

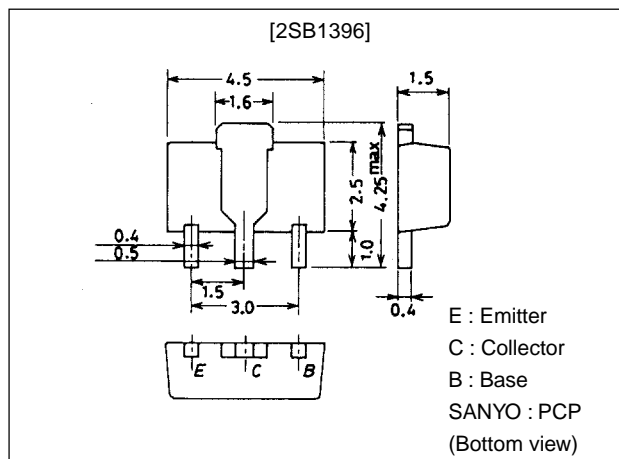
**2SB1396****DC-DC Converter, Motor Driver Applications****Features**

- Adoption of FBET, MBIT processes.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- Small size making it easy to provide high-density, small-sized hybrid ICs.

**Package Dimensions**

unit:mm

2038

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		-15	V
Collector-to-Emitter Voltage	$V_{CEO}$		-10	V
Emitter-to-Base Voltage	$V_{EBO}$		-7	V
Collector Current	$I_C$		-3	A
Collector Current (Pulse)	$I_{CP}$		-5	A
Collector Dissipation	$P_C$	Mounted on ceramic PCB (250mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

**Electrical Characteristics at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-12V, I_E=0$			-100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-6V, I_C=0$			-100	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=-2V, I_C=-0.5A$	140*		560*	
	$h_{FE2}$	$V_{CE}=-2V, I_C=-3A$	70			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-2V, I_C=-0.3A$		400		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, f=1MHz$		26		pF

\* : The 2SB1396 is classified by 0.5A  $h_{FE}$  as follows :

