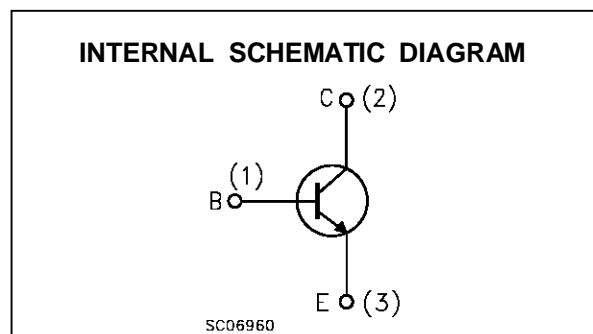
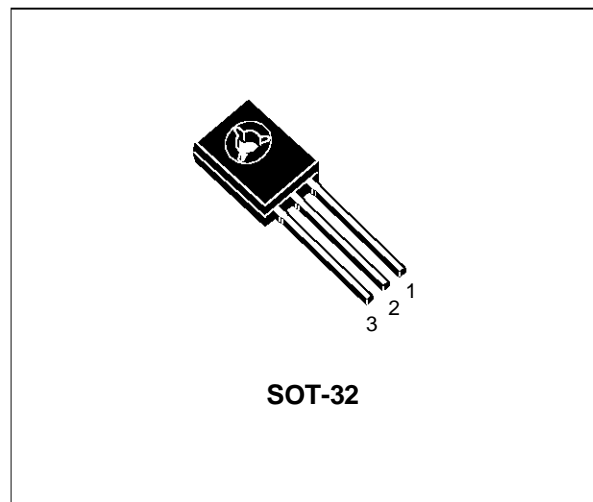


**SILICON NPN SWITCHING TRANSISTOR**

■ SGS-THOMSON PREFERRED SALESTYPE

**DESCRIPTION**

The BUY49P is a silicon epitaxial planar NPN transistor in jedec SOT-32 plastic 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 $T_{amb} \leq 25\text{ }^\circ\text{C}$	15	W
$T_{stg}$	Storage Temperature	- 65 to 150	$^\circ\text{C}$
$T_j$	Max Operating Junction Temperature	150	$^\circ\text{C}$

## BUY49P

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	8.33	$^{\circ}C/W$
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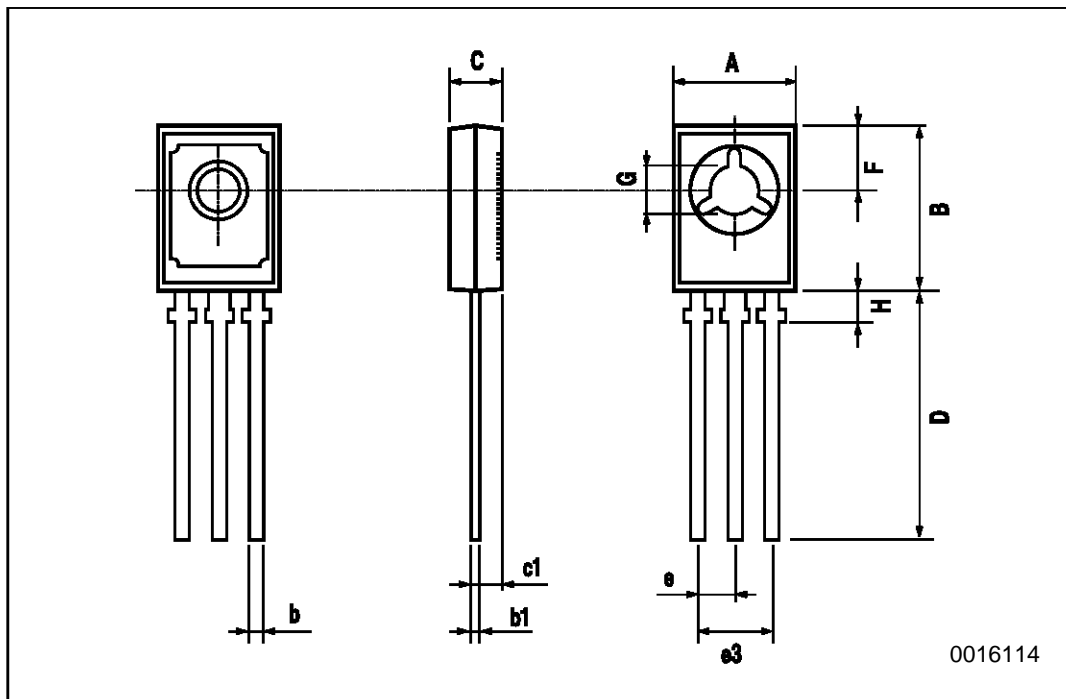
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 200 V$			0.1	$\mu A$
$V_{CBO}^*$	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	$I_C = 20 mA$ $V_{CE} = 2 V$ $I_C = 20 A$ $V_{CE} = 5 V$ $I_C = 0.5 A$ $V_{CE} = 5 V$ $I_C = 20 A$ $V_{CE} = 2 V$ $T_{CASE} = -55^{\circ}C$	30 40 40 16		120	
$f_T$	Transistor Frequency	$I_C = 100 mA$ $V_{CE} = 10 V$	30			MHz
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10 V$ $f = 1 MHz$			50	pF
$t_{on}$	Turn-on Time	$I_C = 0.5 A$ $V_{CC} = 20 V$			0.8	$\mu s$
$t_{off}$	Turn-off Time	$I_{B1} = - I_{B2} = 50 mA$			2.5	$\mu s$

\* Pulsed: Pulse duration = 300  $\mu s$ , duty cycle = 1.5 %

## SOT-32 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100



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