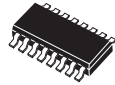


**MMPQ2222A**  
**SURFACE MOUNT**  
**NPN SILICON**  
**QUAD TRANSISTOR**



**SOIC-16 CASE**

# Central<sup>TM</sup>

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR MMPQ2222A, consisting of four transistors and available in the SOIC-16 surface mount package, is designed for general purpose amplifier and switching applications.

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

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	$V_{CBO}$	75	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Continuous Collector Current	$I_C$	500	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)	$\theta_{JA}$	125	$^\circ\text{C/W}$
Thermal Resistance (Each Transistor)	$\theta_{JA}$	240	$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
$I_{CEV}$	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$			10	nA
$I_{CBO}$	$V_{CB}=60\text{V}$			10	nA
$I_{CBO}$	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$			10	$\mu\text{A}$
$I_{EBO}$	$V_{BE}=3.0\text{V}$			10	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	75			V
$BV_{CEO}$	$I_C=10\text{mA}$	40			V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0			V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$			0.3	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.0	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6		1.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			2.0	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}, T_A=-55^\circ\text{C}$	35			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100		300	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50			
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40			
$f_T$	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$		300		MHz
$C_{ib}$	$V_{EB}=0.5\text{V}, f=100\text{kHz}$		20		pF
$C_{ob}$	$V_{CB}=10\text{V}, f=100\text{kHz}$		4.0		pF
NF	$V_{CE}=10\text{V}, I_C=100\mu\text{A}, R_S=1.0\text{k}\Omega, f=1.0\text{kHz}$			2.0	dB

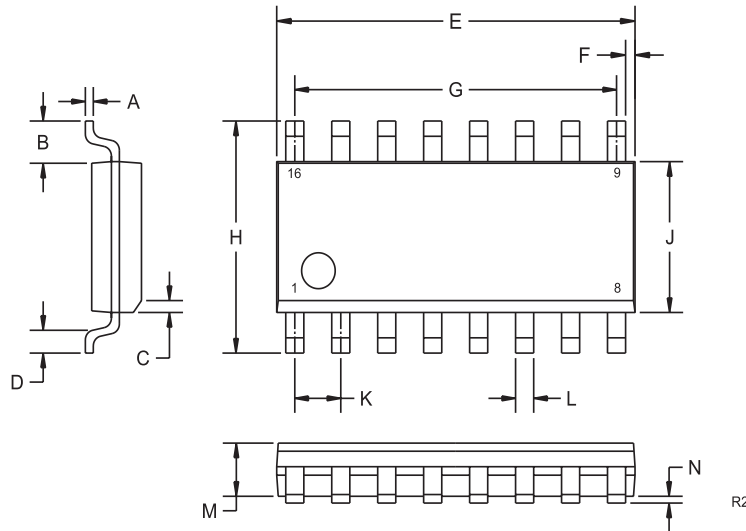
R0 ( 7-November 2001)

**SURFACE MOUNT  
NPN SILICON  
QUAD TRANSISTOR**

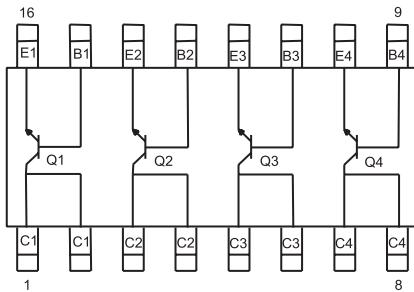
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$t_d$	$V_{CC}=30\text{V}$ , $V_{BE(\text{OFF})}=0.5\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=15\text{mA}$		8.0		ns
$t_r$	$V_{CC}=30\text{V}$ , $V_{BE(\text{OFF})}=0.5\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=15\text{mA}$		20		ns
$t_s$	$V_{CC}=30\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=I_{B2}=15\text{mA}$		180		ns
$t_f$	$V_{CC}=30\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=I_{B2}=15\text{mA}$		40		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)