SGS-THOMSON MICROELECTRONICS

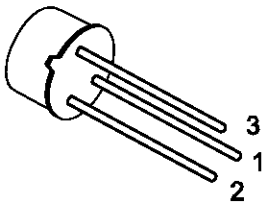
2N5339

SILICON NPN TRANSISTOR

- SGS-THOMSON PREFERRED SALESTYPE

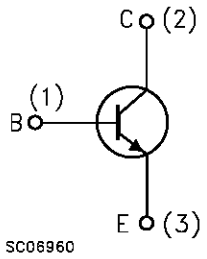
DESCRIPTION

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



TO-39

INTERNAL SCHEMATIC DIAGRAM



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 $T_c \leq 25\ ^oC$	6	W
P_{tot}	Total Dissipation at $T_{amb} \leq 25\ ^oC$	1	W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Max. Operating Junction Temperature	200	^oC

THERMAL DATA

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

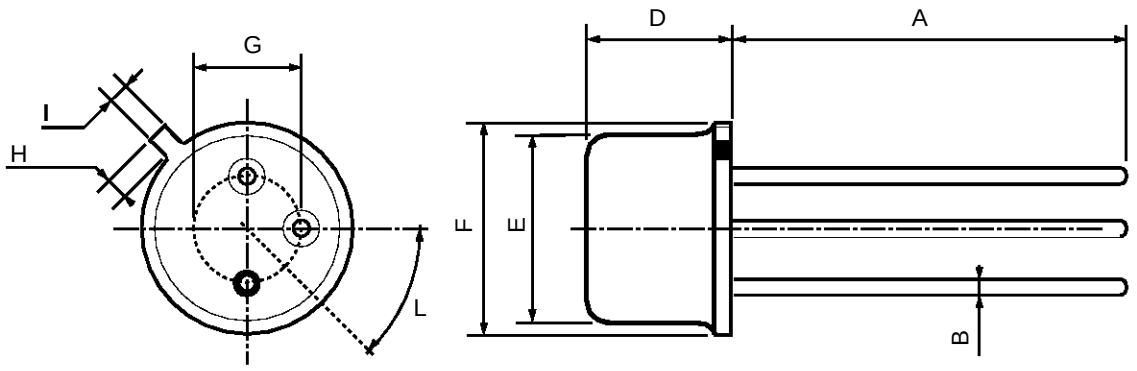
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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

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

TO39 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^{o} (typ.)					



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