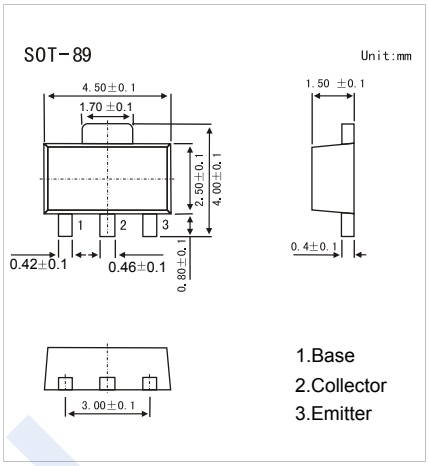
NPN Transistors

2SC5785



■ Features

- High DC current gain: h_{FE} = 400 to 1000
- Low collector-emitter saturation voltage
- High-speed switching

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Collector - Base Voltage		V_{CBO}	20	V
Collector - Emitter Voltage		V_{CEO}	10	
Emitter - Base Voltage		V_{EBO}	7	
Collector Current - Continuous		I_C	2	A
Collector Current - Pulse		I_{CP}	3.5	
Base Curren		I_B	200	mA
Collector Power Dissipation	t = 10 s	P_C	2	W
	DC		1	
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	20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 10 mA, I_B= 0	10			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	7			
Collector-base cut-off current	I_{CBO}	V_{CB}= 20V , I_E= 0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 7V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=600 mA, I_B=12mA			0.12	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=600 mA, I_B=12mA			1.1	
DC current gain	h_{FE}	V_{CE}= 2V, I_C= 200mA	400		1000	
		V_{CE}= 2V, I_C= 600mA	200			
Rise time	t_r	See Figure 1 circuit diagram. V_{CC} =− 6 V, R_L = 10 Ω I_{B1} = −I_{B2} = 12 mA		60		ns
Storage time	t_{stg}			215		
Fall time	t_f			25		

■ Marking

Marking	3E

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■ Typical Characterisitics

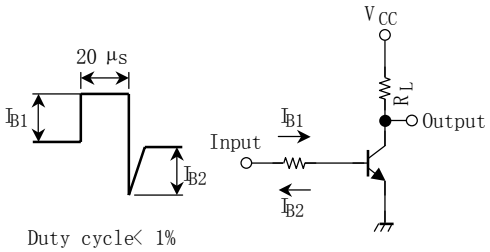
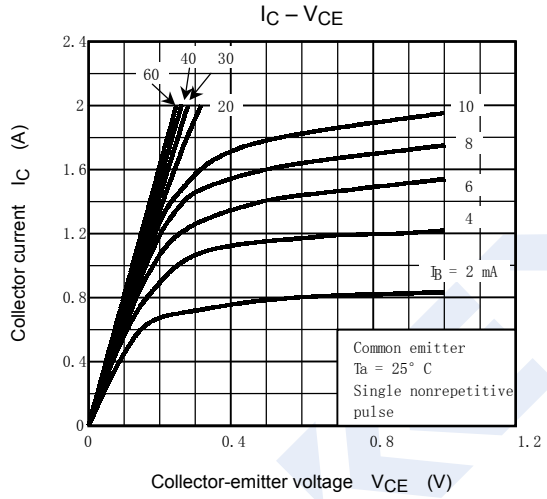
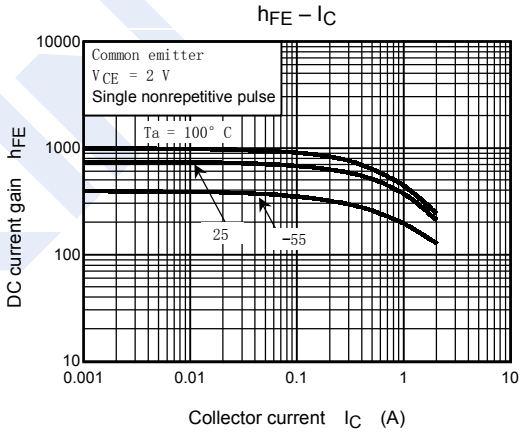
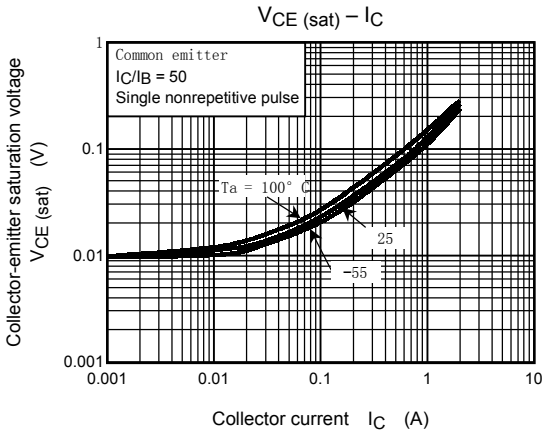
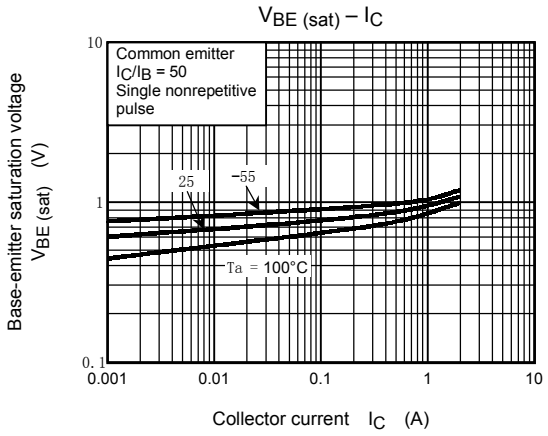


Figure 1 Switching Time Test Circuit & Timing Chart









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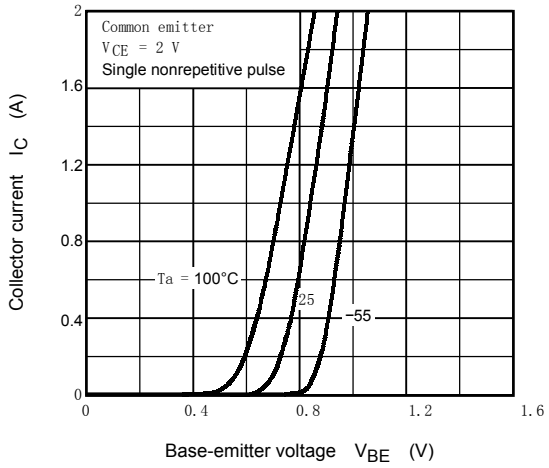
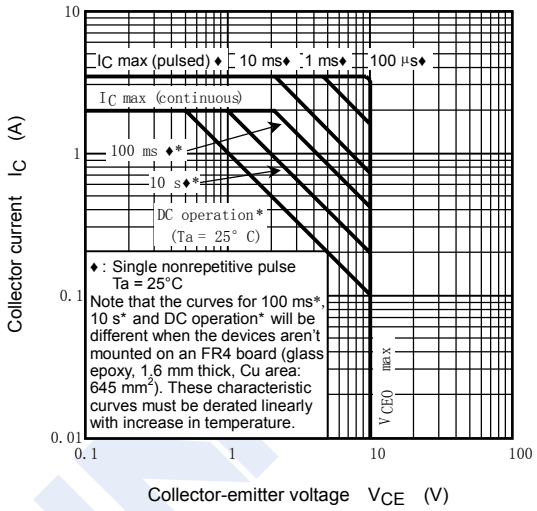
■ Typical Characterisitics

$I_C - V_{BE}$



Safe Operating Area



$r_{th} - t_w$