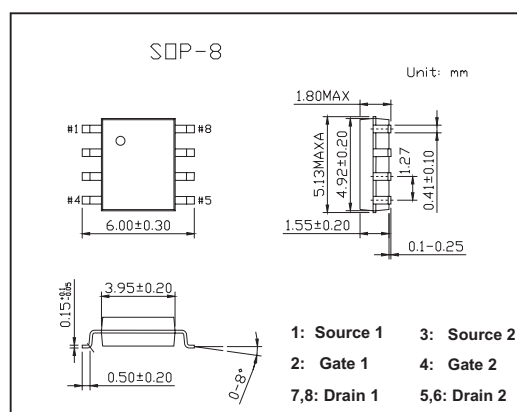
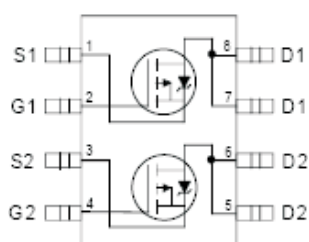


# HEXFET<sup>®</sup> Power MOSFET

## KRF7325

### ■ Features

- Trench Technology
- Ultra Low On-Resistance
- Dual P-Channel MOSFET
- Low Profile (<1.8mm)
- Available in Tape & Reel



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

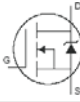
| Parameter                                                           | Symbol          | Rating       | Unit                |
|---------------------------------------------------------------------|-----------------|--------------|---------------------|
| Drain- Source Voltage                                               | $V_{DS}$        | -12          | V                   |
| Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 25^\circ\text{C}$ | $I_D$           | -7.8         | A                   |
| Continuous Drain Current, $V_{GS} @ -4.5V @ T_a = 70^\circ\text{C}$ | $I_D$           | -6.2         |                     |
| Pulsed Drain Current *1                                             | $I_{DM}$        | -39          |                     |
| Power Dissipation *2 @ $T_a = 25^\circ\text{C}$                     | $P_D$           | 2.0          | W                   |
| Power Dissipation *2 @ $T_a = 70^\circ\text{C}$                     | $P_D$           | 1.3          | W                   |
| Linear Derating Factor                                              |                 | 16           | W/ $^\circ\text{C}$ |
| Gate-to-Source Voltage                                              | $V_{GS}$        | $\pm 8.0$    | V                   |
| Junction and Storage Temperature Range                              | $T_J, T_{STG}$  | -55 to + 150 | $^\circ\text{C}$    |
| Junction-to-Drain Lead                                              | $R_{\theta JL}$ | 20           | $^\circ\text{C/W}$  |
| Maximum Junction-to-Ambient *2                                      | $R_{\theta JA}$ | 62.5         | $^\circ\text{C/W}$  |

\*1 Repetitive rating; pulse width limited by max. junction temperature.

\*2 When mounted on 1 inch square copper board.

## KRF7325

## ■ Electrical Characteristics Ta = 25°C

| Parameter                              | Symbol                            | Testconditions                                                                                                                                      | Min   | Typ   | Max   | Unit    |
|----------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|---------|
| Drain-to-Source Breakdown Voltage      | $V_{(BR)DSS}$                     | $V_{GS} = 0V, I_D = -250 \mu A$                                                                                                                     | -12   |       |       | V       |
| Breakdown Voltage Temp. Coefficient    | $\Delta V_{(BR)DSS} / \Delta T_J$ | $I_D = -1mA, \text{Reference to } 25^\circ C$                                                                                                       |       | 0.007 |       | V/°C    |
| Static Drain-to-Source On-Resistance   | $R_{DS(on)}$                      | $V_{GS} = -4.5V, I_D = -7.8A^{*1}$                                                                                                                  |       |       | 24    | mΩ      |
|                                        |                                   | $V_{GS} = -2.5V, I_D = -6.2A^{*1}$                                                                                                                  |       |       | 33    |         |
|                                        |                                   | $V_{GS} = -1.8V, I_D = -3.9A^{*1}$                                                                                                                  |       |       | 49    |         |
| Gate Threshold Voltage                 | $V_{GS(th)}$                      | $V_{DS} = V_{GS}, I_D = -250 \mu A$                                                                                                                 | -0.40 |       | -0.90 | V       |
| Forward Transconductance               | $g_{fs}$                          | $V_{DS} = -10V, I_D = -7.8A^{*1}$                                                                                                                   | 17    |       |       | S       |
| Drain-to-Source Leakage Current        | $I_{DSS}$                         | $V_{DS} = -9.6V, V_{GS} = 0V$                                                                                                                       |       |       | -1.0  | $\mu A$ |
|                                        |                                   | $V_{DS} = -9.6V, V_{GS} = 0V, T_J = 70^\circ C$                                                                                                     |       |       | -25   |         |
| Gate-to-Source Forward Leakage         | $I_{GSS}$                         | $V_{GS} = -8.0V$                                                                                                                                    |       |       | -100  | nA      |
| Gate-to-Source Reverse Leakage         |                                   | $V_{GS} = 8.0V$                                                                                                                                     |       |       | 100   |         |
| Total Gate Charge                      | $Q_g$                             | $I_D = -7.8A$                                                                                                                                       |       | 22    | 33    | nC      |
| Gate-to-Source Charge                  | $Q_{gs}$                          | $V_{DS} = -6.0V$                                                                                                                                    |       | 5.0   | 7.5   |         |
| Gate-to-Drain ("Miller") Charge        | $Q_{gd}$                          | $V_{GS} = -4.5V$                                                                                                                                    |       | 4.7   | 7.0   |         |
| Turn-On Delay Time                     | $t_{d(on)}$                       | $V_{DD} = -6.0V, V_{GS} = -4.5V$                                                                                                                    |       | 9.4   |       | ns      |
| Rise Time                              | $t_r$                             | $I_D = -1.0A$                                                                                                                                       |       | 9.8   |       |         |
| Turn-Off Delay Time                    | $t_{d(off)}$                      | $R_G = 6 \Omega$                                                                                                                                    |       | 240   |       |         |
| Fall Time                              | $t_f$                             |                                                                                                                                                     |       | 180   |       |         |
| Input Capacitance                      | $C_{iss}$                         | $V_{GS} = 0V$                                                                                                                                       |       | 2020  |       | pF      |
| Output Capacitance                     | $C_{oss}$                         | $V_{DS} = -10V$                                                                                                                                     |       | 520   |       |         |
| Reverse Transfer Capacitance           | $C_{rss}$                         | $f = 1.0MHz$                                                                                                                                        |       | 330   |       |         |
| Continuous Source Current (Body Diode) | $I_S$                             | MOSFET symbol showing the integral reverse p-n junction diode.  |       |       | -2.0  | A       |
| Pulsed Source Current (Body Diode) *2  | $I_{SM}$                          |                                                                                                                                                     |       |       | -39   |         |
| Diode Forward Voltage                  | $V_{SD}$                          | $T_J = 25^\circ C, I_S = -2.0A, V_{GS} = 0V^{*1}$                                                                                                   |       |       | -1.2  | V       |
| Reverse Recovery Time                  | $t_{rr}$                          | $T_J = 25^\circ C, I_F = -2.0A$                                                                                                                     |       | 36    | 54    | ns      |
| Reverse Recovery Charge                | $Q_{rr}$                          | $di/dt = -100A/\mu s^{*1}$                                                                                                                          |       | 28    | 42    | nC      |

\*1 Pulse width  $\leq 400 \mu s$ ; duty cycle  $\leq 2\%$ .

\*2 Repetitive rating; pulse width limited by max. junction temperature.