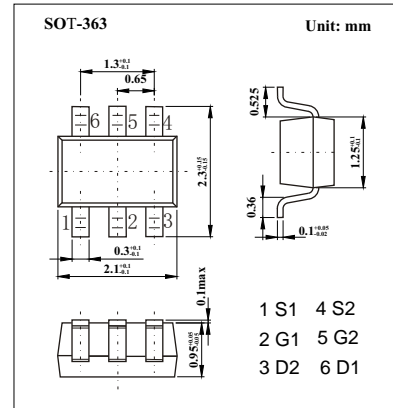
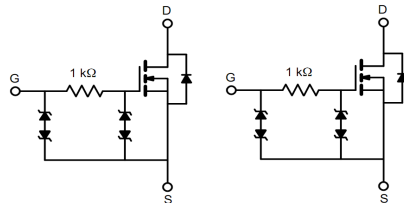
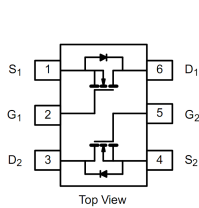


■ Features

- $V_{DS}=20V, I_D = 1.13A$
- $R_{DS(on)} = 280m\Omega @ V_{GS}=4.5V$
- ESD Protected: 2000 V
- Pb-Free Packages are Available
- Lead temperature for soldering:  $T_L=260\pm 5^\circ C$



■ 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)	$R_{\theta JF}$	100	$^\circ C/W$
Maximum Junction-to-Ambient (Note 1)	$R_{\theta JA}$	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.

Electrical Characteristics  $T_j = 25$  unless otherwise noted

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

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

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