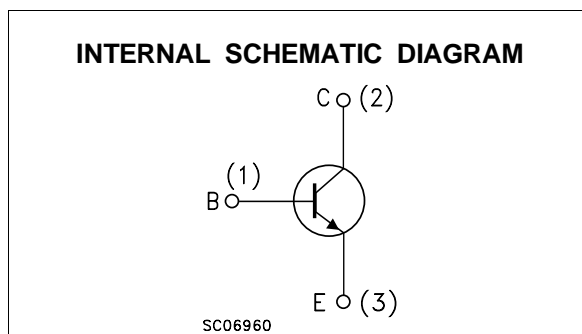
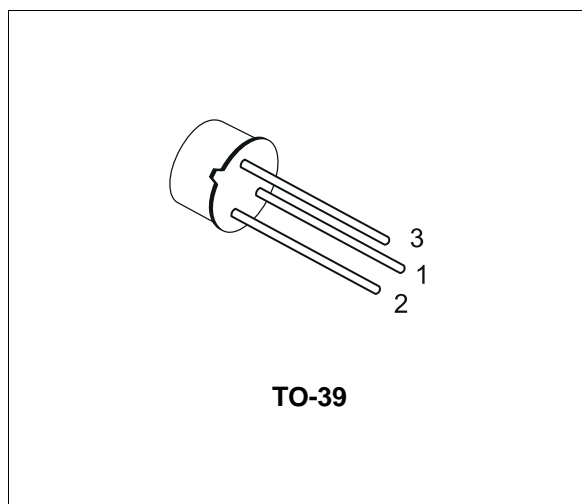


**SILICON NPN TRANSISTOR**

- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR

**DESCRIPTION**

The 2N5339 is a silicon epitaxial planar NPN transistor in Jedec TO-39 metal case. It is intended for high switching applications up to 5A.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	100	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	100	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	6	V
$I_C$	Collector Current	5	A
$I_{CM}$	Collector Peak Current	7	A
$I_B$	Base Current	1	A
$P_{tot}$	Total Dissipation at $T_c \leq 25\text{ }^\circ\text{C}$	6	W
$P_{tot}$	Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$	1	W
$T_{stg}$	Storage Temperature	-65 to 200	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	200	$^\circ\text{C}$

## THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	29.2	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	175	°C/W

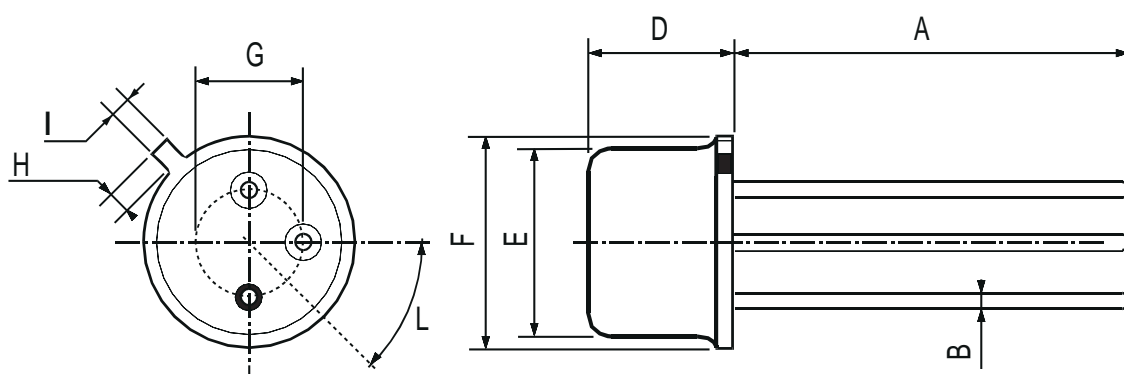
ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = 100 V			10	μA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 90 V			100	μA
I <sub>CEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 90 V V <sub>CE</sub> = 90 V T <sub>C</sub> = 150 °C			10 1	μA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = -6 V			100	μA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 50 mA	100			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2 A I <sub>B</sub> = 200 mA I <sub>C</sub> = 5 A I <sub>B</sub> = 500 mA			0.7 1.2	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2 A I <sub>B</sub> = 200 mA I <sub>C</sub> = 5 A I <sub>B</sub> = 500 mA			1.2 1.8	V V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 2 V I <sub>C</sub> = 2 A V <sub>CE</sub> = 2 V I <sub>C</sub> = 5 A V <sub>CE</sub> = 2 V	60 60 40		240	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 10 V	30			MHz
C <sub>CB0</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = 10 V f = 0.1 MHz			250	pF
t <sub>on</sub>	Turn on Time	I <sub>C</sub> = 2 A V <sub>CC</sub> = 40 V I <sub>B1</sub> = 0.2 A			200	ns
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 2 A V <sub>CC</sub> = 40 V			2	μs
t <sub>f</sub>	Fall Time	I <sub>B1</sub> = -I <sub>B2</sub> = 0.2A			200	ns

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

## TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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