

MMPQ3904
SURFACE MOUNT
NPN SILICON
QUAD TRANSISTORS



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MMPQ3904, consisting of four transistors and available in the SOIC-16 surface mount package, is 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
Operating and Storage Junction Temperature
Thermal Resistance (Total Package)
Thermal Resistance (Each Transistor)

SYMBOL		UNITS
V_{CBO}	60	V
V_{CEO}	40	V
V_{EBO}	6.0	V
I_C	200	mA
P_D	1.0	W
T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
θ_{JA}	125	$^\circ\text{C/W}$
θ_{JA}	240	$^\circ\text{C/W}$

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

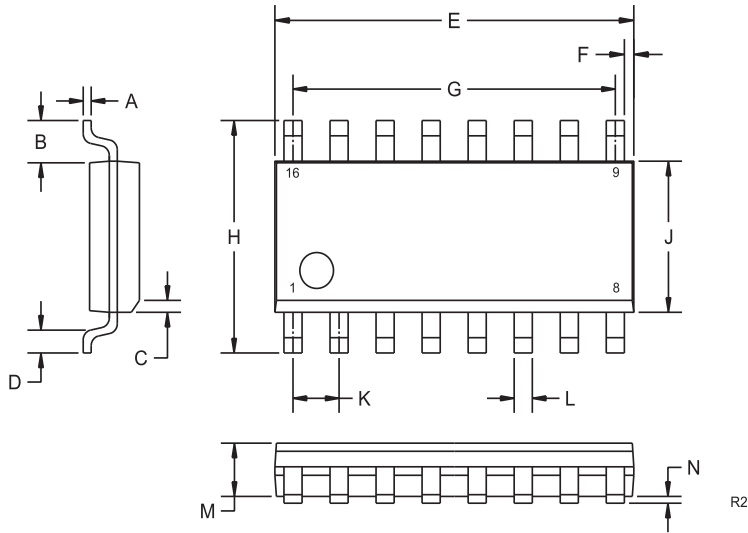
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CEV}	$V_{CE}=30V, V_{EB}=3.0V$			50	nA
BV_{CBO}	$I_C=10\mu A$	60			V
BV_{CEO}	$I_C=1.0mA$	40			V
BV_{EBO}	$I_E=10\mu A$	6.0			V
$V_{CE(SAT)}$	$I_C=10mA, I_B=1.0mA$			0.20	V
$V_{CE(SAT)}$	$I_C=50mA, I_B=5.0mA$			0.30	V
$V_{BE(SAT)}$	$I_C=10mA, I_B=1.0mA$	0.65		0.85	V
$V_{BE(SAT)}$	$I_C=50mA, I_B=5.0mA$			0.95	V
h_{FE}	$V_{CE}=1.0V, I_C=0.1mA$	40			
h_{FE}	$V_{CE}=1.0V, I_C=1.0mA$	70			
h_{FE}	$V_{CE}=1.0V, I_C=10mA$	100		300	
h_{FE}	$V_{CE}=1.0V, I_C=50mA$	60			
h_{FE}	$V_{CE}=1.0V, I_C=100mA$	30			
f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$		450		MHz
C_{ib}	$V_{EB}=0.5V, f=1.0MHz$		6.0		pF
C_{ob}	$V_{CB}=5.0V, f=1.0MHz$		2.5		pF
NF	$V_{CE}=5.0V, I_C=100\mu A, R_S=1.0k\Omega, f=1.0Hz$ to 15.7kHz		2.0		dB
t_d	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		18		ns
t_r	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		20		ns
t_s	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		150		ns
t_f	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		25		ns

R2 (1-March 2010)

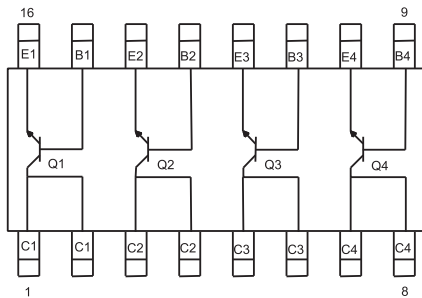
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SOIC-16 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



MARKING: FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.007	0.010	0.19	0.25
B	0.041		1.04	
C	0.010	0.020	0.25	0.50
D	0.020	0.035	0.50	0.90
E	0.386	0.394	9.80	10.00
F	0.010		0.25	
G	0.350		8.89	
H	0.228	0.244	5.80	6.20
J	0.150	0.157	3.80	4.00
K	0.050		1.27	
L	0.0138	0.0201	0.35	0.51
M	0.0531	0.0689	1.35	1.75
N	0.0039	0.0098	0.10	0.25

SOIC-16 (REV:R2)

R2 (1-March 2010)