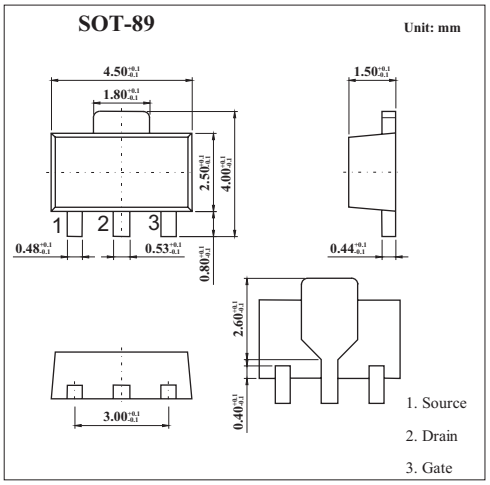
# 250V P-Channel Enhancement Mode Vertical MOSFET
# KVP4424Z

## Features

- 240 Volt $V_{DS}$
- $R_{DS(on)}$= 8.8Ω typical at $V_{GS}$=-3.5V
- Low threshold and Fast switching




## Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | -240 | V |
| Continuous Drain Current at $T_{amb}$=25℃ | $I_D$ | -200 | mA |
| Pulsed Drain Current | $I_{DM}$ | -1 | A |
| Gate Source Voltage | $V_{GS}$ | ± 40 | V |
| Power Dissipation at $T_{amb}$ =25℃ | $P_{tot}$ | 1* | W |
| Operating and Storage Temperature Range | $T_j$:$T_{stg}$ | -55 to +150 | ℃ |

* recommended Ptot calculated using FR4 measuring 15X15X0.6mm

# KVP4424Z

## ■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $B_{VDSS}$ | $I_D$=-1mA, $V_{GS}$=0V | -240 | | | V |
| Gate-Source Threshold Voltage | $V_{GS(th)}$ | $I_D$=-1mA, $V_{DS}$= $V_{GS}$ | -0.7 | -1.4 | -2.0 | V |
| Gate-Body Leakage | $I_{GSS}$ | $V_{GS}$=± 40V, $V_{DS}$=0V | | | 100 | nA |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-240V, $V_{GS}$=0V | | | -10 | μA |
| | | $V_{DS}$=-190V, $V_{GS}$=0V, T=125℃ | | | -100 | μA |
| On-State Drain Current | $I_{D(on)}$ | $V_{DS}$=-10V, $V_{GS}$=-10V | -0.75 | -1.0 | | A |
| Static Drain-Source | $R_{DS(on)}$ | $V_{GS}$=-10V, $I_D$=-200mA | | 7.1 | 9 | Ω |
| On-State Resistance | | $V_{GS}$=-3.5V, $I_D$=-100mA | | 8.8 | 11 | Ω |
| Forward Transconductance *1,2 | $g_{fs}$ | $V_{DS}$=-10V,$I_D$=-0.2A | 125 | | | mS |
| Input Capacitance *2 | $C_{iss}$ | $V_{DS}$=-25V, $V_{GS}$=0V, f=1MHz | | 100 | 200 | pF |
| Common Source Output Capacitance *2 | $C_{oss}$ | | | 18 | 25 | pF |
| Reverse Transfer Capacitance*2 | $C_{rss}$ | | | 5 | 15 | pF |
| Turn-On Delay Time *2,3 | $t_{d(on)}$ | $V_{DD}$ ≈-50V, $I_D$ =-0.25A,$V_{GEN}$=-10V | | 8 | 15 | ns |
| Rise Time *2,3 | $t_r$ | | | 8 | 15 | ns |
| Turn-Off Delay Time *2,3 | $t_{d(off)}$ | | | 26 | 40 | ns |
| Fall Time *2,3 | $t_f$ | | | 20 | 30 | ns |

*1 Measured under pulsed conditions. Width=300μs. Duty cycle ≤2%

*2 Sample test.

*3 Switching times measured with 50Ω source impedance and ＜5ns rise time on a pulse generator

Spice parameter data is available upon request for this device

## ■ Marking

| Marking | 24P |
|---|---|