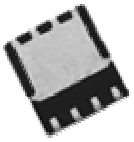
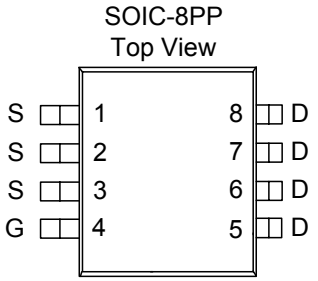
P-Channel 60-V (D-S) MOSFET

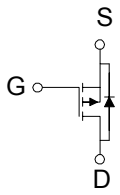
These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ mΩ	I_D (A)
-60	45 @ V_{GS} = -10V	-10
	60 @ V_{GS} = -4.5V	-8

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe SOIC-8PP saves board space
- Fast switching speed
- High performance trench technology







P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		**Symbol**	**Maximum**	**Units**
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current[a]	T_A=25°C	I_D	-10	A
	T_A=70°C		-8	
Pulsed Drain Current[b]		I_{DM}	±50	
Continuous Source Current (Diode Conduction)[a]		I_S	-2.1	A
Power Dissipation[a]	T_A=25°C	P_D	5.0	W
	T_A=70°C		3.2	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Maximum**	**Units**
Maximum Junction-to-Ambient[a]	t <= 10 sec	$R_{\theta JA}$	25	°C/W
	Steady State		65	°C/W

Notes

a. Surface Mounted on 1" x 1" FR4 Board.

b. Pulse width limited by maximum junction temperature

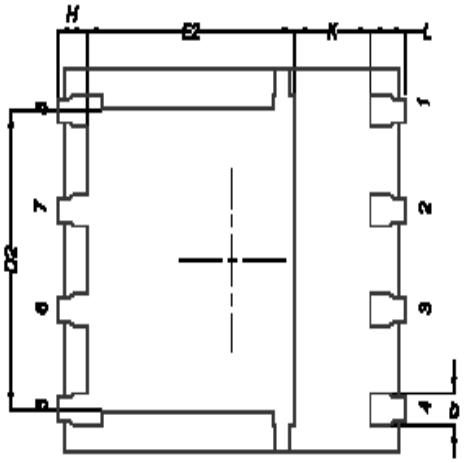
SPECIFICATIONS (T_A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	**Symbol**	**Test Conditions**	**Limits**			**Unit**
			Min	**Typ**	**Max**	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 uA	-1			
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±25 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -48 V, V_{GS} = 0 V			-1	uA
		V_{DS} = -48 V, V_{GS} = 0 V, T_J = 55°C			-5	
On-State Drain Current[A]	$I_{D(on)}$	V_{DS} = -5 V, V_{GS} = -10 V	-50			A
Drain-Source On-Resistance[A]	$r_{DS(on)}$	V_{GS} = -10 V, I_D = -9.0 A			45	mΩ
		V_{GS} = -4.5 V, I_D = -7.2 A			60	
Forward Tranconductance[A]	g_{fs}	V_{DS} = -15 V, I_D = -9.0 A		31		S
Diode Forward Voltage	V_{SD}	I_S = -2.1 A, V_{GS} = 0 V		-0.7		V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = -15 V, V_{GS} = -4.5 V, I_D = -9.0 A		15.3		nC
Gate-Source Charge	Q_{gs}			5.2		
Gate-Drain Charge	Q_{gd}			5.8		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15 V, R_L = 15 Ω , I_D = -1 A, V_{GEN} = -10 V, R_G = 6Ω		15		nS
Rise Time	t_r			12		
Turn-Off Delay Time	$t_{d(off)}$			62		
Fall-Time	t_f			46		

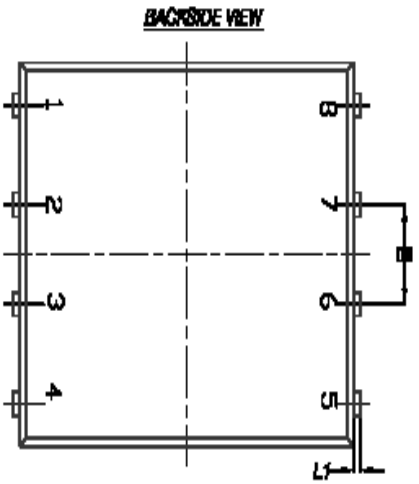
Notes

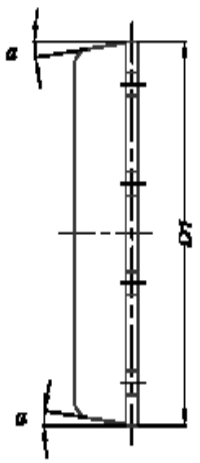
a. Pulse test: PW <= 300us duty cycle <= 2%.

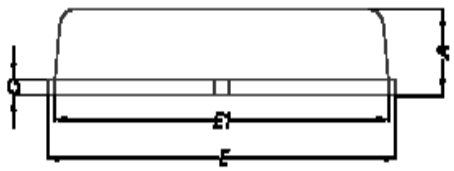
b. Guaranteed by design, not subject to production testing.

Package Information









DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.81	3.81	3.96
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.36	3.69	3.78
θ	1.27 BSC		
H	0.41	0.51	0.61
K	1.10	-	-
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
α	0°	-	12°