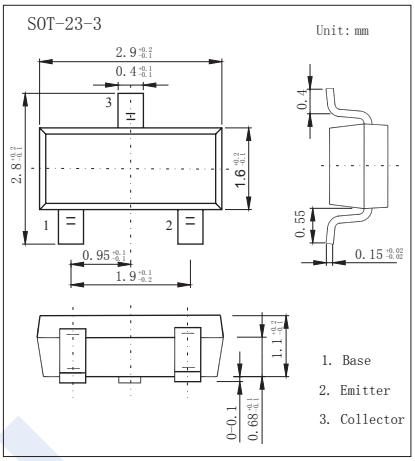
NPN Transistors

2SD596



■ Features

- High DC Current gain.
- Complimentary to 2SB624

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	30	V
Collector - Emitter Voltage	V_{CEO}	25	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	700	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	30			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	25			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 30 V , I_E= 0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			100	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	I_C=700 mA, I_B=70mA			0.6	V
Base - emitter saturation voltage (Note.1)	$V_{BE(sat)}$	I_C=700 mA, I_B=70mA			1.2	
Base - emitter voltage (Note.1)	V_{BE}	V_{CE}= 6V, I_C= 10mA	0.6		0.7	
DC current gain (Note.1)	$h_{FE(1)}$	V_{CE}= 1V, I_C= 100mA	110		400	
	$h_{FE(2)}$	V_{CE}= 1V, I_C= 700mA	50			
Collector output capacitance	C_{ob}	V_{CB}= 6V, I_E= 10mA , f=10MHz		12		pF
Transition frequency	f_T	V_{CE}= 6V, I_C= 10mA	170			MHz

Note.1: Pulse test : Pulse width ≤350μs,Duty Cycle≤2%.

■ Classification of $h_{fe(1)}$

Type	2SD596-DV1	2SD596-DV2	2SD596-DV3	2SD596-DV4	2SD596-DV5
Range	110-180	135-220	170-270	200-320	250-400
Marking	DV1	DV2	DV3	DV4	DV5

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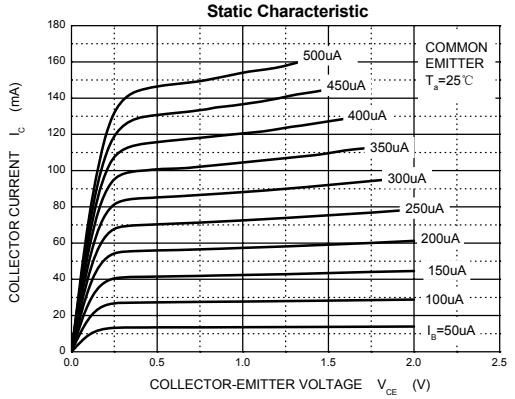
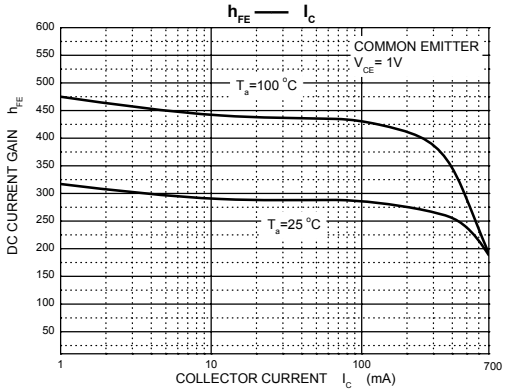
2SD596

■ Typical Characterisitics

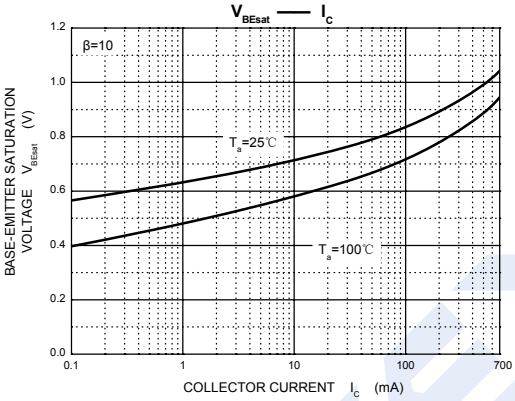
Static Characteristic



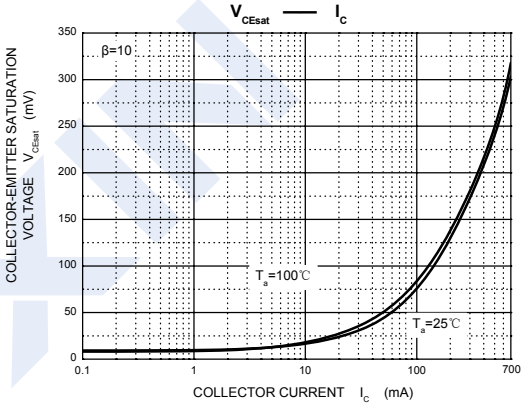
h_{FE} — I_C



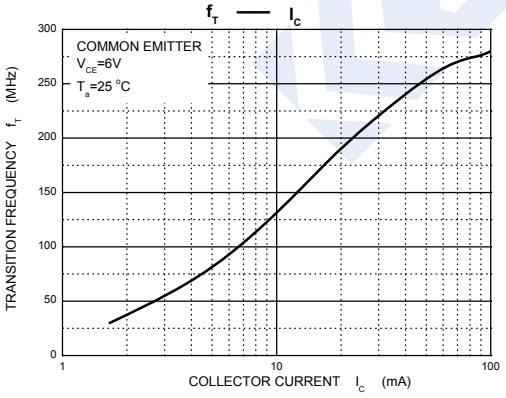
V_{BEsat} — I_C



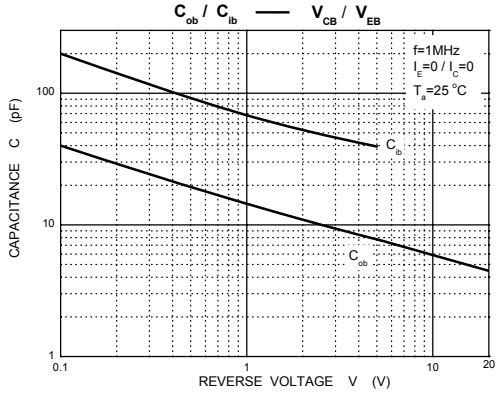
V_{CEsat} — I_C



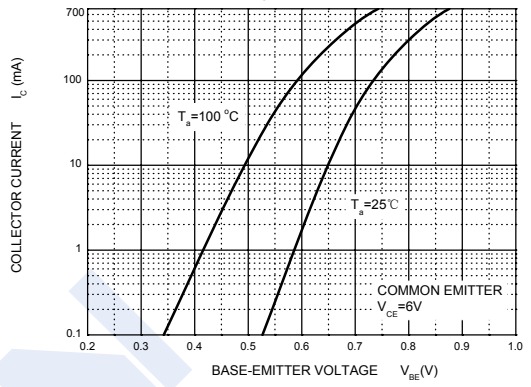
f_T — I_C



C_{ob} / C_{ib} — V_{CB} / V_{EB}



I_C — V_{BE}



P_c — T_a