



40V Single N-Channel Enhancement-Mode MOSFET

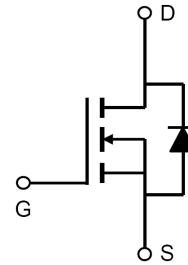
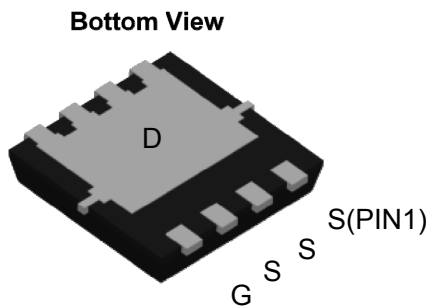
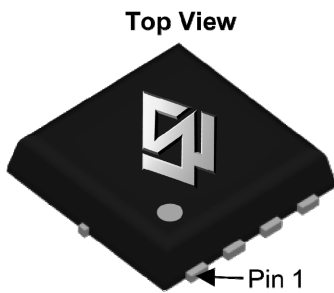
General Description

- Low resistance.
- Use as a load switch.
- Use in PWM applications

Product Summary

- BV_{DSS} 40V
- $R_{DS(on)}$ @VGS = 10V < 9mΩ
- $R_{DS(on)}$ @VGS = 4.5V < 14mΩ

PDFN3X3-8L



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current ($T_A=25^\circ\text{C}$)	I_D	30	A
Drain Current ($T_A=75^\circ\text{C}$)		22	A
Pulsed Drain Current ^a	I_{DM}	140	A
Power Dissipation ^b ($T_A=25^\circ\text{C}$)	P_D	44	W
Power Dissipation ^b ($T_A=75^\circ\text{C}$)		1.5	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Maximum	Units
Junction-to-Ambient ^a ($t \leq 10\text{s}$)	$R_{\theta JA}$	42	$^\circ\text{C/W}$
Junction-to-Ambient ^{a,d} (Steady-State)		62	$^\circ\text{C/W}$
Junction-to-Lead (Steady-State)	$R_{\theta JL}$	4	$^\circ\text{C/W}$

