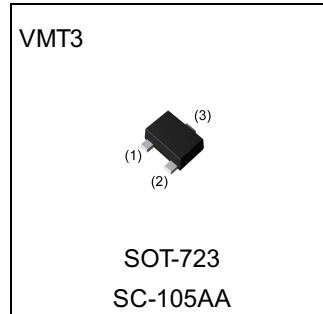


Parameter	Value
$V_{CEO}$	30V
$I_C$	400mA

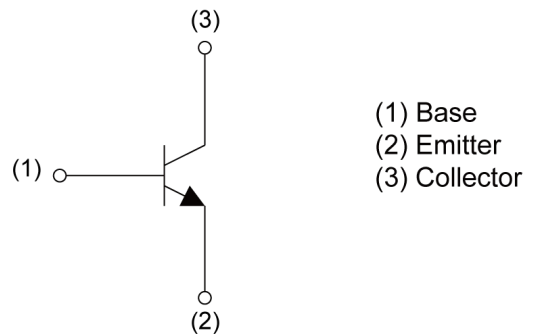
●Outline



●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.  
 $V_{CE(sat)} \leq 300\text{mV}$  at  $I_C=100\text{mA}/I_B=2\text{mA}$

●Inner circuit



●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

**● Absolute maximum ratings** ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Values	Unit
Collector-base voltage	$V_{\text{CBO}}$	30	V
Collector-emitter voltage	$V_{\text{CEO}}$	30	V
Emitter-base voltage	$V_{\text{EBO}}$	6	V
Collector current	$I_{\text{C}}$	400	mA
	$I_{\text{CP}}^{*1}$	800	mA
Power dissipation	$P_{\text{D}}^{*2}$	150	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Range of storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

**● Electrical characteristics** ( $T_a = 25^\circ\text{C}$ )

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

\*1  $P_w=10\text{ms}$ , Single Pulse.

\*2 Each terminal mounted on a reference land.

\*3 Pulsed

● Electrical characteristic curves ( $T_a = 25^\circ\text{C}$ )