140	S	280	200	T	400	280	U	560
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Marking : BO

 $h_{FE}$  rank : S, T, U

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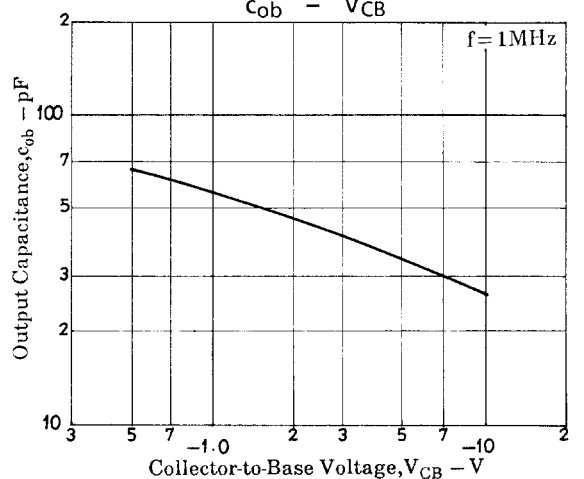
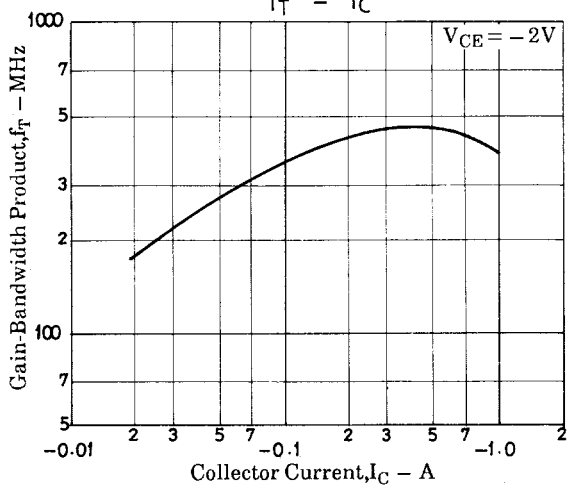
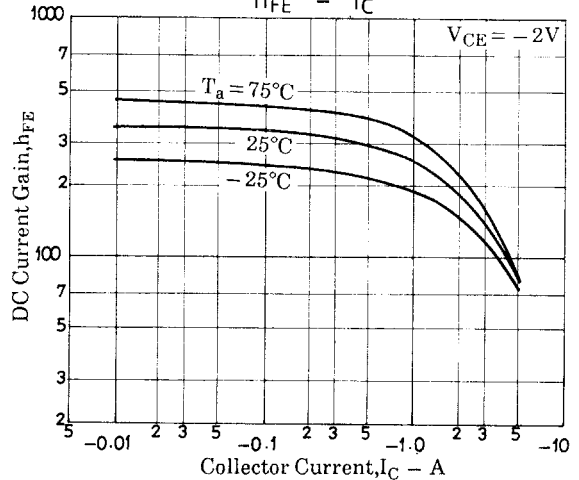
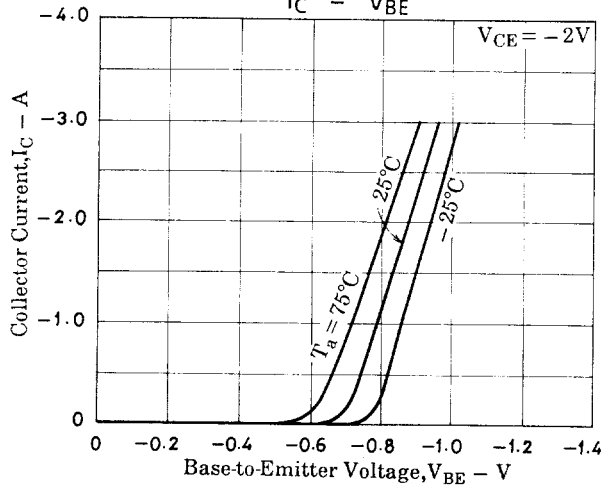
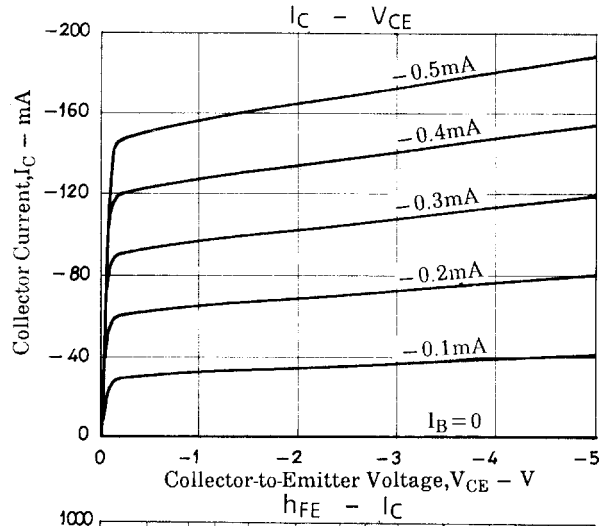
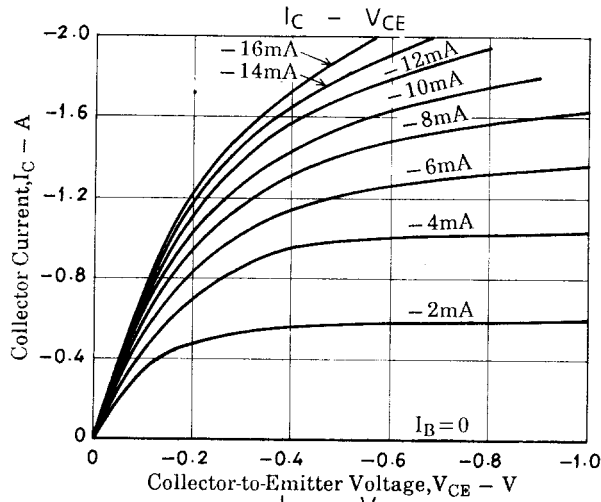
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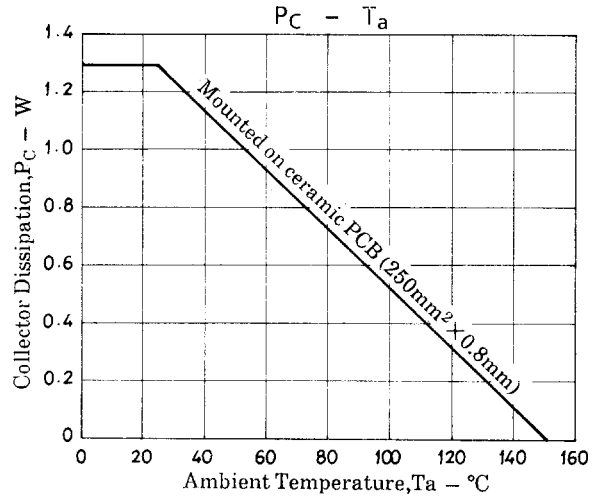
