

## 2SC5785 TRANSISTOR (NPN)

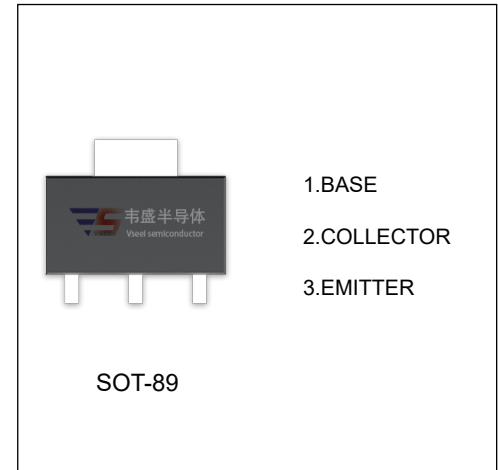
### FEATURES

- High-Speed Switching Applications
- DC-DC Converter Applications
- Strobe Applications

Marking: 3E

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	20	V
V <sub>CEO</sub>	Collector-Emitter Voltage	10	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current -Continuous	2	A
I <sub>CP</sub>	Collector Current –Pulse	3.5	A
I <sub>B</sub>	Base Current	0.2	A
P <sub>C</sub>	Collector Power Dissipation	0.5	W
R <sub>θJA</sub>	Thermal Resistance, junction to Ambient	250	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~150	°C



### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	20			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	10			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =7V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =0.2A	400		1000	
	h <sub>FE2</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =0.6A	200			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 0.6A, I <sub>B</sub> =12mA			0.12	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 0.6A, I <sub>B</sub> =12mA			1.1	V
Rise time	t <sub>r</sub>	See Figure 1 circuit diagram. V <sub>CC</sub> ≈6V, R <sub>L</sub> =10Ω, I <sub>B1</sub> =-I <sub>B2</sub> =12mA		60		ns
Storage time	t <sub>s</sub>			215		ns
Fall time	t <sub>f</sub>			25		ns