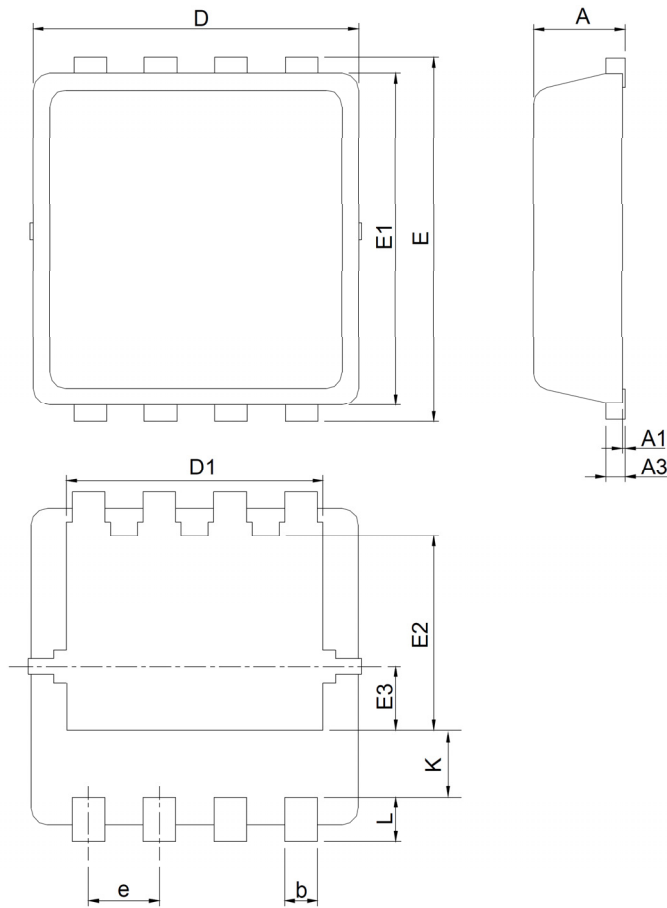


Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	40			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 40V, V_{GS} = 0V$			1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.8	2.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS} = 10V, I_D = 12A$		7.5	9	m Ω
		$V_{GS} = 4.5V, I_D = 9A$		11	14	m Ω
g_{FS}	Forward Transconductance	$V_{DS} = 5.0V, I_D = 12A$		25		S
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	$V_{GS} = 0V, I_S = 1.0A$			1.1	V
I_S	Maximum Body-Diode Continuous Current				35	A
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS} = 25V, V_{GS} = 0V$ $f = 1.0MHz$		1240		pF
C_{oss}	Output Capacitance			132		pF
C_{rss}	Reverse Transfer Capacitance			58		pF
Switching Characteristics						
Q_g	Total Gate Charge	$V_{DS} = 15V, I_D = 8A$ $V_{GS} = 4.5V$		20.2		nC
Q_{gs}	Gate-Source Charge			3.2		nC
Q_{gd}	Gate-Drain Charge			5.5		nC
$t_{D(ON)}$	Turn-On Delay Time	$V_{DD} = 15V, I_D = 1A$ $V_{GS} = 10V$ $R_{GEN} = 3.3\text{ ohm}$		13.5		ns
t_r	Turn-On Rise Time			2.5		ns
$t_{D(OFF)}$	Turn-Off Delay Time			78		ns
t_f	Turn-Off Fall Time			4		ns

- Repetitive rating, Pulse width limited by junction temperature $T_{J(MAX)}=150^\circ\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^\circ\text{C}$
- The power dissipation P_D is based on $T_{J(MAX)}=150^\circ\text{C}$, using $\leq 10s$ junction-to-ambient thermal resistance.
- The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The value in any given application depends on the user's specific board design.
- The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

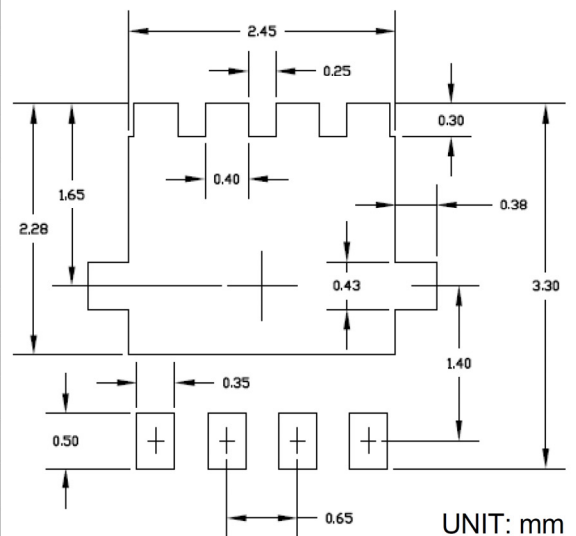


PDFN3x3-8L Package



SYMBOL	DFN3x3-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.80	1.00	0.031	0.039
A1	0.00	0.05	0.000	0.002
A3	0.10	0.25	0.004	0.010
b	0.24	0.35	0.009	0.014
D	2.90	3.10	0.114	0.122
D1	2.25	2.45	0.089	0.096
E	3.10	3.30	0.122	0.130
E1	2.90	3.10	0.114	0.122
E2	1.65	1.85	0.065	0.073
E3	0.56	0.58	0.022	0.023
e	0.65 BSC		0.026 BSC	
K	0.475	0.775	0.019	0.031
L	0.30	0.50	0.012	0.020

RECOMMENDED LAND PATTERN



单击下面可查看定价，库存，交付和生命周期等信息

[>>SiliconWisdom\(矽睿半导体\)](#)