

SILICON NPN TRANSISTOR

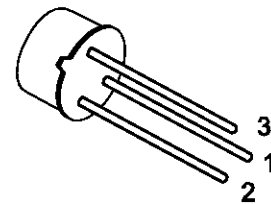
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED
- LOW COLLECTOR-EMITTER SATURATION

APPLICATIONS

- GENERAL PURPOSE SWITCHING

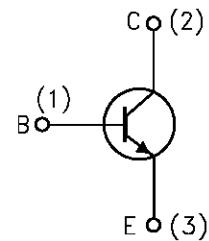
DESCRIPTION

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.



TO-39

INTERNAL SCHEMATIC DIAGRAM



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 $T_{amb} \leq 25^\circ\text{C}$	10	W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ\text{C}$
T_j	Max Operating Junction Temperature	200	$^\circ\text{C}$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	15	°C/W
R _{thj-amb}	Thermal Resistance Junction-case-ambient	Max	175	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

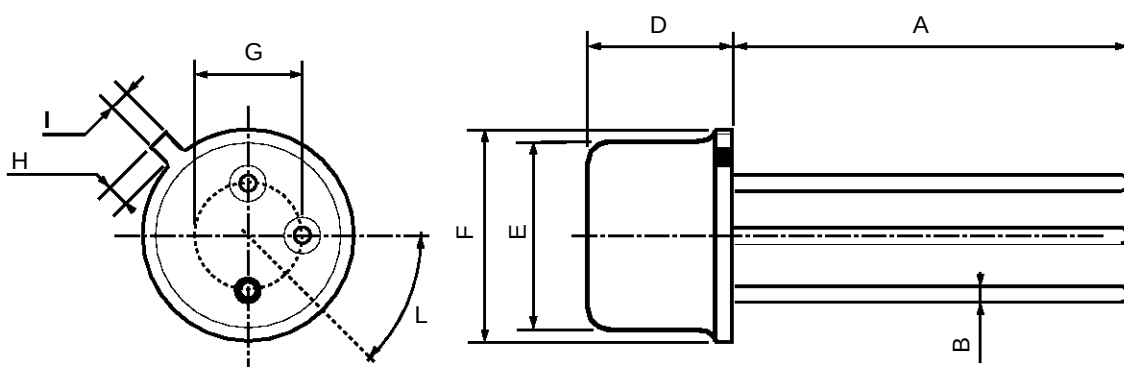
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 200 V V _{CB} = 200 V T _{case} = 150 °C			0.1 50	μA μA
V _{(BR)CBO} *	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 100 μA	250			V
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage (I _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 °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.)					



P008B

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