

**BUY49S**  
**HIGH VOLTAGE**  
**NPN SILICON TRANSISTOR**



**TO-39 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BUY49S is a NPN Silicon Transistor designed for high voltage, high current applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_C=25^\circ\text{C}$ )

	SYMBOL		UNITS
Collector-Base Voltage	$V_{CB0}$	250	V
Collector-Emitter Voltage	$V_{CEO}$	200	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Continuous Collector Current	$I_C$	3.0	A
Peak Collector Current	$I_{CM}$	5.0	A
Power Dissipation ( $T_A=25^\circ\text{C}$ )	$P_D$	1.0	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	15	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JA}$	175	$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS:** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

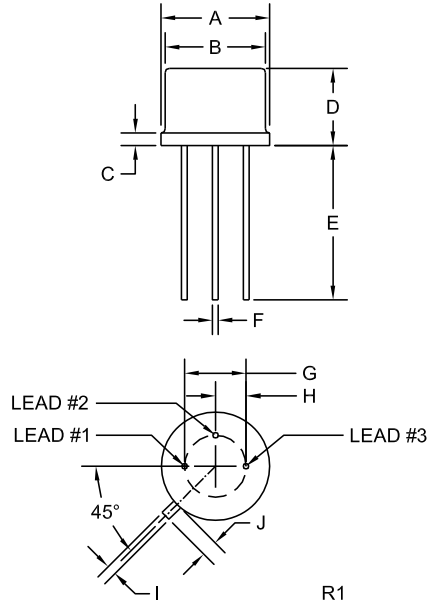
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CB0}$	$V_{CB}=200\text{V}$		0.1	$\mu\text{A}$
$I_{CB0}$	$V_{CB}=200\text{V}, T_C=150^\circ\text{C}$		50	$\mu\text{A}$
$BV_{CB0}$	$I_C=100\mu\text{A}$	250		V
$BV_{CEO}$	$I_C=20\text{mA}$	200		V
$BV_{EBO}$	$I_E=1.0\text{mA}$	6.0		V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.1	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=20\text{mA}$	40		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	40		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=20\text{mA}, T_C=-55^\circ\text{C}$	16		
$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	50		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		30	pF
$t_{on}$	$V_{CC}=20\text{V}, I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$		0.3	$\mu\text{s}$
$t_{off}$	$V_{CC}=20\text{V}, I_C=500\text{mA}, I_{B1}=I_{B2}=50\text{mA}$		1.0	$\mu\text{s}$
$I_{S/B}^*$	$V_{CE}=50\text{V}$	0.2		A

\* Pulsed: 1.0s non repetitive pulse.

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TO-39 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING: FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

R0 (27-August 2010)