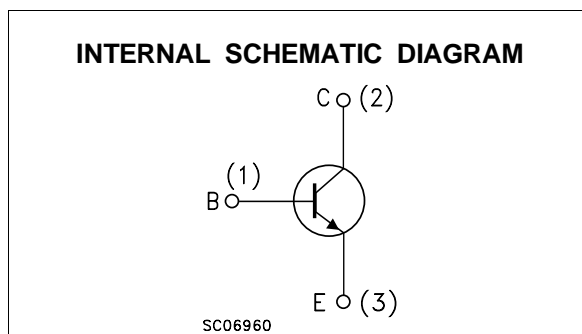
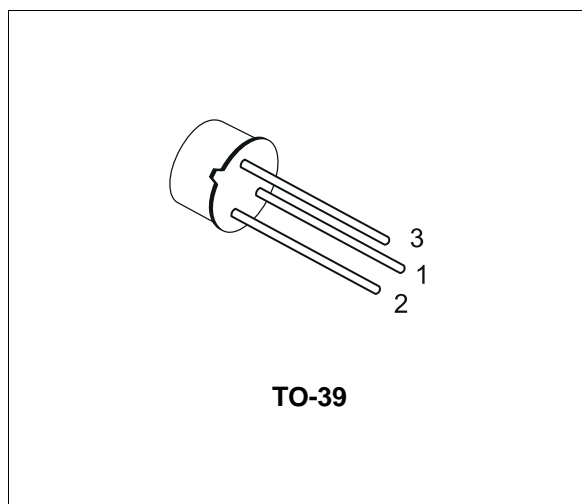


SILICON NPN TRANSISTOR

- 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

$R_{thj-case}$	Thermal Resistance Junction-case	Max	29.2	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	175	$^{\circ}C/W$

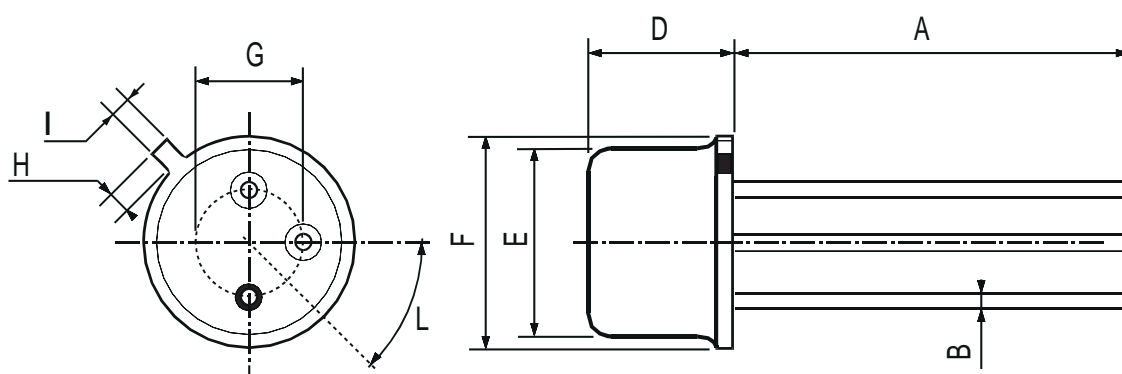
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 100\text{ V}$			10	μA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 90\text{ V}$			100	μA
I_{CEX}	Collector Cut-off Current ($V_{BE} = -1.5V$)	$V_{CE} = 90\text{ V}$ $V_{CE} = 90\text{ V}$ $T_C = 150^{\circ}C$			10 1	μA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = -6\text{ V}$			100	μA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 50\text{ mA}$	100			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{ A}$ $I_B = 200\text{ mA}$ $I_C = 5\text{ A}$ $I_B = 500\text{ mA}$			0.7 1.2	V V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 2\text{ A}$ $I_B = 200\text{ mA}$ $I_C = 5\text{ A}$ $I_B = 500\text{ mA}$			1.2 1.8	V V
h_{FE*}	DC Current Gain	$I_C = 0.5\text{ A}$ $V_{CE} = 2\text{ V}$ $I_C = 2\text{ A}$ $V_{CE} = 2\text{ V}$ $I_C = 5\text{ A}$ $V_{CE} = 2\text{ V}$	60 60 40		240	
f_T	Transition Frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$	30			MHz
C_{CBO}	Collector-Base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 0.1\text{ MHz}$			250	pF
t_{on}	Turn on Time	$I_C = 2\text{ A}$ $V_{CC} = 40\text{ V}$ $I_{B1} = 0.2\text{ A}$			200	ns
t_s	Storage Time	$I_C = 2\text{ A}$ $V_{CC} = 40\text{ V}$			2	μs
t_f	Fall Time	$I_{B1} = -I_{B2} = 0.2A$			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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