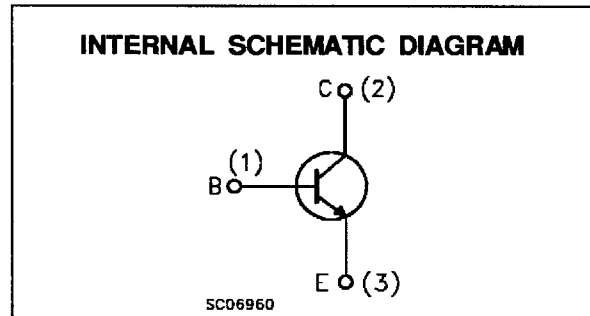
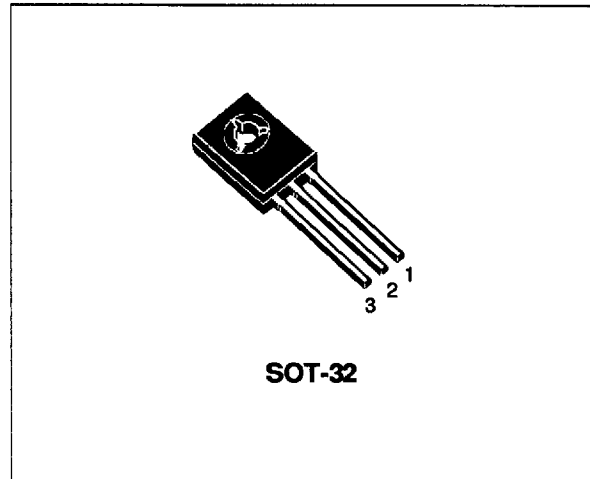


**SILICON NPN SWITCHING TRANSISTOR**

■ **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 <sub>CB0</sub>	Collector-Base Voltage (I <sub>E</sub> = 0)	250	V
V <sub>CEO</sub>	Collector-Emitter Voltage (I <sub>B</sub> = 0)	200	V
V <sub>EB0</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	6	V
I <sub>C</sub>	Collector Current	3	A
I <sub>CM</sub>	Collector Peak Current	5	A
P <sub>tot</sub>	Total Power Dissipation at T <sub>amb</sub> ≤ 25 °C	15	W
T <sub>stg</sub>	Storage Temperature	- 65 to 150	°C
T <sub>j</sub>	Max Operating Junction Temperature	150	°C

**THERMAL DATA**

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 200\text{ V}$			0.1	$\mu\text{A}$
$V_{CBO}^*$	Collector-Base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\text{ }\mu\text{A}$	250			V
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 20\text{ mA}$	200			V
$V_{EBO}^*$	Emitter-base Voltage ( $I_C = 0$ )	$I_E = 1\text{ mA}$	6			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 0.5\text{ A}$ $I_B = 50\text{ mA}$			0.2	V
$V_{BE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 0.5\text{ A}$ $I_B = 50\text{ mA}$			1.1	V
$h_{FE}^*$	DC Current Gain	$I_C = 20\text{ mA}$ $V_{CE} = 2\text{ V}$ 30 $I_C = 20\text{ A}$ $V_{CE} = 5\text{ V}$ 40 $I_C = 0.5\text{ A}$ $V_{CE} = 5\text{ V}$ 40 $I_C = 20\text{ A}$ $V_{CE} = 2\text{ V}$ 16 $T_{CASE} = -55\text{ }^{\circ}\text{C}$			120	
$f_T$	Transistor Frequency	$I_C = 100\text{ mA}$ $V_{CE} = 10\text{ V}$	30			MHz
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$			50	pF
$t_{on}$	Turn-on Time	$I_C = 0.5\text{ A}$ $V_{CC} = 20\text{ V}$			0.8	$\mu\text{s}$
$t_{off}$	Turn-off Time	$I_{B1} = -I_{B2} = 50\text{ mA}$			2.5	$\mu\text{s}$

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

SOT-32 MECHANICAL DATA

DIM.	mm					
	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

