

NPN Transistors

2SD1623

■ Features

- Low collector-to-emitter saturation voltage.
- Large current capacity and wide ASO.
- Fast switching speed.
- Complementary to 2SB1123

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	60	V
Collector - Emitter Voltage	V _{CE0}	50	
Emitter - Base Voltage	V _{EB0}	6	
Collector Current - Continuous	I _C	2	A
Collector Current - Pulse	I _{CP}	4	
Collector Power Dissipation (Note.1)	P _C	0.5 1.3	W
Junction Temperature	T _J	150	
Storage Temperature Range	T _{stg}	-55 to 150	°C

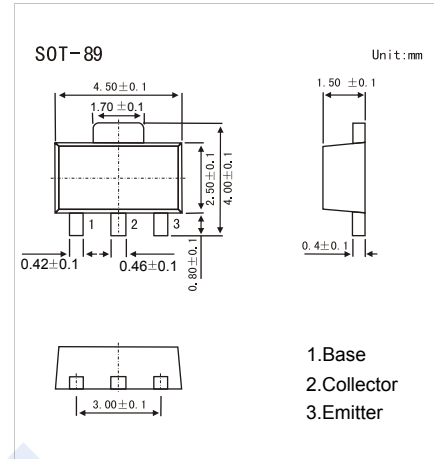
Note.1: Mounted on ceramic board (250mm² × 0.8mm)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _C = 100 μA, I _E = 0	60			V
Collector- emitter breakdown voltage	V _{CE0}	I _C = 1 mA, R _{BE} = ∞	50			
Emitter - base breakdown voltage	V _{EB0}	I _E = 100 μA, I _C = 0	6			
Collector-base cut-off current	I _{CB0}	V _{CB} = 50 V, I _E = 0			0.1	μA
Emitter cut-off current	I _{EB0}	V _{EB} = 4V, I _C = 0			0.1	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 1 A, I _B = 50 mA		0.15	0.4	V
Base - emitter saturation voltage	V _{BE(sat)}	I _C = 1 A, I _B = 50 mA		0.9	1.2	
DC current gain	h _{FE}	V _{CE} = 2V, I _C = 100 mA	100		560	
		V _{CE} = 2V, I _C = 1.5 A	40			
Turn-ON Time	t _{on}	See specified Test Circuit.		60		ns
Storage Time	t _{stg}			550		
Fall Time	t _f			30		
Collector output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f=1MHz		12		pF
Transition frequency	f _T	V _{CE} = 10V, I _C = 50mA		150		MHz

■ Classification of h_{FE}(1)

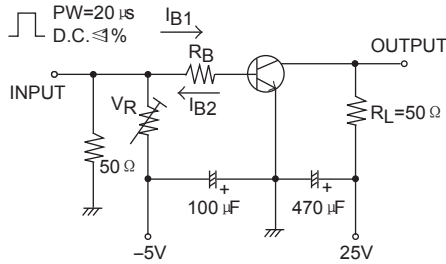
Type	2SD1623-R	2SD1623-S	2SD1623-T	2SD1623-U
Range	100-200	140-280	200-400	280-560
Marking	DF R*	DF S*	DF T*	DF U*



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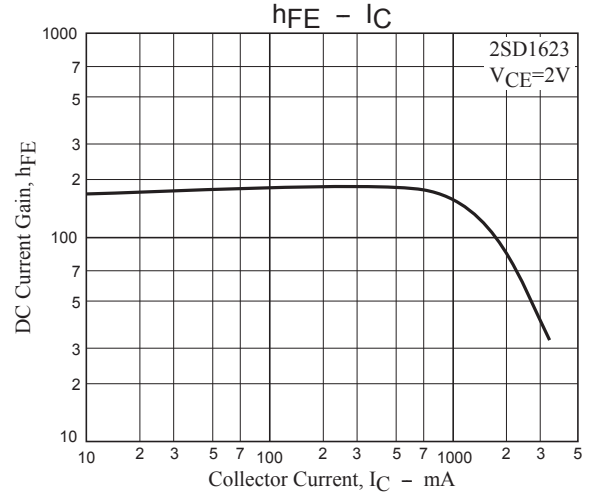
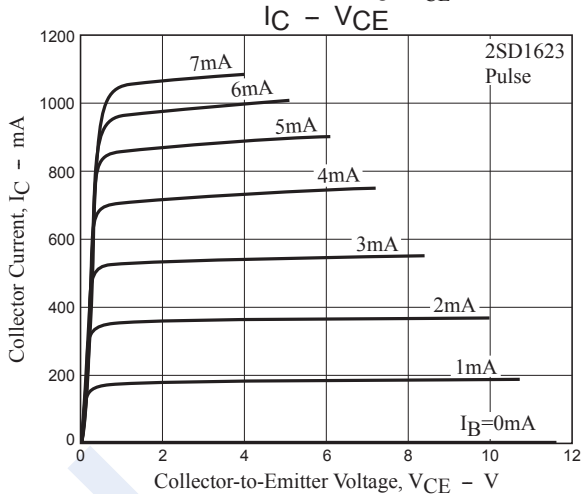
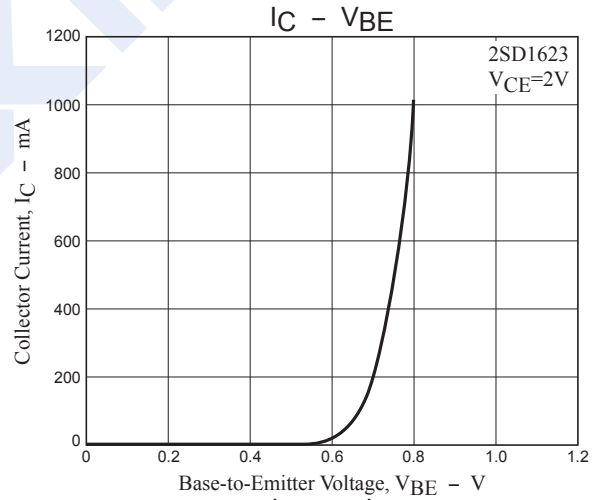
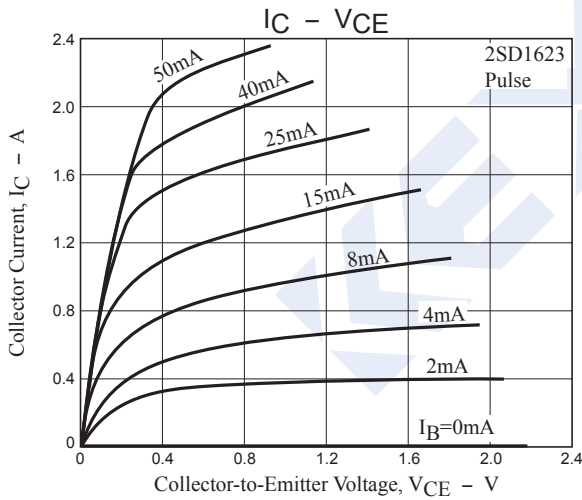
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Switching Time Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$
 (For PNP, the polarity is reversed)

■ Typical Characteristics



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■ Typical Characteristics

