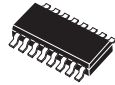


MMPQ3904
SURFACE MOUNT
NPN SILICON
QUAD TRANSISTOR



SOIC-16 CASE

CentralTM

Semiconductor Corp.

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.

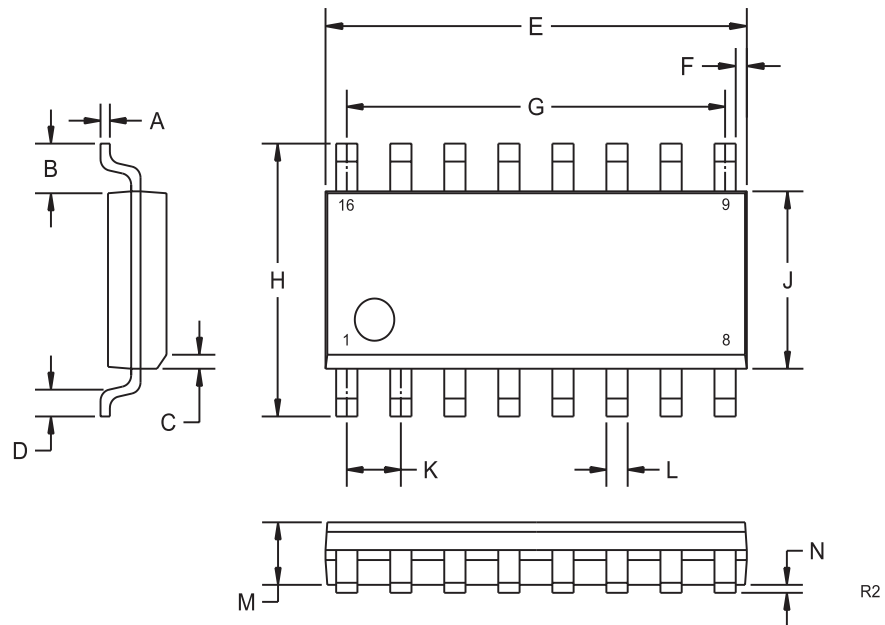
MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	200	mA
Power Dissipation	P_D	1000	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance (Total Package)	θ_{JA}	125	$^\circ\text{C/W}$
Thermal Resistance (Each Transistor)	θ_{JA}	240	$^\circ\text{C/W}$

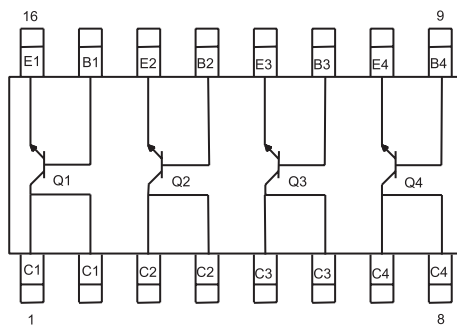
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

SOIC-16 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



SYMBOL	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)