

Low frequency transistor (for amplification)

2SD2696

●Structure

NPN Silicon Epitaxial Planar Transistor

●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.

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

●Applications

Switching

●Packaging specifications

Type	Package	Taping
	Code	T2L
	Basic ordering unit (pieces)	8000
2SD2696		○

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	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 / TOTAL
Junction temperature	T_J	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

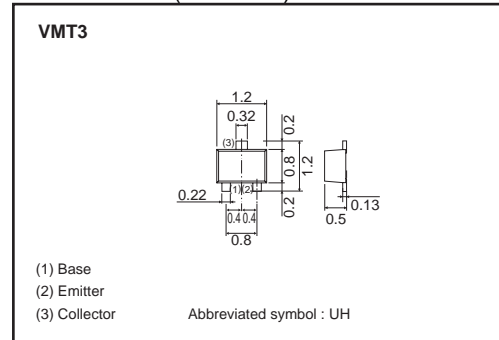
*1 $P_w=10\text{ms}$, Single pulse

*2 Each terminal mounted on a recommended land.

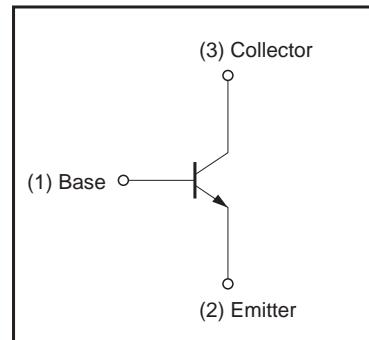
●Electrical characteristics (Ta=25°C)

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

●Dimensions (Unit : mm)



●Inner circuit



●Electrical characteristics curves

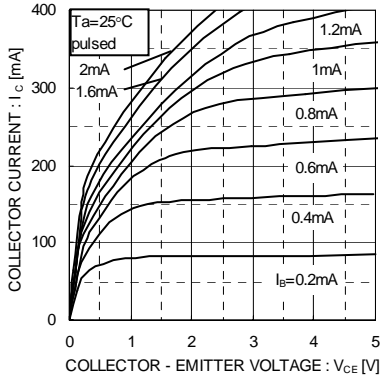


Fig.1 Typical Output Characteristics

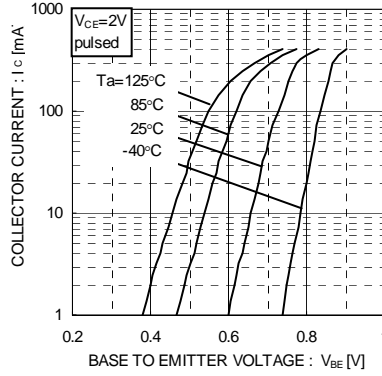


Fig.2 Grounded Emitter Propagation Characteristics

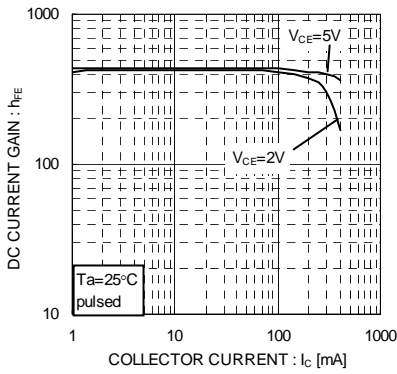


Fig.3 DC Current Gain vs Collector Current (I)

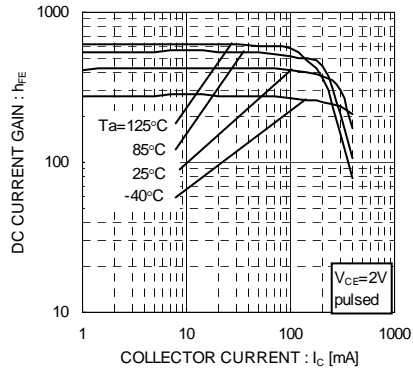


Fig.4 DC Current Gain vs Collector Current (II)

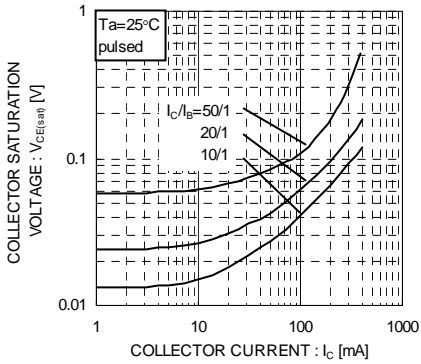


Fig.5 Collector-Emitter Saturation Voltage vs Collector Current (I)

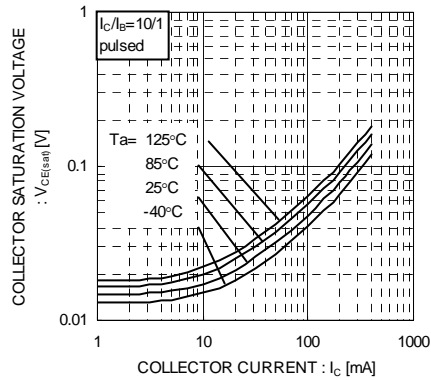


Fig.6 Collector-Emitter Saturation Voltage vs Collector Current (II)

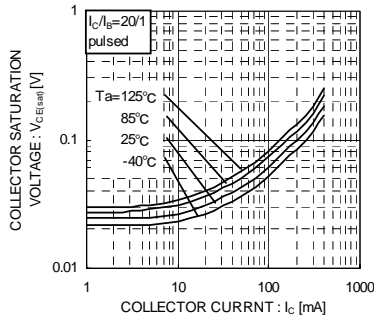


Fig.7 Collector-Emitter Saturation Voltage vs Collector Current (III)

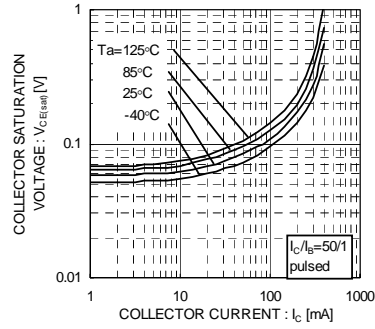


Fig.8 Collector-Emitter Saturation Voltage vs Collector Current (IV)

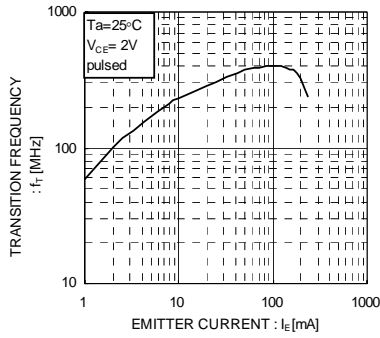


Fig.9 Transition frequency vs Emitter Collector

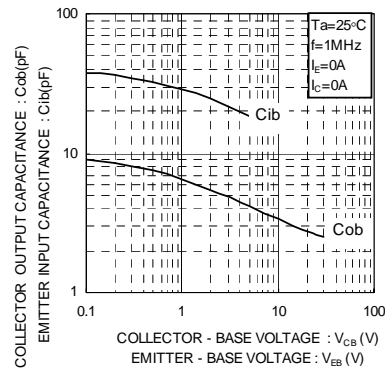


Fig.10 Emitter input capacitance vs. Emitter-Base Voltage
Collector output capacitance vs. Collector-Base Voltage

Notes

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