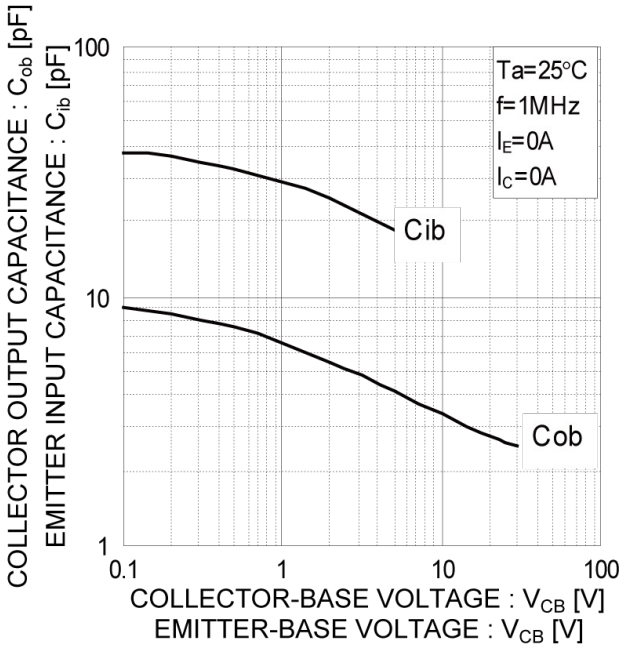


Fig.10 Emitter Input Capacitance vs. Emitter-Base Voltage
Collector Output Capacitance vs. Collector-Base Voltage



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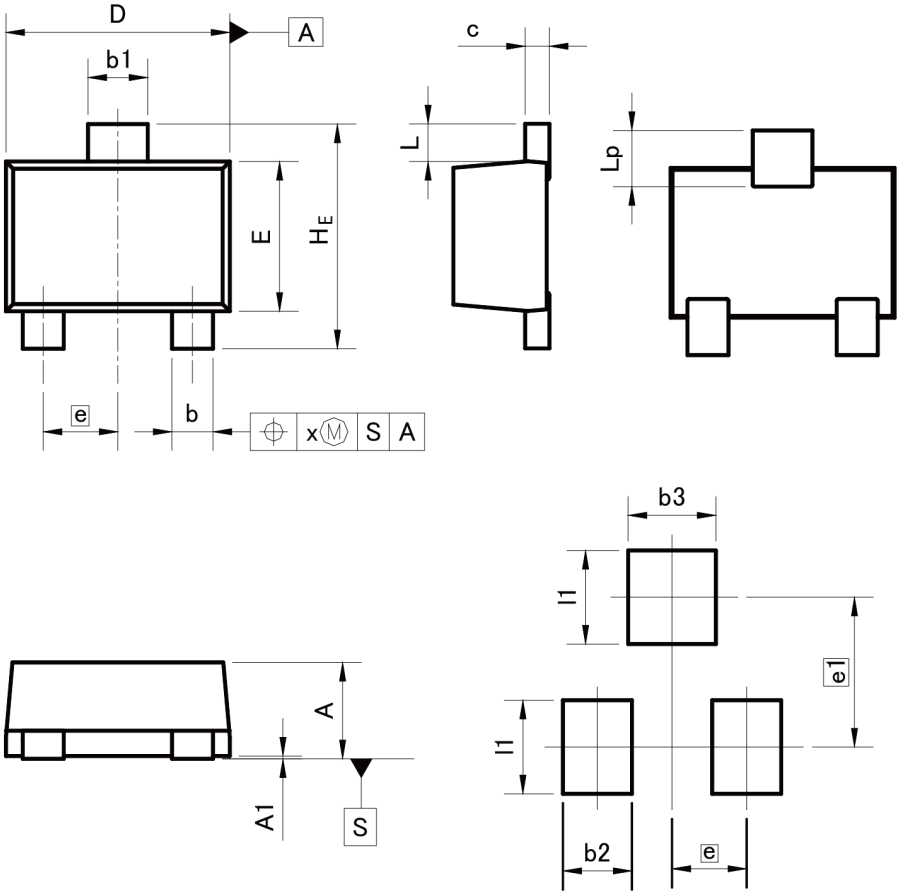
●Dimensions

VMT3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
b	0.17	0.27	0.007	0.011
b1	0.27	0.37	0.011	0.015
c	0.08	0.18	0.003	0.007
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
e	0.40		0.02	
HE	1.10	1.30	0.043	0.051
L	0.10	0.30	0.004	0.012
Lp	0.20	0.40	0.008	0.016
x	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	–	0.37	–	0.015
b3	–	0.47	–	0.019
e1	0.80		0.031	
l1	–	0.50	–	0.020

Dimension in mm/inches

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