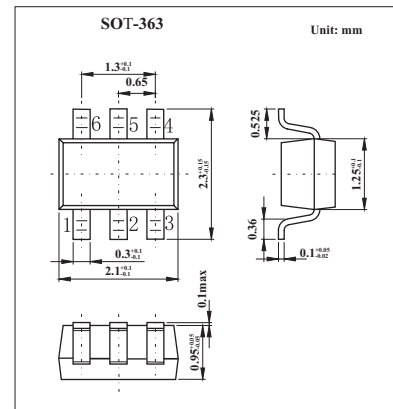
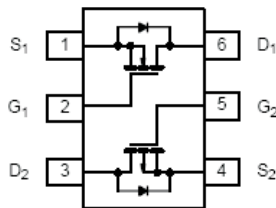


Complementary 30-V (D-S) MOSFET

KI1539DL

■ PIN Configuration

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

Parameter	Symbol	N-Channel		P-Channel		Unit
		5 secs	Steady State	5 secs	Steady State	
Drain-Source Voltage	V_{DS}	30		-30		V
Gate-Source Voltage	V_{GS}	± 20				V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)* $T_A = 25^\circ\text{C}$	I_D	0.63	0.54	-0.45	-0.42	A
		$T_A = 85^\circ\text{C}$	0.45	0.43	-0.32	-0.31
Pulsed Drain Current	I_{DM}	1				A
Continuous Source Current (Diode Conduction) ^a	I_S	0.25	0.23	-0.25	-0.23	A
Maximum Power Dissipation* $T_A = 25^\circ\text{C}$	P_D	0.3	0.27	0.3	0.27	W
		$T_A = 85^\circ\text{C}$	0.16	0.14	0.16	0.14
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150				$^\circ\text{C}$

*Surface Mounted on 1" X 1" FR4 Board.

■ Thermal Resistance Ratings $T_A = 25^\circ\text{C}$

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient*	$t \leq 5$ sec	R_{thJA}	360	415	$^\circ\text{C}/\text{W}$
	Steady State		400	460	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	300	350	

*Surface Mounted on 1" X 1" FR4 Board.

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1.0			V
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-1.0			
Gate Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	N-Ch			1	μA
			P-Ch			-1	
		V _{DS} = -24 V, V _{GS} = 0 V	N-Ch			5	
			P-Ch			-5	
On State Drain Currenta	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	1.0			A
		V _{DS} ≤ -5 V, V _{GS} = -10 V	P-Ch	-1.0			
Drain Source On State Resistance*	r _{DS(on)}	V _{GS} = 10 V, I _D = 0.59A	N-Ch	0.410	0.480		Ω
			P-Ch	0.800	0.940		
		V _{GS} = 4.5 V, I _D = 0.2A	N-Ch	0.600	0.700		
			P-Ch	1.5	1.700		
Forward Transconductance*	g _{fs}	V _{DS} = 15 V, I _D = 0.59A	N-Ch	0.75			mS
		V _{DS} = -15 V, I _D = -0.42A	P-Ch	0.5			
Diode Forward Voltage*	V _{SD}	I _S = 0.23A, V _{GS} = 0 V	N-Ch	0.8	1.2		V
		I _S = -0.23A, V _{GS} = 0 V	P-Ch	-0.86	-1.2		
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 10 V, I _D = 0.59A	N-Ch	0.86	1.4		pC
Gate Source Charge	Q _{gs}	P-Channel V _{DS} = -15 V, V _{GS} = -10 V, I _D = 0.42A	N-Ch	0.24			
			P-Ch	0.21			
Gate Drain Charge	Q _{gd}		N-Ch	0.08			
Turn On Time	t _{d(on)}	N Channel V _{DD} = 15 V, R _L = 30 Ω	N-Ch	5	10		ns
			P-Ch	4	10		
Rise Time	t _r	I _D = 0.5 A, V _{GEN} = 10V, R _g = 6 Ω	N-Ch	8	15		
			P-Ch	8	15		
Turn Off Delay Time	t _{d(off)}	P-Channel V _{DD} = -15 V, R _L = 30 Ω	N-Ch	8	15		
			P-Ch	5	10		
Fall Time	t _f	I _D = -0.5 A, V _{GEN} = -10 V, R _g = 6 Ω	N-Ch	7	15		
			P-Ch	7	15		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 0.23 A, di/dt = 100 A/μs	N-Ch	15	30		
		I _F = -0.23 A, di/dt = 100 A/μs	P-Ch	20	40		

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