Fig.1 Ground Emitter Propagation Characteristics

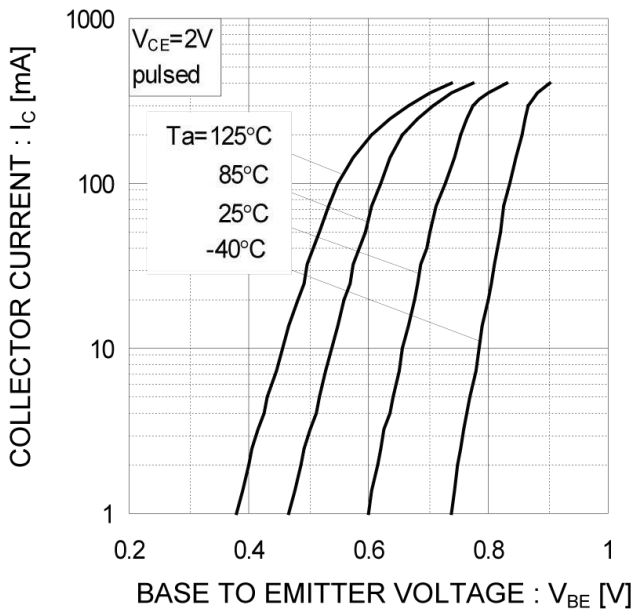


Fig.2 Typical Output Characteristics

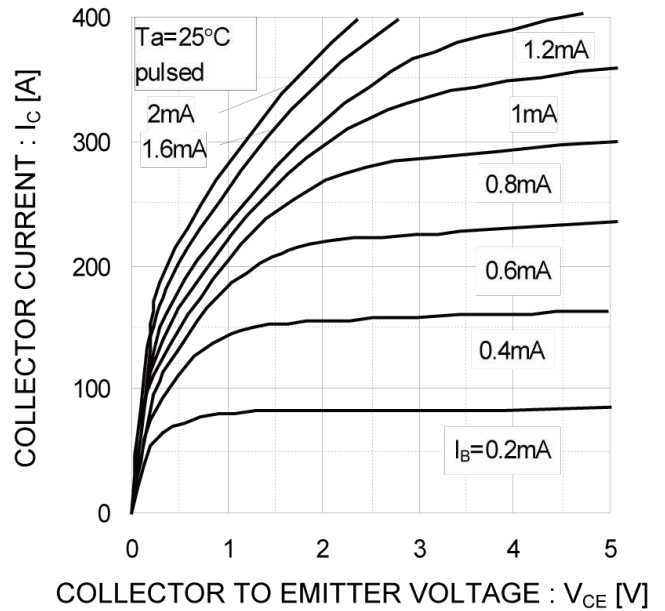


Fig.3 DC Current Gain vs. Collector Current (I)

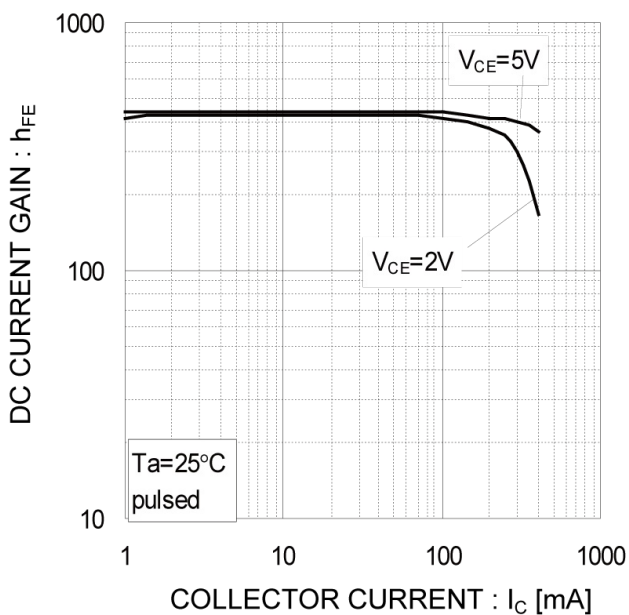
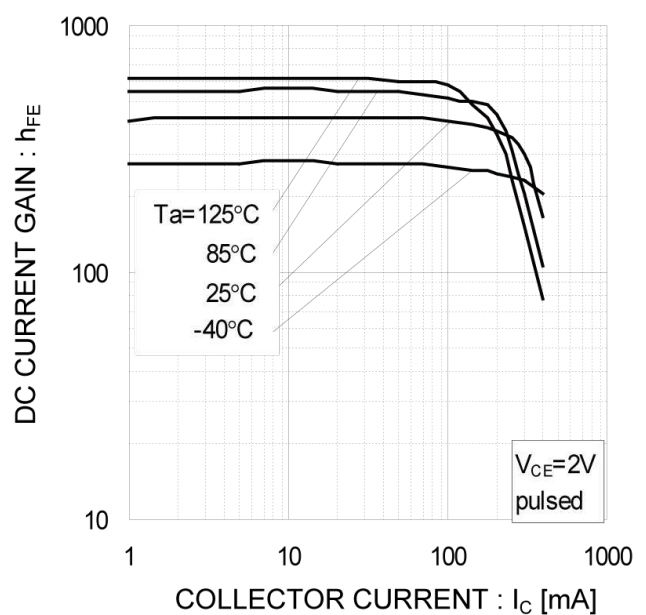


Fig.4 DC Current Gain vs. Collector Current (II)



● Electrical characteristic curves ( $T_a = 25^\circ\text{C}$ )

