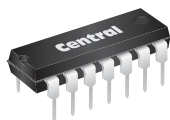


MPQ3904

SILICON
NPN QUAD TRANSISTOR



TO-116 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MPQ3904 is comprised of four independent silicon NPN transistors mounted in a 14-pin DIP, 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

SYMBOL

V_{CBO} 60
 V_{CEO} 40
 V_{EBO} 6.0
 I_C 200
 P_D 500
 P_D 2.0
 T_J, T_{stg} -65 to +150

UNITS

V
V
V
mA
mW
W
 $^{\circ}\text{C}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=40\text{V}$			50	nA
I_{EBO}	$V_{EB}=4.0\text{V}$			50	nA
BV_{CBO}	$I_C=10\mu\text{A}$	60			V
BV_{CEO}	$I_C=1.0\text{mA}$	40			V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0			V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$			0.20	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$			0.85	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	30			
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	50			
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	75			
f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	250			MHz
C_{ob}	$V_{CB}=5.0\text{V}, I_E=0, f=140\text{kHz}$			4.0	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=140\text{kHz}$			12	pF
t_{on}	$V_{BE}=0.5\text{V}, I_C=10\text{mA}, I_{B1}=1.0\text{mA}$		37		ns
t_{off}	$I_C=10\text{mA}, I_{B1}=I_{B2}=1.0\text{mA}$		136		ns

R2 (25-September 2018)

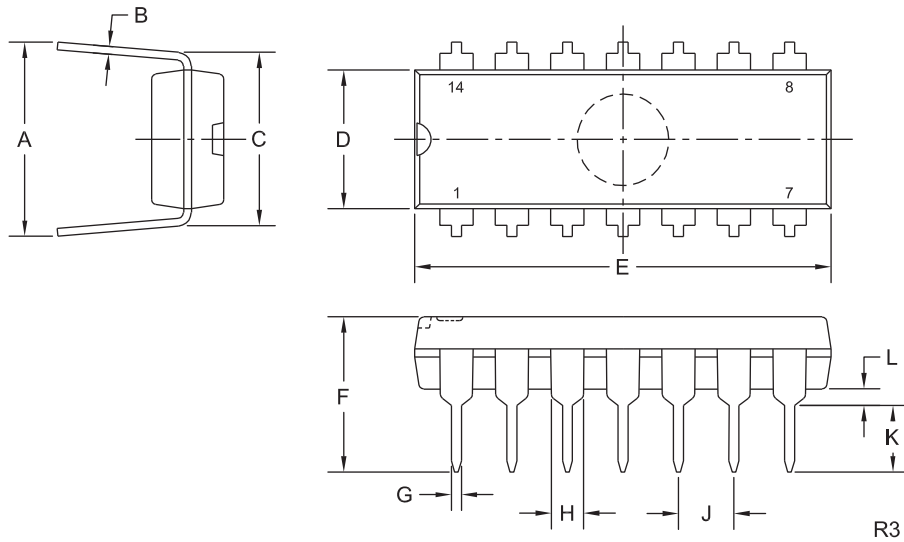
MPQ3904

SILICON

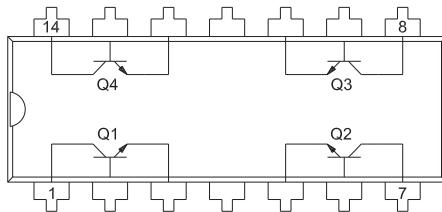
NPN QUAD TRANSISTOR



TO-116 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



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

SYMBOL	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)

R2 (25-September 2018)

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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MPQ3904 TIN/LEAD