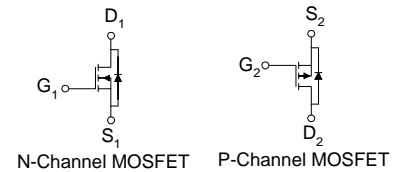
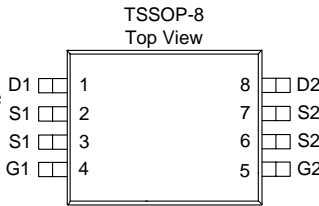


P & N-Channel 20-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize High Cell Density process. Low $r_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

- Low $r_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Miniature TSSOP-8 Surface Mount Package Saves Board Space
- High power and current handling capability
- Low side high current DC-DC Converter applications

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
20	47 @ $V_{GS} = 4.5V$	4.7
	66 @ $V_{GS} = 2.5V$	3.9
	95 @ $V_{GS} = 1.8V$	3.3
-20	47 @ $V_{GS} = -4.5V$	-4.7
	72 @ $V_{GS} = -2.5V$	-3.8
	95 @ $V_{GS} = -1.8V$	-3.3



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter	Symbol	N-Channel	P-Channel	Units
Drain-Source Voltage	V_{DS}	20	-20	V
Gate-Source Voltage	V_{GS}	8	-8	
Continuous Drain Current ^a	I_D	$T_A=25^\circ C$	4.7	A
		$T_A=70^\circ C$	3.8	
Pulsed Drain Current ^b	I_{DM}	± 50	± 50	
Continuous Source Current (Diode Conduction) ^a	I_S	2.3	-2.3	A
Power Dissipation ^a	P_D	$T_A=25^\circ C$	2.1	W
		$T_A=70^\circ C$	1.3	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	-55 to 150	$^\circ C$

THERMAL RESISTANCE RATINGS					
Parameter	Symbol	Typ	Max		
Maximum Junction-to-Ambient ^a	R_{thJA}	t <= 10 sec	72	83	$^\circ C/W$
		Steady State	100	120	

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

Parameter	Symbol	Test Conditions	Limits				Unit
			Ch	Min	Typ	Max	
Static							
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = 250 \mu A$	N	0.4			V
		$V_{GS} = V_{DS}, I_D = -250 \mu A$	P	-0.4			
Gate-Body Leakage	I_{GSS}	$V_{GS} = -8 V, V_{DS} = 0 V$	P			± 100	nA
		$V_{GS} = 8 V, V_{DS} = 0 V$	N			± 100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16 V, V_{GS} = 0 V$	P			-1	uA
		$V_{DS} = 16 V, V_{GS} = 0 V$	N			1	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = 5 V, V_{GS} = 4.5 V$	N	20			A
		$V_{DS} = -5 V, V_{GS} = -4.5 V$	P	-20			
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = 4.5 V, I_D = 4.7 A$	N			47	mΩ
		$V_{GS} = 2.5 V, I_D = 3.9 A$				66	
		$V_{GS} = 1.8 V, I_D = 3.3 A$				95	
		$V_{GS} = -4.5 V, I_D = -4.7 A$	P			47	
		$V_{GS} = -2.5 V, I_D = -3.8 A$				72	
		$V_{GS} = -1.8 V, I_D = -3.3 A$				95	
Forward Transconductance ^A	g_{fs}	$V_{DS} = 15 V, I_D = 10 A$	N		40		S
		$V_{DS} = -15 V, I_D = -9.5 A$	P		31		
Dynamic							
Total Gate Charge	Q_g	N-Channel $V_{DS}=15V, V_{GS}=4.5V, I_D=4.7A$ P-Channel $V_{DS}=-15V, V_{GS}=-4.5V, I_D=-4.7A$	N		7.0		nC
			P		12.0		
Gate-Source Charge	Q_{gs}		N		1.1		
			P		2.0		
Gate-Drain Charge	Q_{gd}		N		2.0		
			P		2.0		
Turn-On Delay Time	$t_{d(on)}$	N-Chaneel $V_{DD}=15V, V_{GS}=4.5V, I_D=1A$, $R_{GEN}=25\Omega$, P-Channel $V_{DD}=-15V, V_{GS}=-4.5V, I_D=-1A$ $R_{GEN}=15\Omega$	N		8		nS
			P		10		
Rise Time	t_r		N		24		
			P		20		
Turn-Off Delay Time	$t_{d(off)}$		N		35		
			P		31		
Fall-Time	t_f	N		10			
		P		21			

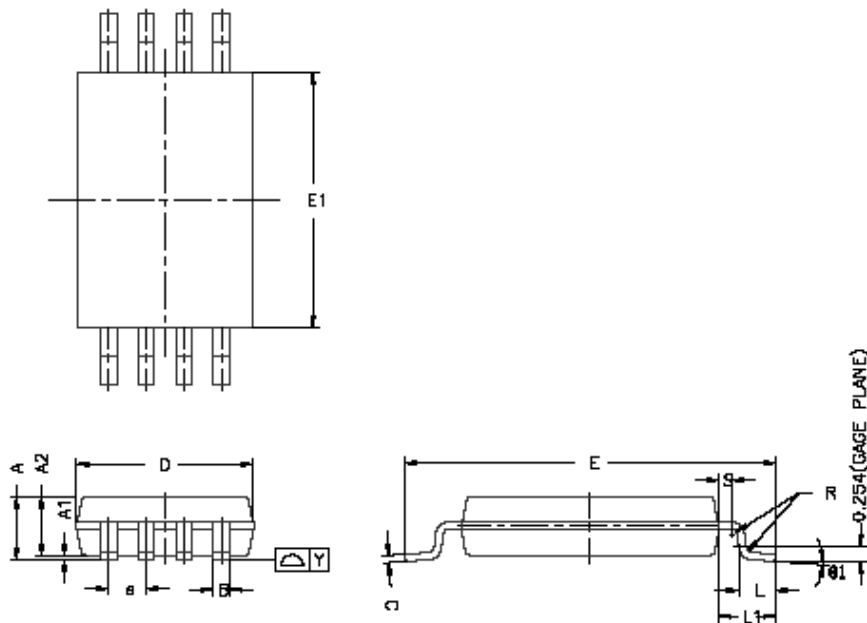
Notes

- a. Pulse test: PW <= 300us duty cycle <= 2%.
- b. Guaranteed by design, not subject to production testing.

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Package Information

TSSOP-8: 8LEAD



DIM.	MILLIMETERS		
	MIN.	NDM.	MAX.
A	1.05	1.10	1.20
A(1)	0.05	0.10	0.15
A(2)	0.99	1.02	1.05
B	0.19	0.25	0.30
C	---	0.127	---
D	2.90	3.00	3.10
E	6.20	6.40	6.60
E1	4.30	4.40	4.50
b	0.6535C		
L	0.45	0.60	0.75
L1	0.90	1.00	1.10
Y	---	---	0.10
Ø1	D	F	F'
R	0.09	---	---
S	0.20	---	---