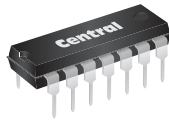


MPQ3904
SILICON
NPN QUAD TRANSISTOR



TO-116 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MPQ3904 type 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		UNITS
V_{CBO}	60	V
V_{CEO}	40	V
V_{EBO}	6.0	V
I_C	200	mA
P_D	500	mW
P_D	2.0	W
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$

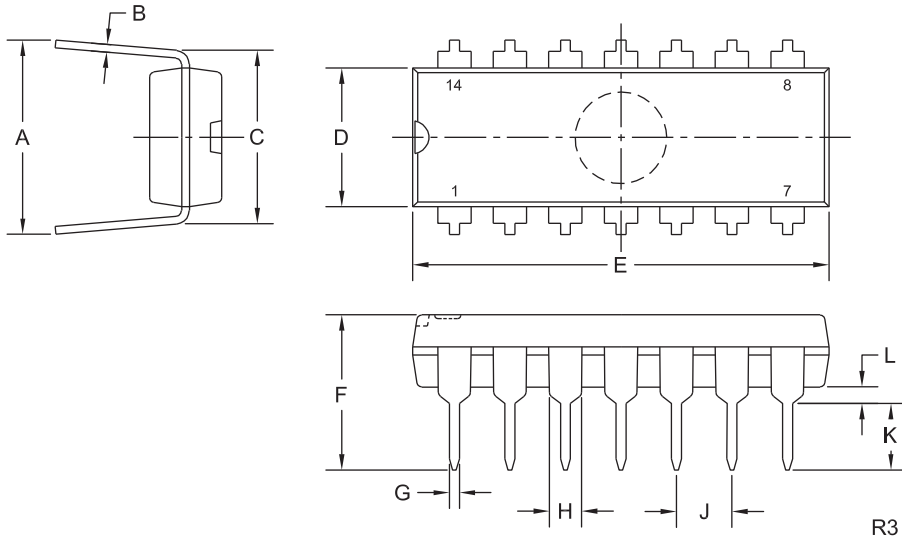
ELECTRICAL CHARACTERISTICS PER TRANSISTOR: ($T_A=25^\circ\text{C}$)

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}	$V_{EB}=0.5\text{V}, I_C=0, f=140\text{kHz}$			8.0	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

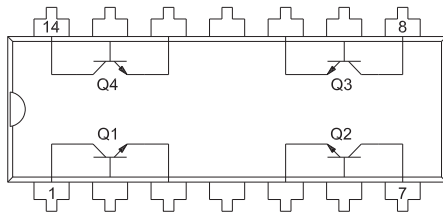
MPQ3904
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TO-116 CASE - MECHANICAL OUTLINE



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	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)

R1 (24-April 2013)