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

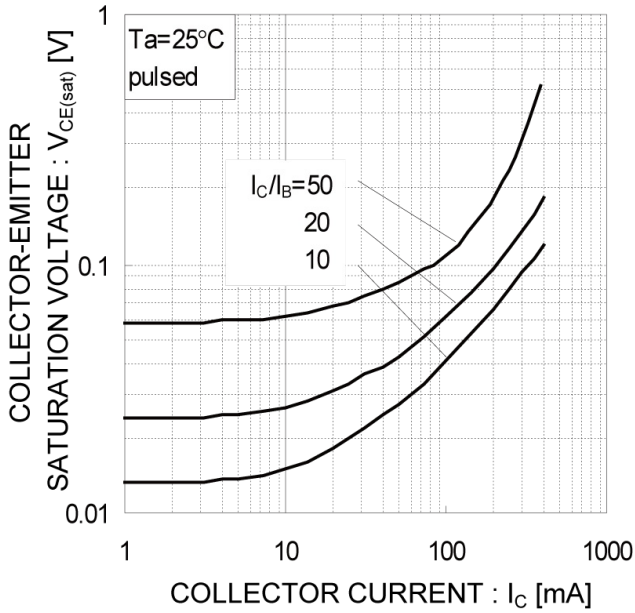


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

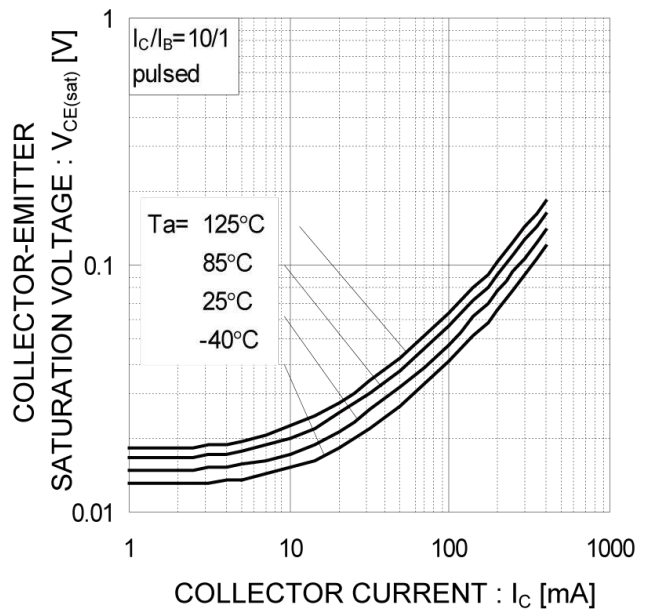


Fig.7 Collector-Emitter Saturation Voltage vs. Collector Current (III)

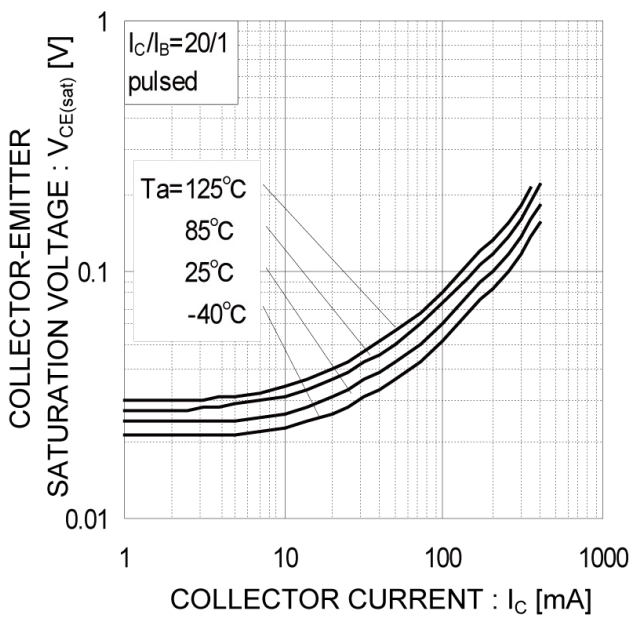
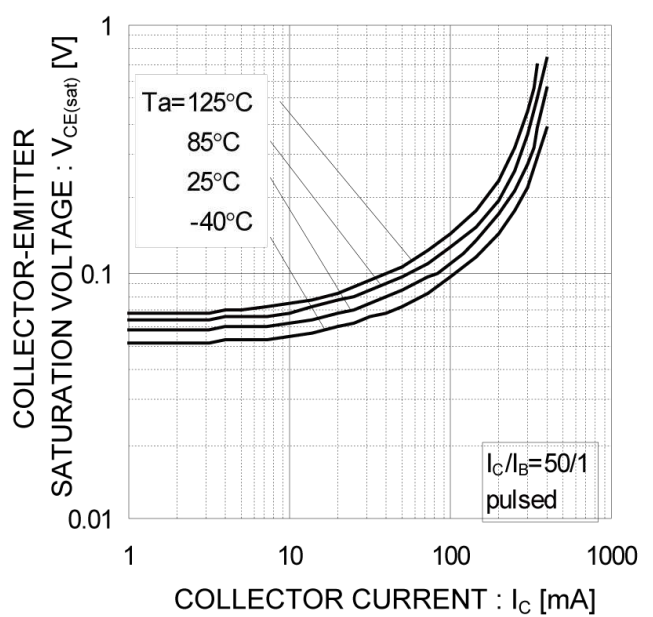


