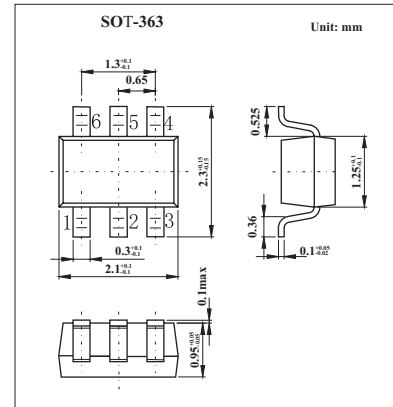
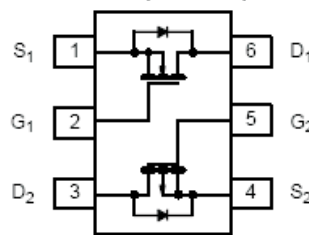
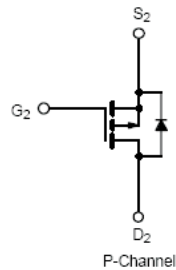
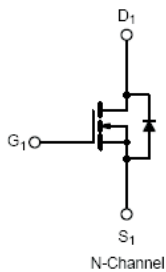


Complementary 20-V (D-S) Low-Threshold MOSFET

KI1563DH

■ Features

- TrenchFET Power MOSFETs
- Fast Switching

■ 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}	20		-20		V
Gate-Source Voltage	V_{GS}	± 8				V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)* $T_A = 25^\circ\text{C}$	I_D	1.28	1.13	-1	-0.88	A
		$T_A = 85^\circ\text{C}$	0.92	0.81	-0.72	-0.63
Pulsed Drain Current	I_{DM}	4		-3		A
Continuous Source Current (Diode Conduction)*	I_S	0.61	0.48	-0.61	-0.48	A
Maximum Power Dissipation* $T_A = 25^\circ\text{C}$	P_D	0.74	0.57	0.3	0.57	W
		$T_A = 85^\circ\text{C}$	0.38	0.3	0.16	0.3
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}	130	170	$^\circ\text{C}/\text{W}$
	Steady State		170	220	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	80	100	

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

KI1563DH

■ Electrical Characteristics T_J= 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 100 μ A	N-Ch	0.45		1	V
		V _{DS} = V _{GS} , I _D = -100 μ A	P-Ch	-0.45		1	
Gate Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0 V	N-Ch			1	μ A
		V _{DS} = -16V, V _{GS} = 0 V	P-Ch			-1	
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 85°C	N-Ch			5	μ A
		V _{DS} = -16V, V _{GS} = 0 V, T _J = 85°C	P-Ch			-5	
On State Drain Current*	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 4.5 V	N-Ch	2			A
		V _{DS} ≤ -5 V, V _{GS} = -4.5 V	P-Ch	-2			
Drain Source On State Resistance*	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 1.13A	N-Ch		0.220	0.280	Ω
		V _{GS} = -4.5 V, I _D = -0.88A	P-Ch		0.400	0.490	
		V _{GS} = 2.5 V, I _D = 0.99A	N-Ch		0.281	0.360	
		V _{GS} = -2.5 V, I _D = -0.71A	P-Ch		0.610	0.750	
		V _{GS} = 1.8 V, I _D = 0.2A	N-Ch		0.344	0.450	
		V _{GS} = -1.8 V, I _D = -0.20A	P-Ch		0.850	1.10	
Forward Transconductance*	g _{fs}	V _{DS} = 10 V, I _D = 1.13A	N-Ch		2.6		mS
		V _{DS} = -10 V, I _D = -0.88A	P-Ch		1.5		
Diode Forward Voltage*	V _{SD}	I _S = 0.48A, V _{GS} = 0 V	N-Ch		0.8	1.2	V
		I _S = -0.48A, V _{GS} = 0 V	P-Ch		-0.8	-1.2	
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 4.5V, I _D = 1.13A	N-Ch		1.25	2	pC
Gate Source Charge	Q _{gs}	P-Channel	N-Ch		0.21		
			P-Ch		0.3		
Gate Drain Charge	Q _{gd}	V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -0.88A	N-Ch		0.3		
			P-Ch		0.21		
Turn On Time	t _{d(on)}	N Channel V _{DD} = 10 V, R _L = 20 Ω	N-Ch		15	25	ns
Rise Time	t _r	I _D = 0.5 A, V _{GEN} = 4.5V, R _g = 6 Ω	P-Ch		18	30	
			N-Ch		22	35	
Turn Off Delay Time	t _{d(off)}	P-Channel V _{DD} = -10 V, R _L = 20 Ω	N-Ch		25	40	
			P-Ch		15	25	
Fall Time	t _f	I _D = -0.5 A, V _{GEN} = -4.5 V, R _g = 6 Ω	N-Ch		12	20	
			P-Ch		12	20	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 0.48 A, di/dt = 100 A/μ s	N-Ch		30	60	
			P-Ch		30	60	

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