

# 2SC3909

## Silicon NPN Triple Diffused Planar Transistor

☆ High Voltage and High Speed Switching Transistor

**Application Example:**  
Switching Regulator and  
General Purpose

• Outline Drawing 2 ... MT-100(TO3P)

### Absolute Maximum Ratings (Ta=25°C)

Symbol	2SC3909	Unit
V <sub>CB0</sub>	900	V
V <sub>CE0</sub>	800	V
V <sub>EB0</sub>	7	V
I <sub>C</sub>	5 (Pulse 10)	A
I <sub>B</sub>	2.5	A
P <sub>C</sub>	100 (T <sub>C</sub> = 25°C)	W
T <sub>J</sub>	150	°C
T <sub>stg</sub>	-55 to +150	°C

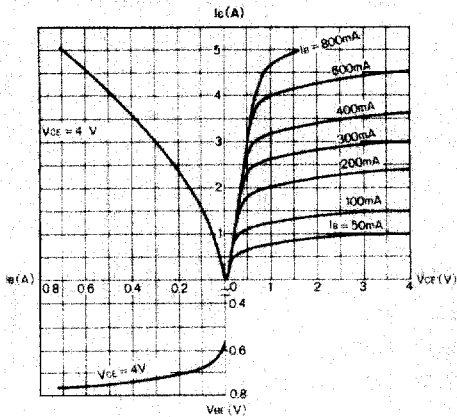
### Electrical Characteristics (Ta=25°C)

Symbol	Conditions	2SC3909	Unit
I <sub>CB0</sub>	V <sub>CB</sub> =800V	100max	μA
I <sub>EB0</sub>	V <sub>EB</sub> =7V	100max	μA
V <sub>BR</sub> CEO	I <sub>C</sub> = 10mA	800min	V
h <sub>FE</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =1.5A	10min	
V <sub>CE(sat)</sub>	I <sub>C</sub> = 1.5A, I <sub>B</sub> =0.3A	1max	V
V <sub>BE(sat)</sub>	I <sub>C</sub> = 1.5A, I <sub>B</sub> =0.3A	1.5max	V
f <sub>T</sub>	V <sub>CE</sub> =12V, I <sub>E</sub> =-0.7A	4typ	MHz

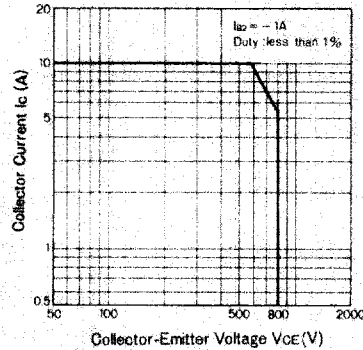
### Typical Switching Characteristics (Common Emitter)

V <sub>CC</sub> (V)	R <sub>i</sub> (Ω)	I <sub>C</sub> (A)	V <sub>BB1</sub> (V)	V <sub>BB2</sub> (V)	I <sub>B1</sub> (A)	I <sub>B2</sub> (A)	t <sub>on</sub> (μs)	t <sub>stg</sub> (μs)	t <sub>r</sub> (μs)
250	166	1.5	10	-5	0.2	-0.6	1.0max	4.0max	0.5max

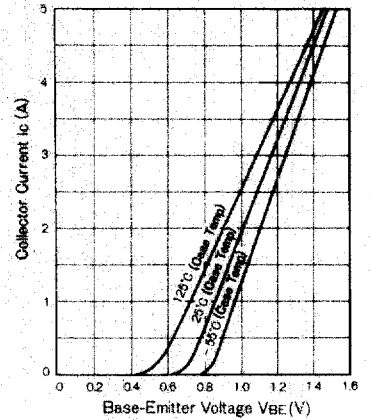
### Common Emitter Characteristics (Typical)



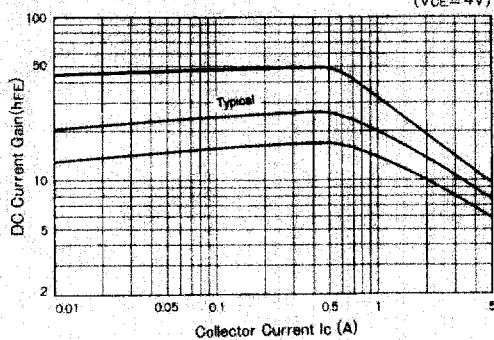
### Reverse Bias Safe Operating Area (Single Pulse)



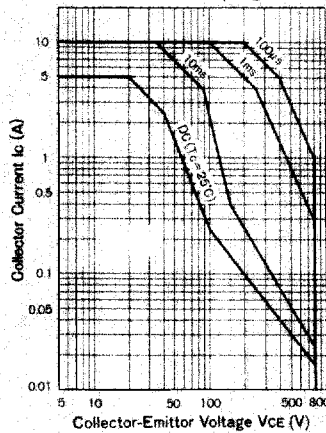
### Ic-VBE Temperature Characteristics (Typical) (Vce = 4V)



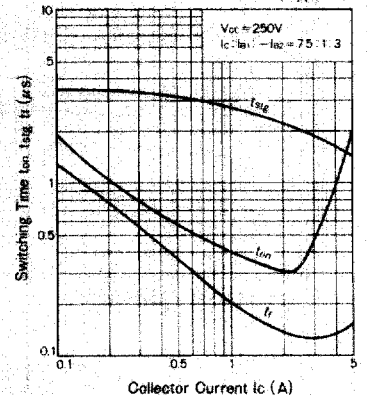
### hFE-Ic Characteristics (Vce = 4V)



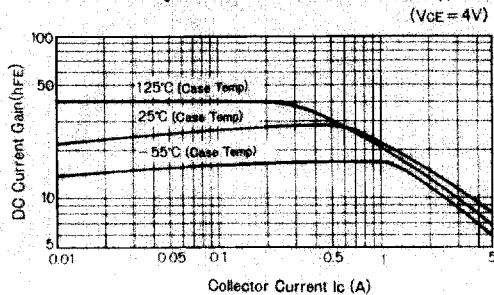
### Safe Operating Area (SOA) (Single Pulse)



### ton · tstg · tr-Ic Characteristics (Typical)



### hFE-Ic Temperature Characteristics (Typical) (Vce = 4V)



### VCE(sat)-Ib Characteristics (Typical)

