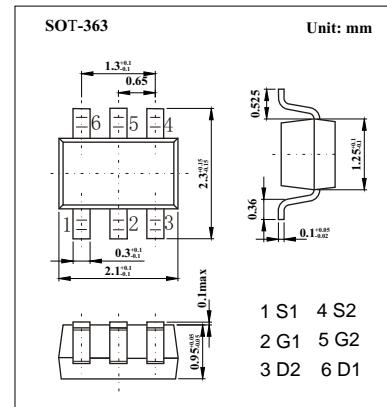
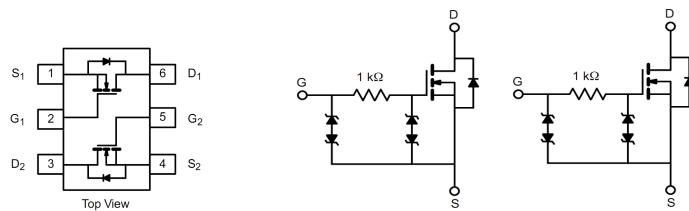


## Dual N-Channel MOSFET

### KI1912

#### ■ Features

- $V_{DS}=20V, I_D = 1.13A$
- $R_{DS(on)}= 280m\Omega @ V_{GS}=4.5V$
- ESD Protected: 2000 V
- Pb-Free Packages are Available
- Lead temperature for soldering:  $T_L=260\pm5^{\circ}C$



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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current $T_J = 150^{\circ}C$ (Note 1) $T_A=25^{\circ}C$ $T_A=85^{\circ}C$	$I_D$	1.13 0.81	A
Pulsed Drain Current	$I_{DM}$	4	A
Continuous Diode Current (Diode Conduction) (Note 1)	$I_S$	0.48	A
Maximum Power Dissipation (Note 1) $T_A=25^{\circ}C$ $T_A=85^{\circ}C$	$P_D$	0.57 0.3	W
Maximum Junction-to-Foot(Drain)	$R_{eJF}$	100	$^{\circ}C/W$
Maximum Junction-to-Ambient (Note 1)	$R_{eJA}$	220	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^{\circ}C$

Note: 1. Surface Mounted on 1" x 1" FR4 Board.

**KI1912**

Electrical Characteristics  $T_j = 25^\circ\text{C}$  unless otherwise noted

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$\text{BV}_{\text{DSS}}$	$V_{\text{GS}} = 0 \text{ V}, I_D = 100 \mu\text{A}$	20			V
Zero Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{\text{DS}} = 16 \text{ V}, V_{\text{GS}} = 0 \text{ V}$		1.0		$\mu\text{A}$
		$V_{\text{DS}} = 16 \text{ V}, V_{\text{GS}} = 0 \text{ V}, T_j = 85^\circ\text{C}$		5.0		
Gate Threshold Voltage	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}} = V_{\text{GS}}, I_D = 100 \mu\text{A}$	0.45			V
Gate-Body Leakage	$I_{\text{GSS}}$	$V_{\text{DS}} = 0 \text{ V}, V_{\text{GS}} = \pm 12 \text{ V}$			$\pm 10$	$\mu\text{A}$
Drain-Source On-State Resistance (Note 2)	$R_{\text{DS(on)}}$	$V_{\text{GS}} = 4.5 \text{ V}, I_D = 1.13 \text{ A}$			280	m
		$V_{\text{GS}} = 2.5 \text{ V}, I_D = 0.99 \text{ A}$			360	
		$V_{\text{GS}} = 1.8 \text{ V}, I_D = 0.2 \text{ A}$			450	
On-State Drain Current (Note 2)	$I_{\text{D(on)}}$	$V_{\text{DS}} = 5 \text{ V}, V_{\text{GS}} = 4.5 \text{ V}$	2			A
Forward Transconductance (Note 2)	$g_{\text{fs}}$	$V_{\text{DS}} = 10 \text{ V}, I_D = 1.13 \text{ A}$		2.6		S
Total Gate Charge (Note 3)	$Q_g$	$V_{\text{DS}} = 10 \text{ V}, V_{\text{GS}} = 4.5 \text{ V}, I_D = 1.13 \text{ A}$		0.65	1.0	nC
Gate-Source Charge (Note 3)	$Q_{\text{gs}}$			0.2		
Gate-Drain Charge (Note 3)	$Q_{\text{gd}}$			0.23		
Turn-On Delay Time (Note 3)	$t_{\text{d(on)}}$	$V_{\text{DS}} = 10 \text{ V}, R_L = 20 \Omega, I_D = 0.5 \text{ A}$ $V_{\text{GS}} = 4.5 \text{ V}, R_{\text{GEN}} = 6 \Omega$		45	70	ns
Rise Time (Note 3)	$t_r$			85	130	
Turn-Off Delay Time (Note 3)	$t_{\text{d(off)}}$			350	530	
Fall Time (Note 3)	$t_f$			210	320	
Diode Forward Voltage (Note 2)	$V_{\text{SD}}$	$I_S = 0.48 \text{ A}, V_{\text{GS}} = 0 \text{ V}$			1.2	V

Notes: 2. Pulse test; pulse width 300  $\mu\text{s}$ , duty cycle 2%.

3. Guaranteed by design, not subject to production testing.