

**BUY47
BUY48**

**SILICON
HIGH CURRENT
NPN TRANSISTORS**



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BUY48 and BUY47 are silicon NPN transistors designed for high voltage, high current switching applications.

MARKING: FULL PART NUMBER

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

	SYMBOL	BUY47	BUY48	UNITS
Collector-Base Voltage	V_{CBO}	150	200	V
Collector-Emitter Voltage	V_{CEO}	120	170	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Continuous Collector Current	I_C	7.0		A
Peak Collector Current	I_{CM}	10		A
Power Dissipation ($T_C=50^\circ\text{C}$)	P_D	10		W
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	θ_{JC}	15		$^\circ\text{C/W}$
Thermal Resistance	θ_{JA}	175		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=80\text{V}$ (BUY47)			10	μA
I_{CBO}	$V_{CB}=100\text{V}$ (BUY48)			10	μA
I_{CBO}	$V_{CB}=80\text{V}, T_C=125^\circ\text{C}$ (BUY47)			1.0	mA
I_{CBO}	$V_{CB}=100\text{V}, T_C=125^\circ\text{C}$ (BUY48)			1.0	mA
BV_{CBO}	$I_C=1.0\text{mA}$ (BUY47)	150			V
BV_{CBO}	$I_C=1.0\text{mA}$ (BUY48)	200			V
BV_{CEO}	$I_C=20\text{mA}$ (BUY47)	120			V
BV_{CEO}	$I_C=20\text{mA}$ (BUY48)	170			V
BV_{EBO}	$I_E=1.0\text{mA}$	6.0			V
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$			0.45	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=500\text{mA}$			1.0	V
$V_{BE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$			1.1	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=500\text{mA}$			1.5	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	40			
h_{FE}	$V_{CE}=5.0\text{V}, I_C=2.0\text{A}$	40			
h_{FE}	$V_{CE}=5.0\text{V}, I_C=5.0\text{A}$	15			
f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}$		50		MHz
C_{ob}	$V_{CB}=50\text{V}, I_E=0, f=1.0\text{MHz}$			80	pF
t_{on}	$V_{CC}=40\text{V}, I_C=5.0\text{A}, I_{B1}=I_{B2}=500\text{mA}$			1.0	μs
t_{off}	$V_{CC}=40\text{V}, I_C=5.0\text{A}, I_{B1}=I_{B2}=500\text{mA}$			2.0	μs

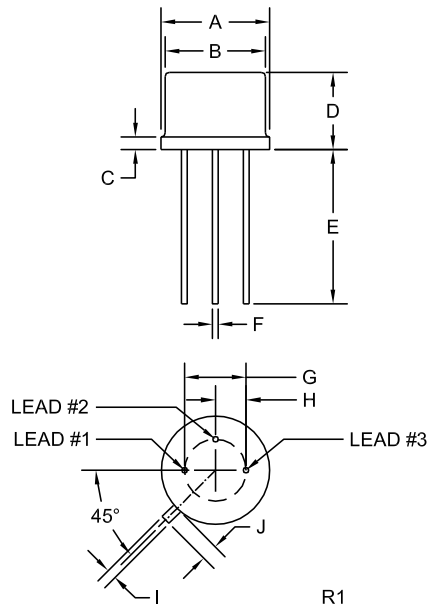
R0 (26-July 2013)

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TO-39 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING: FULL PART NUMBER

DIMENSIONS				
SYMBOL	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)

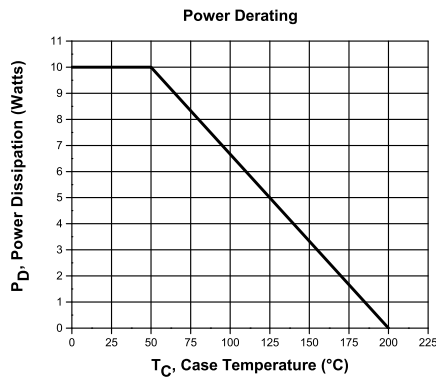
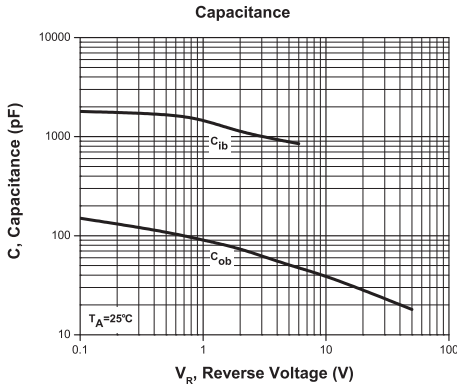
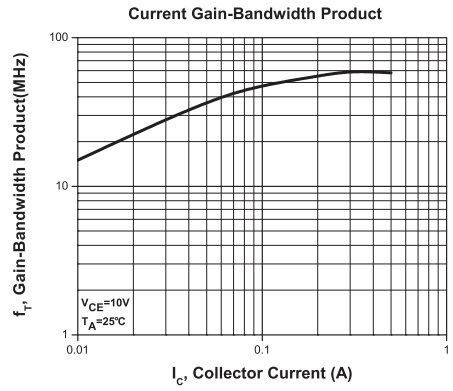
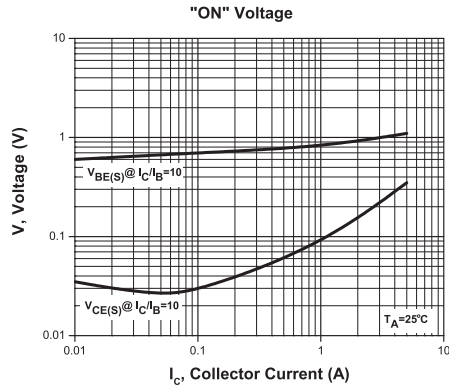
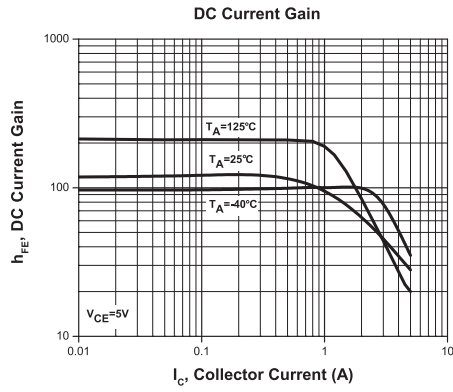
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TYPICAL ELECTRICAL CHARACTERISTICS



R0 (26-July 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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