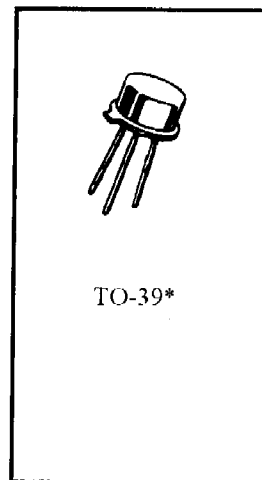


NPN POWER SILICON SWITCHING TRANSISTOR

2N5339

MAXIMUM RATINGS

Ratings	Symbol	Value	Units	
Collector-Emitter Voltage	V_{CE0}	100	Vdc	
Collector-Base Voltage	V_{CB0}	100	Vdc	
Emitter-Base Voltage	V_{EB0}	6.0	Vdc	
Base Current	I_B	1.0	Adc	
Collector Current	I_C	5.0	Adc	
Total Power Dissipation	P_T	@ $T_A = +25^{\circ}\text{C}$ ⁽¹⁾	1.0	W
		@ $T_C = +25^{\circ}\text{C}$ ⁽²⁾	10	W
Operating & Storage Junction Temperature Range	T_{op}, T_{stg}	-55 to +200	$^{\circ}\text{C}$	



*See appendix A for package outline

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	17.5	$^{\circ}\text{C/W}$

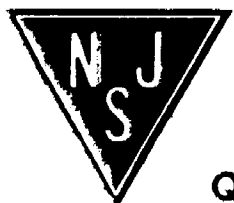
- 1) Derate linearly 5.71 mW/ $^{\circ}\text{C}$ for $T_A > 25^{\circ}\text{C}$
- 2) Derate linearly 57.1 mW/ $^{\circ}\text{C}$ for $T_C > 25^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 50 \text{ mAdc}$	$V_{(BR)CE0}$	100		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 100 \text{ Vdc}$	I_{CE0}		100	μAdc
Collector-Emitter Cutoff Current $V_{CE} = 90 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	I_{CEN}		10	μAdc
Collector-Base Cutoff Current $V_{CB} = 100 \text{ Vdc}$	I_{CB0}		10	μAdc
Emitter-Base Cutoff Current $V_{EB} = 6.0 \text{ Vdc}$	I_{EB0}		100	μAdc



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS ⁽³⁾

Forward-Current Transfer Ratio I _C = 0.5 Adc, V _{CE} = 2.0 Vdc I _C = 2.0 Adc, V _{CE} = 2.0 Vdc I _C = 5.0 Adc, V _{CE} = 2.0 Vdc	h _{FE}	60 60 40	240	
Collector-Emitter Saturation Voltage I _C = 2.0 Adc, I _B = 0.2 Adc I _C = 5.0 Adc, I _B = 0.5 Adc	V _{CE(sat)}		0.7 1.2	Vdc
Base-Emitter Saturation Voltage I _C = 2.0 Adc, I _B = 0.2 Adc I _C = 5.0 Adc, I _B = 0.5 Adc	V _{BE(sat)}		1.2 1.8	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 0.5 Adc, V _{CE} = 10 Vdc, f = 10 MHz	h _{fe}	3.0	15	
Output Capacitance V _{CB} = 10 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{obo}		250	pF
Input Capacitance V _{BE} = 2.0 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{ibe}		1.000	pF

SAFE OPERATING AREA

<p>DC Tests T_C = +25°C, 1 Cycle, t ≥ 0.5 s</p> <p>Test 1 V_{CE} = 2.0 Vdc, I_C = 5.0 Adc</p> <p>Test 2 V_{CE} = 5.0 Vdc, I_C = 2.0 Adc</p> <p>Test 3 V_{CE} = 9.0 Vdc, I_C = 55 mAdc</p>

(3) Pulse Test: Pulse Width = 300μs, Duty Cycle ≤ 2.0%.