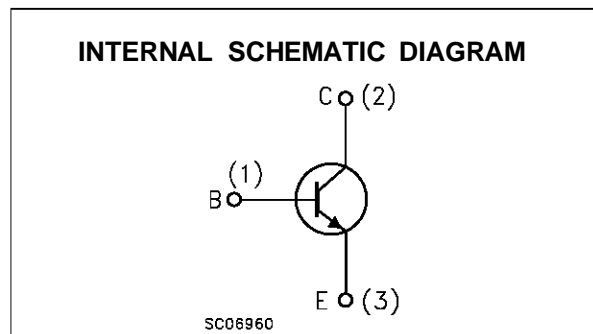
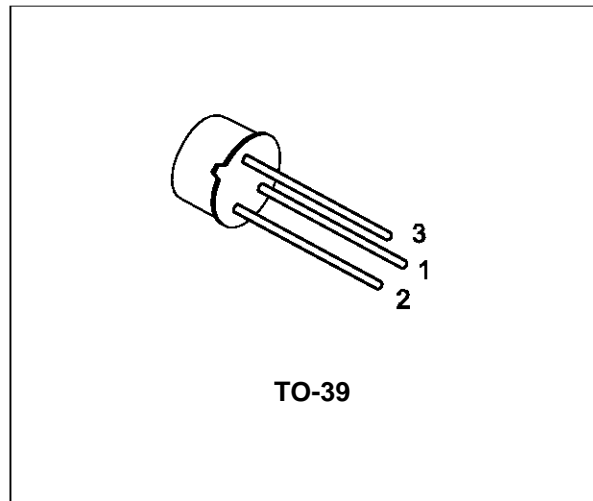


SILICON NPN SWITCHING TRANSISTOR

■ SGS-THOMSON PREFERRED SALESTYPE

DESCRIPTION

The BUY48 is a silicon epitaxial planar NPN transistor in jedec TO-39 metal case. It is used in high-voltage, high-current switching applications up to 7 A.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	200	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	170	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	7	A
I_{CM}	Collector Peak Current (repetitive)	10	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	$^\circ\text{C}$

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

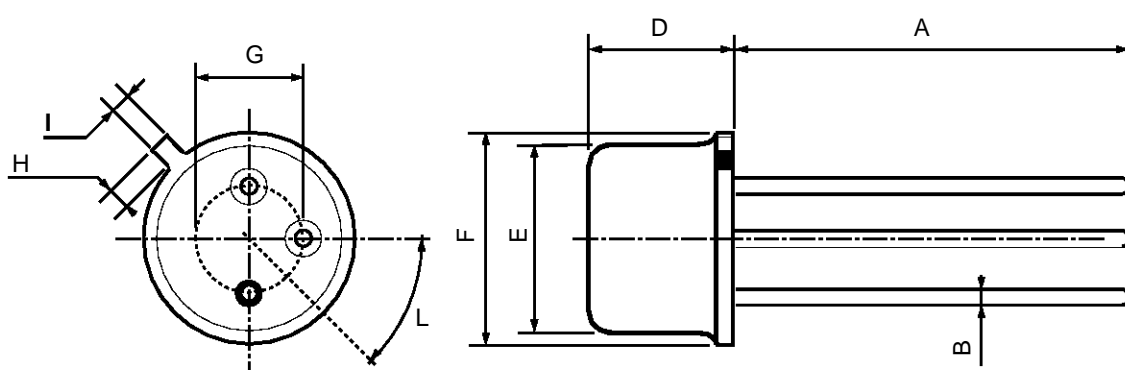
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 100 V V _{CB} = 100 V T _{CASE} = 125 °C			10 1	μA mA
V _{(BR)CBO} *	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 1 mA	200			V
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 20 mA	170			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 I _C = 2 A I _B = 0.2 A I _C = 5 A I _B = 0.5 A		0.05	0.45 1	V V V
V _{BE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 0.5 A I _B = 50 mA I _C = 2 A I _B = 0.2 A I _C = 5 A I _B = 0.5 A		0.8	1.1 1.5	V V V
h _{FE} *	DC Current Gain	I _C = 50 mA V _{CE} = 5 V I _C = 0.5 A V _{CE} = 5 V I _C = 2 A V _{CE} = 5 V I _C = 5 A V _{CE} = 5 V	40 40 15	130 150 130 45		
f _T	Transistor Frequency	I _C = 100 mA V _{CE} = 10 V		90		MHz
C _{CBO}	Collector-base Capacitance	I _E = 0 V _{CB} = 50 V f = 1 MHz		45	80	pF
t _{on}	Turn-on Time	I _C = 5 A V _{CC} = 40 V			1	μs
t _{off}	Turn-off Time	I _{B1} = - I _{B2} = 0.5 A			2	μs

* 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° (typ.)					



P008B

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1996 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A