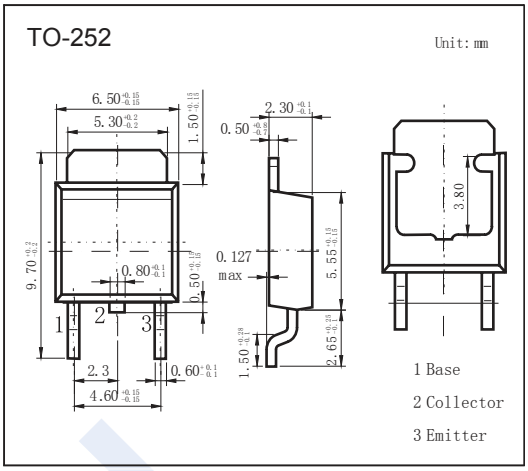
PNP Transistors

2SB936A



■ Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$
- High-speed switching

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-50	V
Collector - Emitter Voltage	V_{CEO}	-40	
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-10	A
Collector current - Pulse	I_{CP}	-20	
Collector Power Dissipation Tc = 25°C	P_C	40	W
Collector Power Dissipation Ta = 25°C		1.3	
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	-50			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -10 mA, I_B=0	-40			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μ A, I_C=0	-5			
Collector-base cut-off current	I_{CBO}	V_{CB}= -50V , I_E=0			-50	uA
Emitter cut-off current	I_{EBO}	V_{EB}= -5V , I_C=0			-50	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10 A, I_B=-330mA			-0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=-10 A, I_B=-330mA			-1.5	
DC current gain	$h_{FE(1)}$	V_{CE}= -2V, I_C= -100mA	45			
	$h_{FE(2)}$	V_{CE}= -2V, I_C= -3 A	90		260	
Turn-on time	t_{on}	I_C = – 3A, I_{B1} = –100mA, I_{B2} = 100mA		0.1		us
Storage time	t_{stg}			0.5		
Fall time	t_f			0.1		
Collector output capacitance	C_{ob}	V_{CB} = –10V, I_E = 0, f = 1MHz		400		pF
Transition frequency	f_T	V_{CE}= -10V, I_C= -500mA,f=10MHz		100		MHz

■ Classification of $h_{fe(2)}$

Type	2SB936A-Q	2SB936A-P
Range	90-180	130-260

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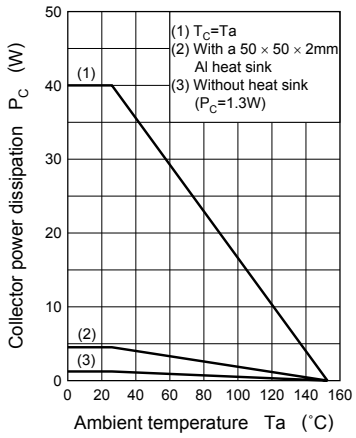
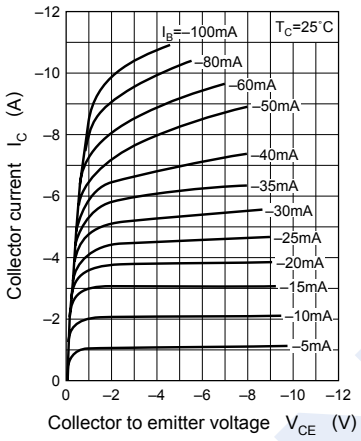
■ Typical Characterisitics

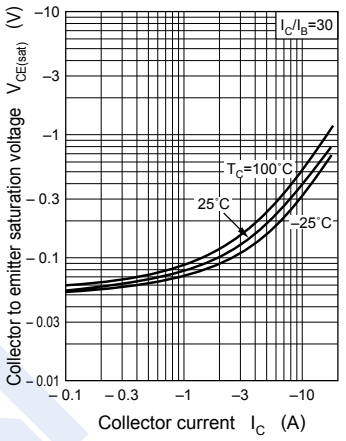
P_C — Ta



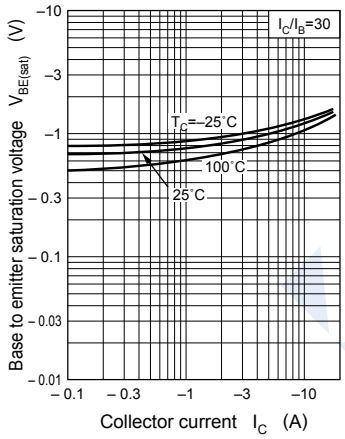
I_C — V_{CE}



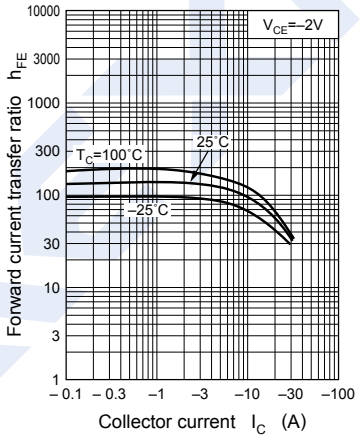
$V_{CE(sat)}$ — I_C



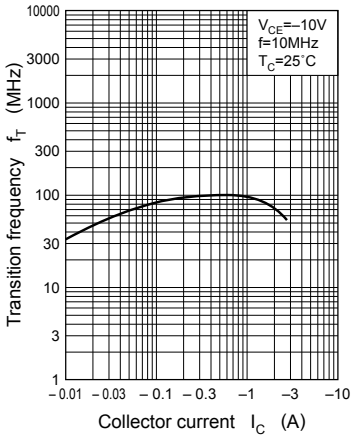
$V_{BE(sat)}$ — I_C



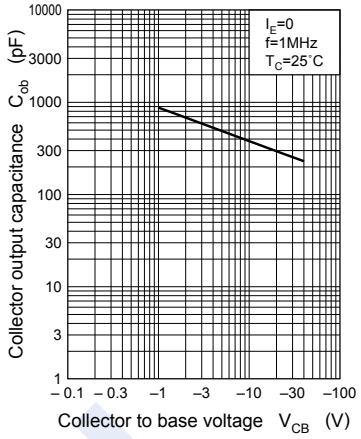
h_{FE} — I_C



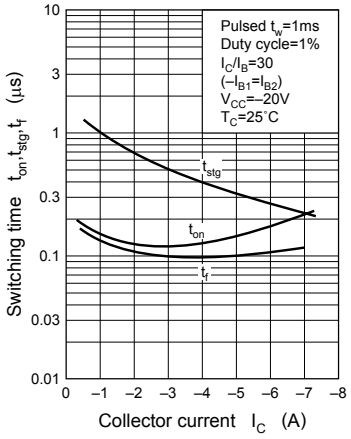
f_T — I_C



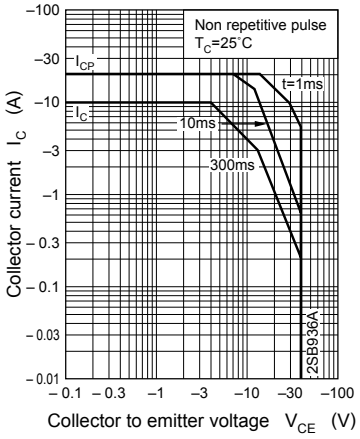
C_{ob} — V_{CB}



t_{on}, t_{stg}, t_f — I_C



Area of safe operation (ASO)



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■ Typical Characterisitics

$R_{th(t)}$ — t