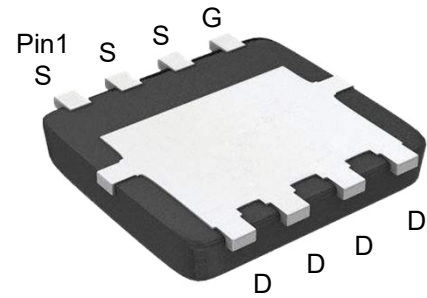
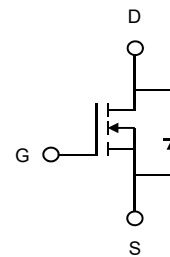
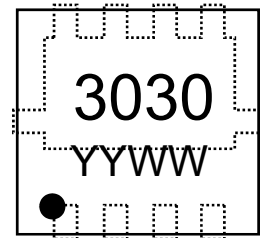


Description

The PNM8PN30V40 uses advanced trench technology to provide excellent $R_{DS(on)}$, low gate charge. This device is suitable for use as a load switch or in PWM applications..


Bottom View

Circuit Diagram

**Pin1
Marking (Top View)**

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
30	4.5 @ $V_{GS} = 10V$	40

Feature

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

Applications

- PWM applications
- Load switch
- Power management
- DC-DC Converters
- Wireless Chargers

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-source Voltage	V_{DS}	30	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	40	A
Pulsed Drain Current ¹⁾	I_{DM}	80	A
Total Power Dissipation ²⁾	P_D	3.1	W
Avalanche Energy, Single Pulse	E_{AS}	129.59	mJ
Thermal Resistance Junction-to-Ambient @ Steady State ²⁾	$R_{\theta JA}$	38	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	0.1	μA
On Characteristics ³⁾						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$	-	4.5	5.0	m Ω
		$V_{GS} = 4.5V, I_D = 10A$	-	5.5	7.0	
Dynamic Parameters ⁴⁾						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$	-	1965	-	pF
Output Capacitance	C_{oss}		-	202	-	
Reverse Transfer Capacitance	C_{rss}		-	157	-	
Switching Parameters ⁴⁾						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, R_L = 250\Omega, V_{GEN} = 4.5V, R_{GEN} = 6\Omega$	-	12	-	ns
Turn-on Rise Time	t_r		-	29	-	
Turn-Off Delay Time	$t_{d(off)}$		-	39	-	
Turn-Off Fall Time	t_f		-	22	-	
Total Gate Charge	Q_g	$V_{DS} = 15V, I_D = 10A, V_{GS} = 10V$	-	37.1	-	nC
Gate-Source Charge	Q_{gs}		-	3.7	-	
Gate-Drain Charge	Q_{gd}		-	6.1	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage ³⁾	V_{SD}	$V_{GS} = 0V, I_S = 0.2A$	-	0.8	1.2	V
Body Diode Reverse Recovery Time	T_{rr}	$I_F = 15A, V_R = 30V, di/dt = 200A/ms$	-	16.8	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F = 15A, V_R = 30V, di/dt = 200A/ms$	-	12.0	-	nC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production