Fig.8 Collector-Emitter Saturation Voltage vs. Collector Current (IV)



●Electrical characteristic curves( $T_a = 25^\circ\text{C}$ )

Fig.9 Gain Bandwidth Product vs. Emitter Current

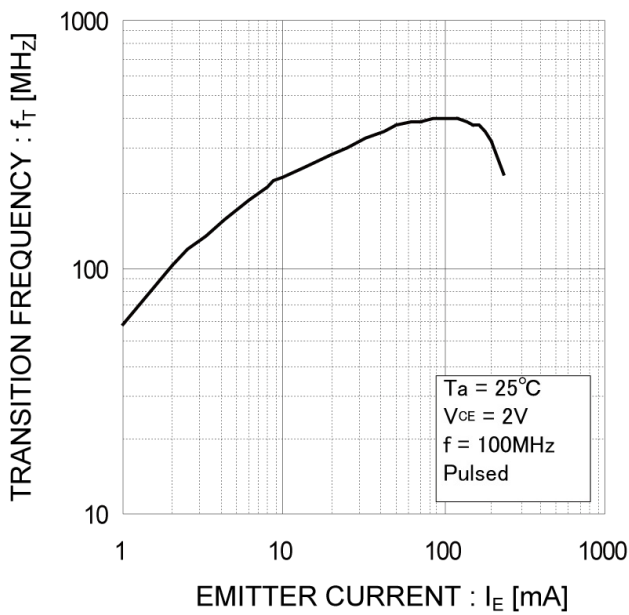
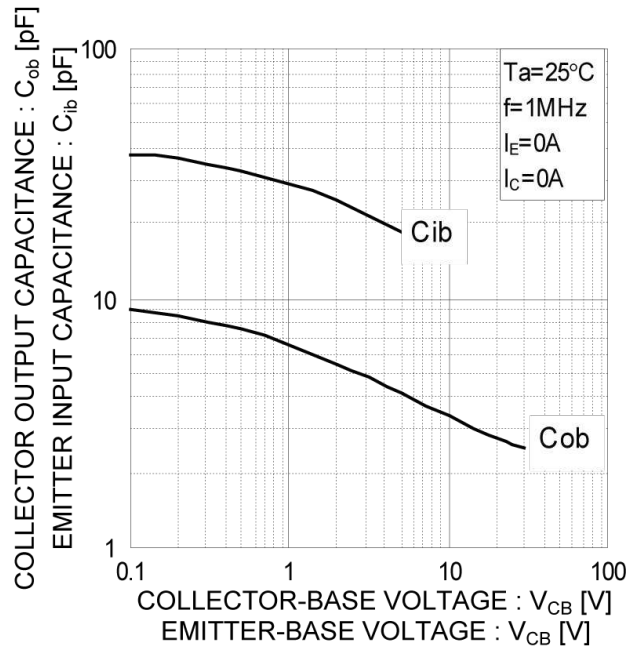