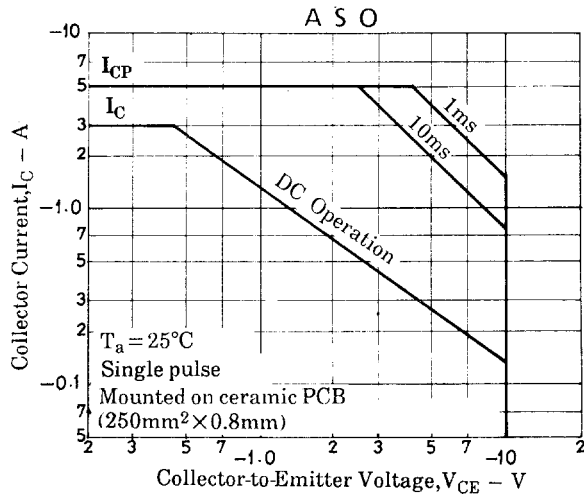
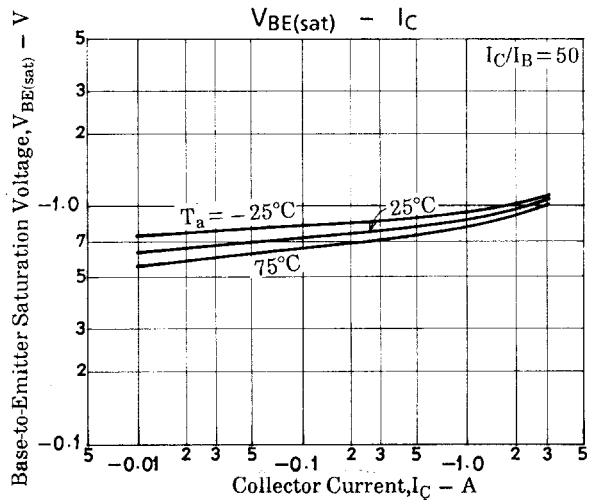
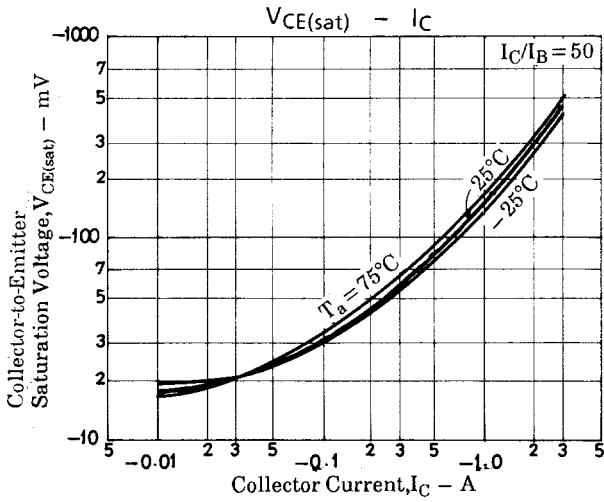
O1598HA (KT)/D168MO, TS No.2911-1/3

# 2SB1396

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1.5A, I_B = -30mA$		-220	-400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1.5A, I_B = -30mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-10			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-7			V



## 2SB1396



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