

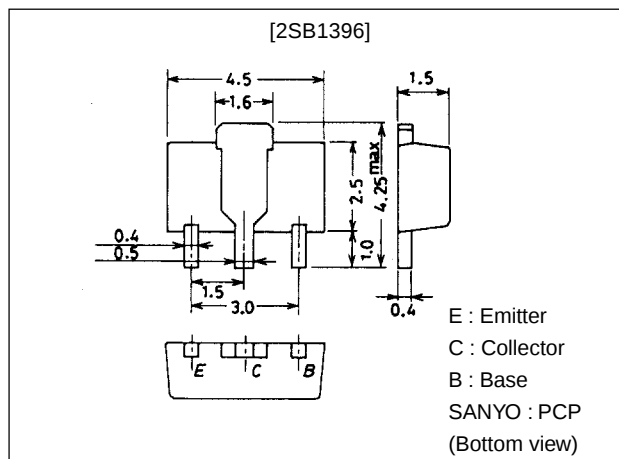
**2SB1396****DC-DC Converter, Motor Driver Applications****Features**

- 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 ² ×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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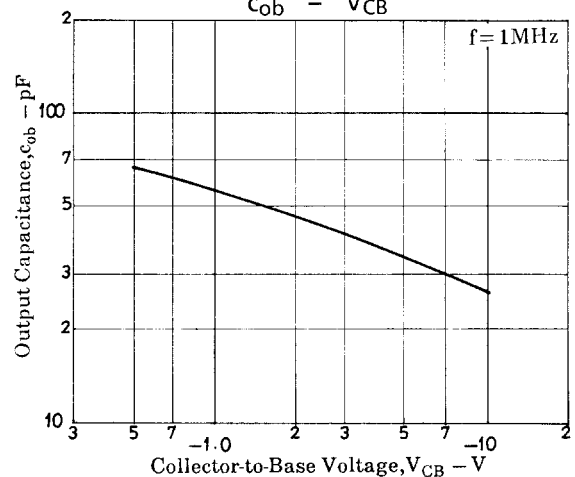
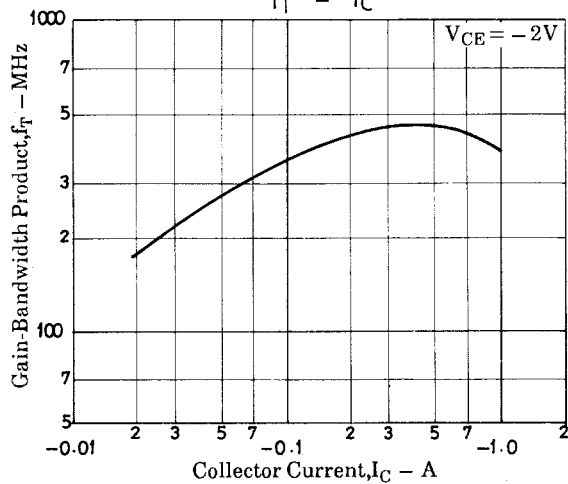
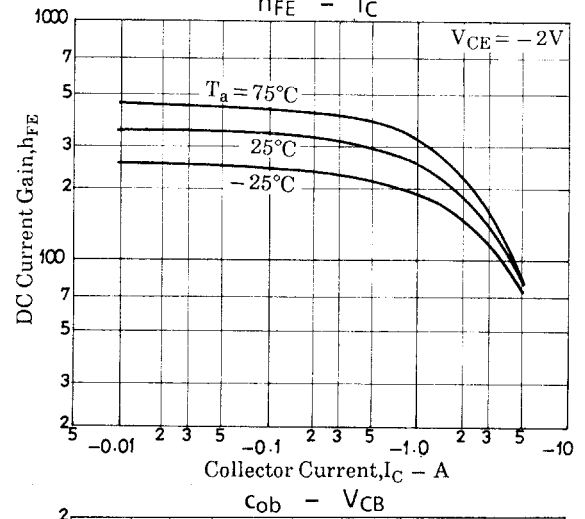
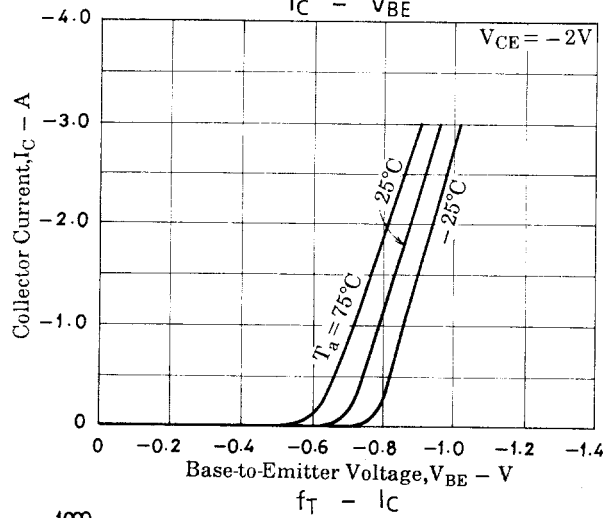
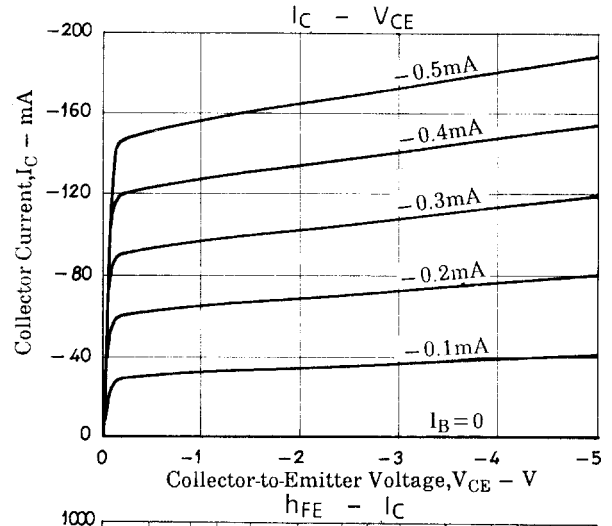
