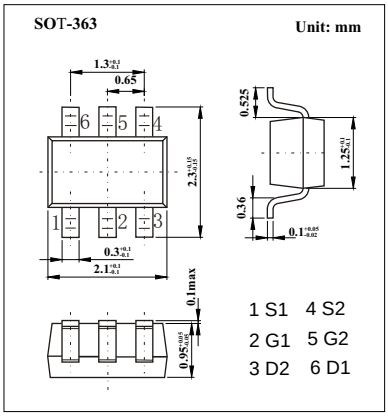
TY Semicondutor®

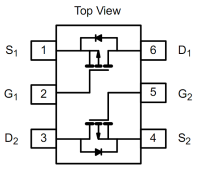
Product specification

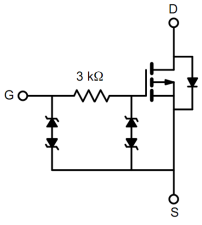
KI1917

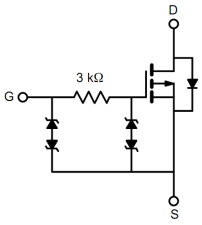
■ Features

- V_{DS}= -12V,I_D = -1.0A
- $R_{DS(on)}$= 370m Ω @V_{GS}= -4.5V
- ESD Protected: 3000 V
- Pb-Free Packages are Available
- Lead temperature for soldering:T_L=260±5℃









■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current T_J = 150℃ (Note 1) T_A=25°C T_A=85°C	I_D	-1.0 -0.73	A
Pulsed Drain Current	I_{DM}	-3	A
Continuous Diode Current (Diode Conduction) (Note 1)	I_S	-0.47	A
Maximum Power Dissipation (Note 1) T_A=25°C T_A=85°C	P_D	0.57 0.3	W
Maximum Junction-to-Foot(Drain)	$R_{\theta JF}$	100	℃/W
Maximum Junction-to-Ambient (Note 1)	$R_{\theta JA}$	220	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	℃

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

■ Electrical Characteristics T_j = 25°C unless otherwise noted

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0 V, I_D = -100 µA	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -9.6V , V_{GS} = 0V			1.0	µA
		V_{DS} = -9.6V , V_{GS} = 0V , T_J =85°C			5.0	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D = -100uA	-0.45			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V , V_{GS} = ±12V			±10	µA
Drain-Source On-State Resistance (Note 2)	$R_{DS(on)}$	V_{GS} = -4.5V , I_D = -1.0A			370	mΩ
		V_{GS} = -2.5V , I_D = -0.81A			575	
		V_{GS} = -1.8V , I_D = -0.2A			800	
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 = -1.0A		1.7		S
Total Gate Charge (Note 3)	Q_g	V_{DS} = -6 V, V_{GS} = -4.5 V, I_D = -1.0 A		1.3	2.0	nC
Gate-Source Charge (Note 3)	Q_{gs}			0.31		
Gate-Drain Charge (Note 3)	Q_{gd}			0.31		
Turn-On Delay Time (Note 3)	$t_{d(on)}$	V_{DS} = -6V , R_L = 12Ω , I_D= -0.5 A V_{GS}= -4.5V , R_{GEN} = 6Ω		0.17	0.26	µs
Rise Time (Note 3)	t_r			0.47	0.71	
Turn-Off Delay Time (Note 3)	$t_{d(off)}$			0.96	1.4	
Fall Time (Note 3)	t_f			1	1.5	
Diode Forward Voltage (Note 2)	V_{SD}	I_S = -0.47 A, V_{GS} = 0 V			1.2	V

Notes: 2. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2%.

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