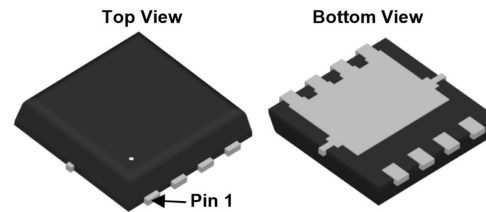


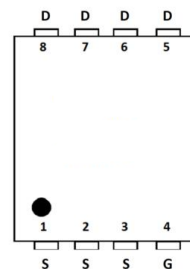
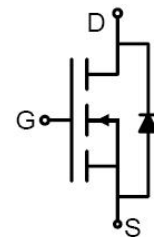
Feature

- 500V,3A
 $R_{DS(ON)} < 3.5 \Omega @ V_{GS}=10V$
- Fast Switching
- Lead free product is acquired
- Excellent $R_{DS(ON)}$ and Low Gate Charge


PDFN3x3-8L

Application

- PWM applications
- Load Switch
- Power management


Pin Assignment

Schematic Diagram

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	500	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current ($T_a=25^\circ\text{C}$)	I_D	3	A
Continuous Drain Current ($T_a=100^\circ\text{C}$)	I_D	1.5	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	8	A
Single Pulsed Avalanche Energy ⁽²⁾	E_{AS}	35	mJ
Power Dissipation	P_D	29	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	3.5	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

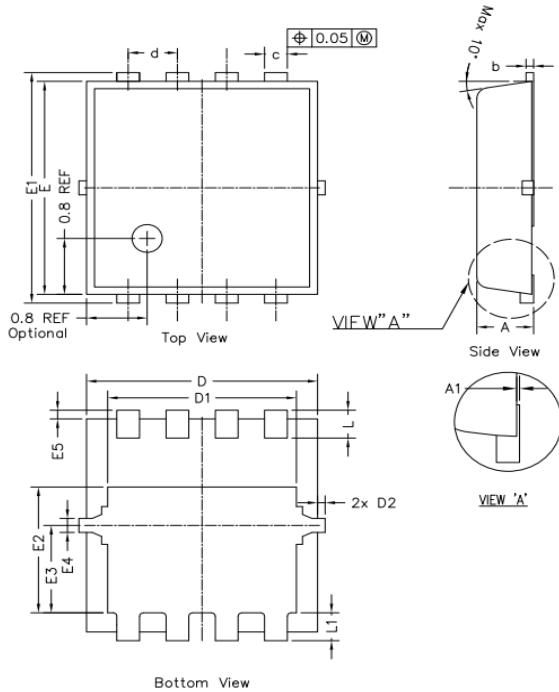
**MOSFET ELECTRICAL CHARACTERISTICS**($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	500	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =500V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ± 30V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage ⁽³⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3.6	4	V
Drain-source on-resistance ⁽³⁾	R _{DS(on)}	V _{GS} =10V, I _D =1.5A	-	2.6	3.5	Ω
Forward tranconductance ⁽³⁾	g _{FS}	V _{DS} =10V, I _D =1.5A	0.5	-	-	S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz	-	331	-	pF
Output Capacitance	C _{oss}		-	24	-	
Reverse Transfer Capacitance	C _{rss}		-	3	-	
Switching characteristics						
Turn-off delay time	t _{d(off)}	V _{DD} =300V, I _D =3A,V _{GS} =10V, R _G =25Ω	-	13	-	ns
Total Gate Charge	Q _g	V _D S=480V, I _D =1A, V _G S=10V	-	4.8	-	nC
Gate-Source Charge	Q _{gs}		-	0.7	-	
Gate-Drain Charge	Q _{gd}		-	2.7	-	
Source-Drain Diode characteristics						
Diode Forward voltage ⁽³⁾	V _{DS}	V _{GS} =0V, I _S =3A	-	-	1.4	V
Diode Forward current ⁽⁴⁾	I _S		-	-	3	A
Body Diode Reverse Recovery Time	trr	T _J =25° , IF=3A,di/dt=100A/us		190		ns
Body Diode Reverse Recovery Charge	Qrr	T _J =25° , IF=3A,di/dt=100A/us		0.53		uc

Notes:

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. EAS Condition: $T_J = 25^{\circ}\text{C}, V_{DD} = 50V, R_G = 2.0\Omega, L = 10mH$
3. Pulse Test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
4. Surface Mounted on FR4 Board, $t \leq 10\text{ sec}$

Package Mechanical Data(PDFN3x3-8L)



SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.700	0.750	0.800	0.028	0.030	0.031
A1	---	---	0.050	----	----	0.002
b	0.144	0.152	0.202	0.006	0.006	0.008
c	0.250	0.300	0.350	0.010	0.012	0.014
d	0.65 BSC			0.026 BSC		
D	2.950	3.050	3.150	0.116	0.120	0.124
D1	2.390	2.490	2.590	0.094	0.098	0.102
D2	---	---	0.125	---	---	0.005
E	2.950	3.050	3.150	0.116	0.120	0.124
E1	3.200	3.300	3.400	0.126	0.130	0.134
E2	1.700	1.800	1.900	0.067	0.071	0.075
E3	1.150	1.250	1.350	0.045	0.049	0.053
E4	0.150	0.200	0.250	0.006	0.008	0.010
E5	0.075	0.125	0.175	0.003	0.005	0.007
L	0.300	0.400	0.500	0.01	0.02	0.02
L1	0.300	0.400	0.500	0.01	0.02	0.02