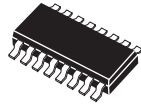


MMPQ2222A
SURFACE MOUNT
NPN SILICON
QUAD TRANSISTOR



SOIC-16 CASE

CentralTM

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.

MARKING CODE: 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} | 75 | V |
| V_{CEO} | 40 | V |
| V_{EBO} | 6.0 | V |
| I_C | 500 | mA |
| P_D | 1000 | mW |
| 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)

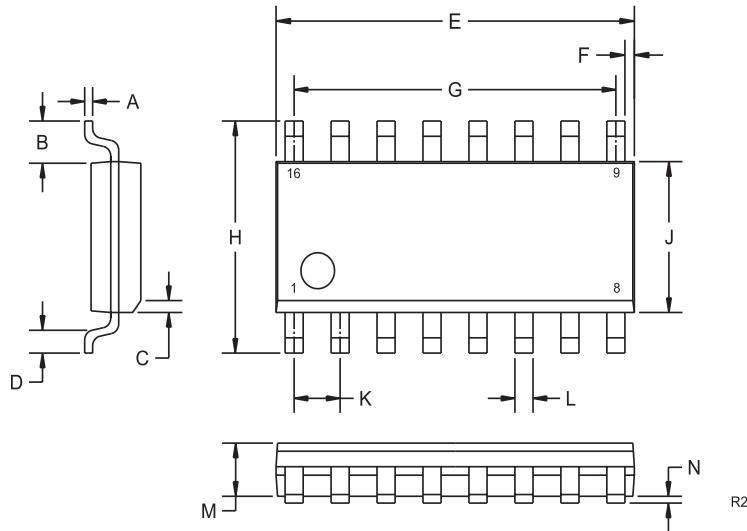
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|---|-----|-----|-----|---------------|
| I_{CEV} | $V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$ | | | 10 | nA |
| I_{CBO} | $V_{CB}=60\text{V}$ | | | 10 | nA |
| I_{CBO} | $V_{CB}=60\text{V}, T_A=125^\circ\text{C}$ | | | 10 | μA |
| I_{EBO} | $V_{BE}=3.0\text{V}$ | | | 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 |

R1 (14-November 2002)

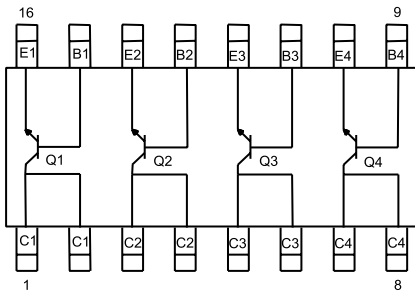
ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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



MARKING CODE: FULL PART NUMBER

| SYMBOL | DIMENSIONS | | 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)