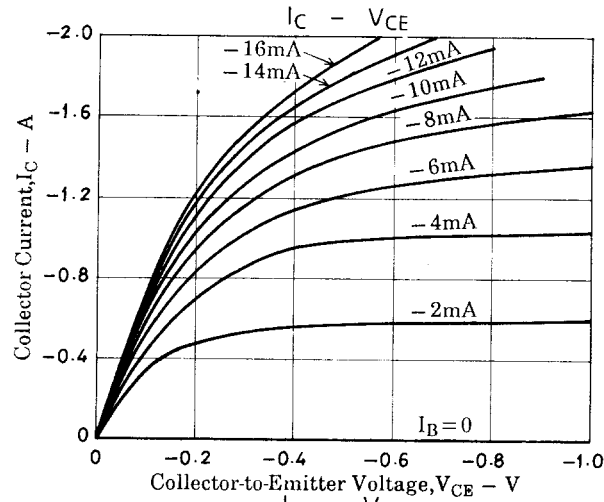
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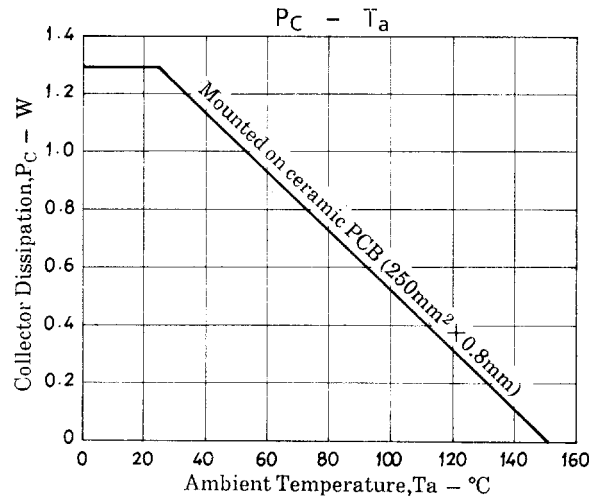
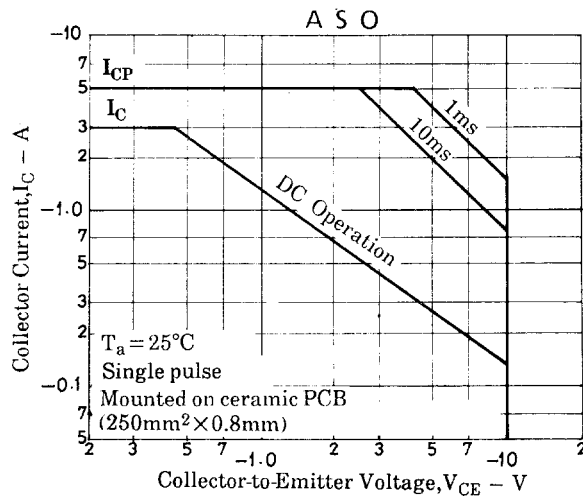
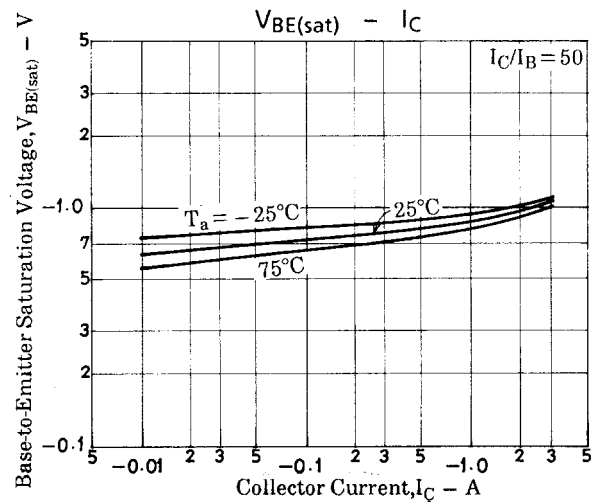
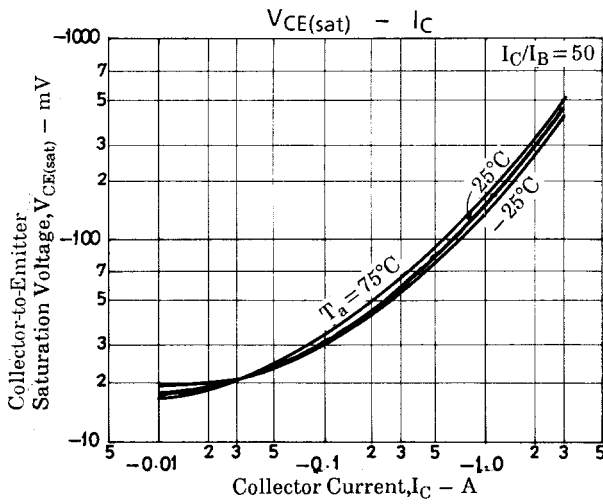
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O1598HA (KT)/D168MO, TS No.2911-1/3

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





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