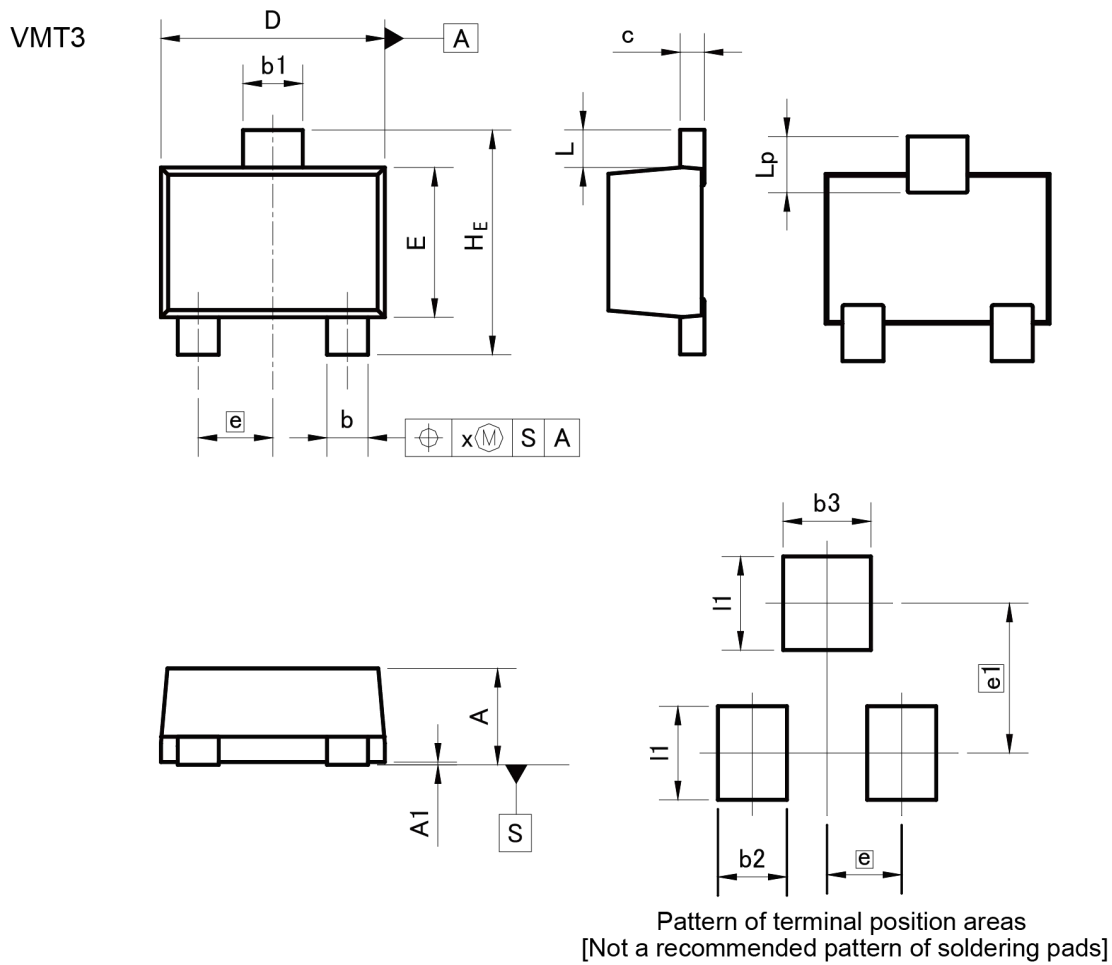


Fig.10 Emitter Input Capacitance vs. Emitter-Base Voltage  
Collector Output Capacitance vs. Collector-Base Voltage



●Dimensions



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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