

SILICON NPN TRANSISTOR

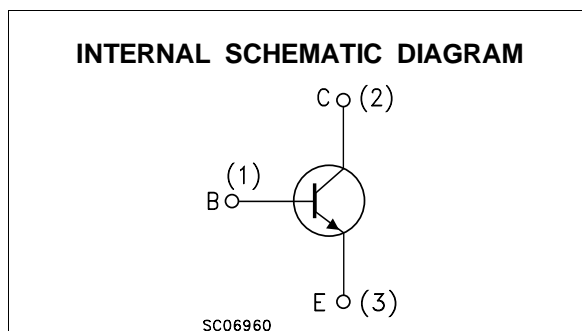
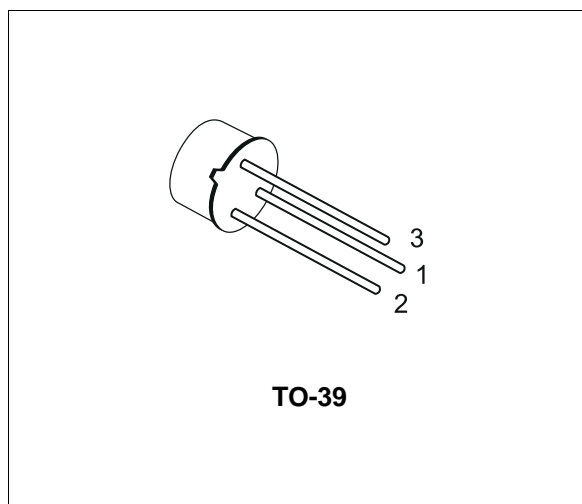
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED
- LOW COLLECTOR EMITTER SATURATION

APPLICATIONS

- GENERAL PURPOSE SWITCHING

DESCRIPTION

The BUY49S is a silicon epitaxial planar NPN transistor in jedec TO-39 package. It is used in high-current switching applications up to 3 A.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	250	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	200	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	3	A
I_{CM}	Collector Peak Current	5	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$	10	W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ\text{C}$
T_j	Max Operating Junction Temperature	200	$^\circ\text{C}$

BUY49S

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	15	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-case-ambient	Max	175	$^{\circ}C/W$

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

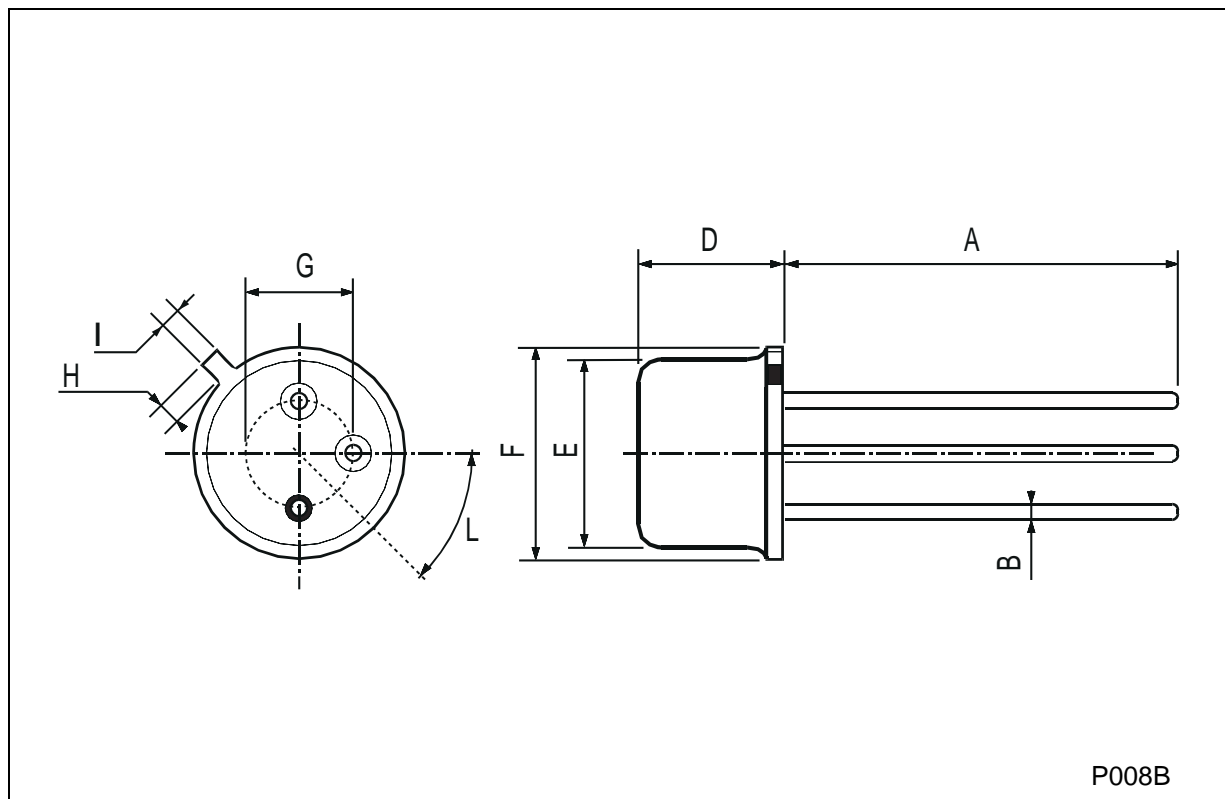
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 200 V$ $V_{CB} = 200 V$ $T_{case} = 150^{\circ}C$			0.1 50	μA μA
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100 \mu A$	250			V
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 20 mA$	200			V
V_{EBO}^*	Emitter-base Voltage ($I_C = 0$)	$I_E = 1 mA$	6			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 0.5 A$ $I_B = 50 mA$			0.2	V
$V_{BE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 0.5 A$ $I_B = 50 mA$			1.1	V
h_{FE}^*	DC Current Gain	$I_C = 20 mA$ $V_{CE} = 5 V$ $I_C = 0.5 A$ $V_{CE} = 5 V$ $I_C = 20 mA$ $V_{CE} = 2 V$ $T_{case} = -55^{\circ}C$	40 40 16	80		
f_T	Transistor Frequency	$I_C = 100 mA$ $V_{CE} = 10 V$	50			MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10 V$ $f = 1 MHz$			30	pF
t_{on}	Turn-on Time	$I_C = 0.5 A$ $V_{CC} = 20 V$			0.3	μs
t_{off}	Turn-off Time	$I_{B1} = - I_{B2} = 50 mA$			1	μs
$I_{s/b}^{**}$	Second Breakdown Collector Current	$V_{CE} = 50 V$	0.2			A

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

** Pulsed: 1 s, non repetitive pulse.

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.)					



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