# MFQ930C
# MFQ960C
# MFQ990C

**CASE 632-02, STYLE 1**
**TO-116**

**QUAD**
**DUAL-IN-LINE**
**TMOS**

**N-CHANNEL — ENHANCEMENT**

**MAXIMUM RATINGS**

| Rating | Symbol | MFQ930C | MFQ960C | MFQ990C | Unit |
|---|---|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 35 | 60 | 90 | Vdc |
| Drain-Gate Voltage | $V_{DG}$ | 35 | 60 | 90 | Vdc |
| Gate-Source Voltage | $V_{GS}$ | | ±30 | | Vdc |
| Drain Current<br>Continuous (1)<br>Pulsed (2) | <br>$I_D$<br>$I_{DM}$ | | <br>2.0<br>3.0 | | Adc |
| | | | Each Transistor | Total Device | |
| Total Device Dissipation @ $T_A$ = 25°C<br>Derate Above 25°C | $P_D$ | | 0.5<br>17.0 | 2.0<br>66.6 | Watts<br>mW/°C |
| Operating and Storage Junction Temperature Range | $T_J$, $T_{stg}$ | | −55 to +150 | | °C |

**Refer to MFE930 for graphs.**

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted.)

| Characteristic | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | | |
| Drain-Source Breakdown Voltage ($V_{GS}$ = 0, $I_D$ = 10 μA) | | $V_{(BR)DSX}$ | | | | Vdc |
| | MFQ930C | | 35 | — | — | |
| | MFQ960C | | 60 | — | — | |
| | MFQ990C | | 90 | — | — | |
| Gate Reverse Current ($V_{GS}$ = 15 Vdc, $V_{DS}$ = 0) | | $I_{GSS}$ | — | — | 50 | nAdc |
| **ON CHARACTERISTICS*** | | | | | | |
| Zero-Gate-Voltage Drain Current ($V_{DS}$ = Maximum Rating, $V_{GS}$ = 0) | | $I_{DSS}$ | — | — | 10 | μAdc |
| Gate Threshold Voltage ($I_D$ = 1.0 mA, $V_{DS}$ = $V_{GS}$) | | $V_{GS(Th)}$ | 1.0 | — | 3.5 | Vdc |
| Drain-Source On-Voltage ($V_{GS}$ = 10 V) | | $V_{DS(on)}$ | | | | Vdc |
| ($I_D$ = 0.5 A) | MFQ930C | | — | 0.4 | 0.7 | |
| | MFQ960C | | — | 0.6 | 0.8 | |
| | MFQ990C | | — | 0.6 | 1.0 | |
| ($I_D$ = 1.0 A) | MFQ930C | | — | 0.9 | 1.4 | |
| | MFQ960C | | — | 1.2 | 1.7 | |
| | MFQ990C | | — | 1.2 | 2.0 | |
| ($I_D$ = 2.0 A) | MFQ930C | | — | 2.2 | 3.0 | |
| | MFQ960C | | — | 2.8 | 3.5 | |
| | MFQ990C | | — | 2.8 | 4.0 | |
| Static Drain-Source On Resistance ($V_{GS}$ = 10 Vdc, $I_D$ = 1.0 Adc) | | $r_{DS(on)}$ | | | | Ohms |
| | MFQ930C | | — | 0.9 | 1.4 | |
| | MFQ960C | | — | 1.2 | 1.7 | |
| | MFQ990C | | — | 1.2 | 2.0 | |
| On-State Drain Current ($V_{DS}$ = 25 V, $V_{GS}$ = 10 V) | | $I_{D(on)}$ | 1.0 | 2.0 | — | Amps |
| **SMALL-SIGNAL CHARACTERISTICS** | | | | | | |
| Input Capacitance ($V_{DS}$ = 25 V, $V_{GS}$ = 0, f = 1.0 MHz) | | $C_{iss}$ | — | 60 | 70 | pF |
| Reverse Transfer Capacitance ($V_{DS}$ = 25 V, $V_{GS}$ = 0, f = 1.0 MHz) | | $C_{rss}$ | — | 13 | 18 | pF |
| Output Capacitance ($V_{DS}$ = 25 V, $V_{GS}$ = 0, f = 1.0 MHz) | | $C_{oss}$ | — | 49 | 60 | pF |
| Forward Transconductance ($V_{DS}$ = 25 V, $I_D$ = 0.5 A) | | $g_{fs}$ | 200 | 380 | — | mmhos |
| **SWITCHING CHARACTERISTICS** | | | | | | |
| Turn-On Time | | $t_{on}$ | — | 7.0 | 15 | ns |
| Turn-Off Time | | $t_{off}$ | — | 7.0 | 15 | ns |