

MPQ6002  
MPQ6502

**SILICON QUAD  
COMPLEMENTARY TRANSISTORS**



**TO-116 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR MPQ6002 and MPQ6502 types are silicon complementary pair transistors, mounted in a 14 pin DIP package, designed for general purpose amplifier and switching applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Power Dissipation (per transistor)  
Power Dissipation (total package)  
Operating and Storage Junction Temperature  
Thermal Resistance (total package)

SYMBOL		UNITS
$V_{CBO}$	60	V
$V_{CEO}$	30	V
$V_{EBO}$	5.0	V
$I_C$	500	mA
$P_D$	650	mW
$P_D$	1.25	W
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	100	$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS PER TRANSISTOR:** ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=50\text{V}$			30	nA
$I_{EBO}$	$V_{EB}=3.0\text{V}$			30	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	60			V
$BV_{CEO}$	$I_C=10\text{mA}$	30			V
$BV_{EBO}$	$I_E=10\mu\text{A}$	5.0			V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			0.4	V
$V_{CE(SAT)}$	$I_C=300\text{mA}, I_B=30\text{mA}$			1.4	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			1.3	V
$V_{BE(SAT)}$	$I_C=300\text{mA}, I_B=30\text{mA}$			2.0	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=300\text{mA}$	30			
$f_T$	$V_{CE}=20\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	200			MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			8.0	pF
$C_{ib}$	$V_{EB}=2.0\text{V}, I_C=0, f=1.0\text{MHz}$			30	pF
$t_{on}$	$V_{CC}=30\text{V}, V_{BE}=0.5\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$		30		ns
$t_{off}$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		225		ns

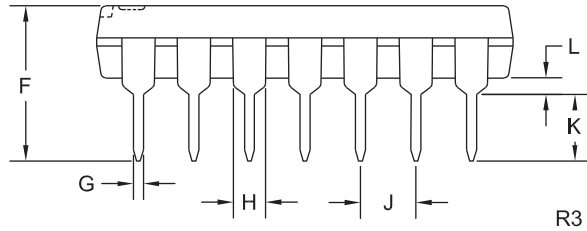
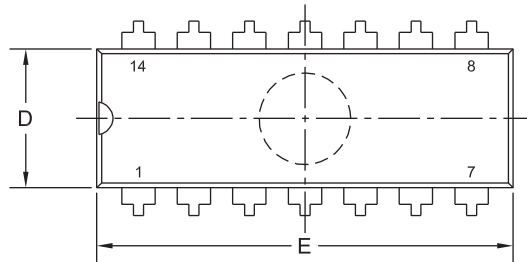
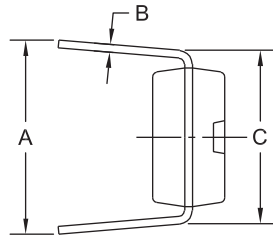
R1 (8-April 2013)

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**TO-116 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS		DIMENSIONS	
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.310	0.390	7.9	9.9
B	0.008	0.014	0.2	0.4
C	0.310		7.9	
D	0.240	0.260	6.1	6.6
E	0.740	0.760	18.8	19.3
F	-	0.300	-	7.6
G	0.014	0.022	0.4	0.6
H	0.050		1.3	
J	0.100		2.5	
K	0.125	0.150	3.2	3.8
L	0.015	-	0.4	-

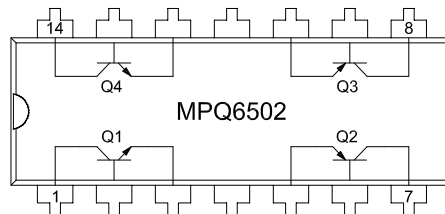
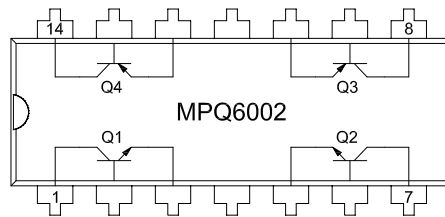
TO-116 (REV: R3)

**LEAD CODE:**

- |                  |                   |
|------------------|-------------------|
| 1) Collector Q1  | 8) Collector Q3   |
| 2) Base Q1       | 9) Base Q3        |
| 3) Emitter Q1    | 10) Emitter Q3    |
| 4) No Connection | 11) No Connection |
| 5) Emitter Q2    | 12) Emitter Q4    |
| 6) Base Q2       | 13) Base Q4       |
| 7) Collector Q2  | 14) Collector Q4  |

**MARKING: FULL PART NUMBER**

**PIN CONFIGURATIONS**



R1 (8-April 2013)



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### 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
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- Custom product packing

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- Application notes
- Application and design sample kits
- Custom product and package development

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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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