Typical Characteristics

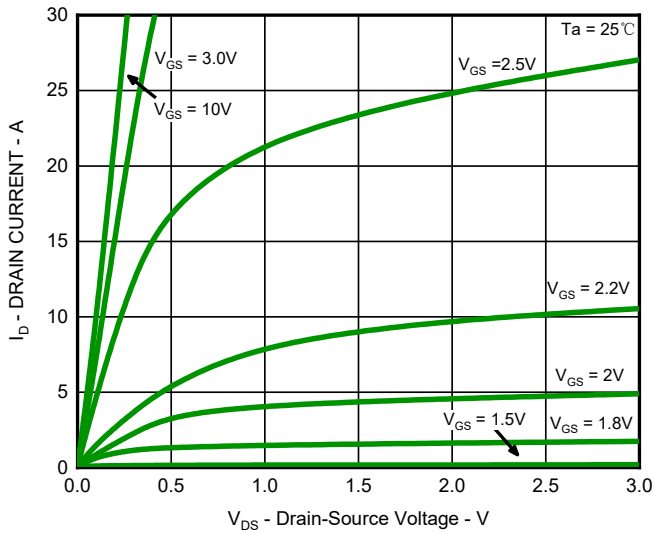


Fig.1 Output Characteristics

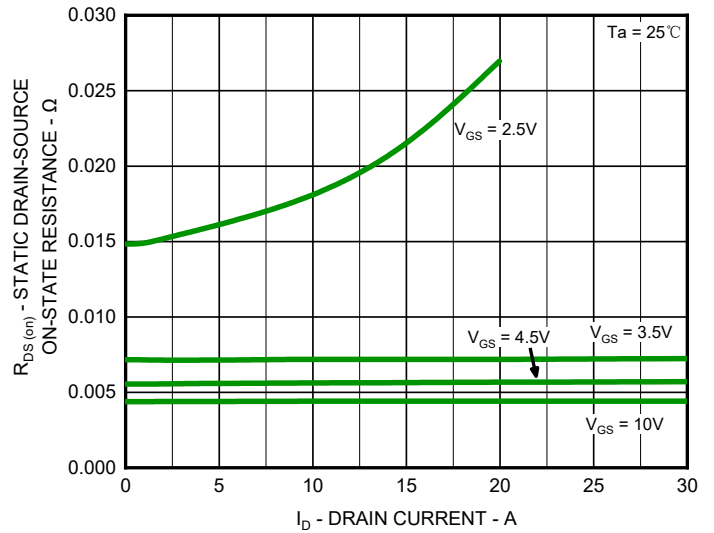


Fig.2 On-Resistance vs. Drain Current (I)

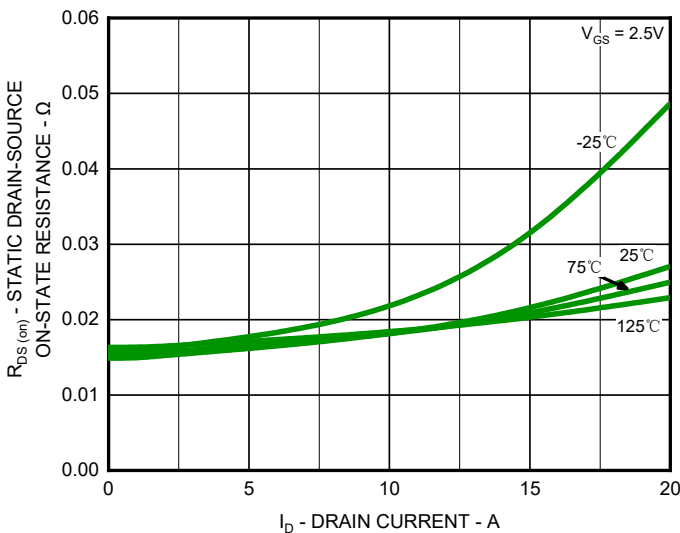


Fig.3 On-Resistance vs. Drain Current (II)

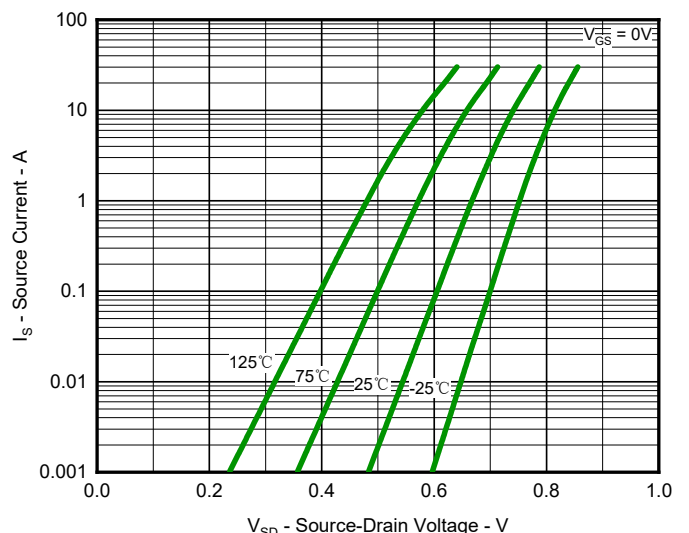


Fig.4 Diode Forward Voltage vs. Current

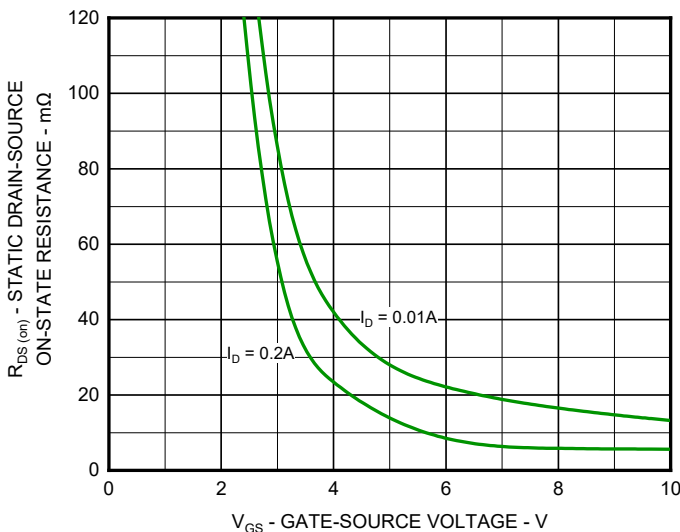


Fig.5 On-Resistance vs. Gate-Source Voltage

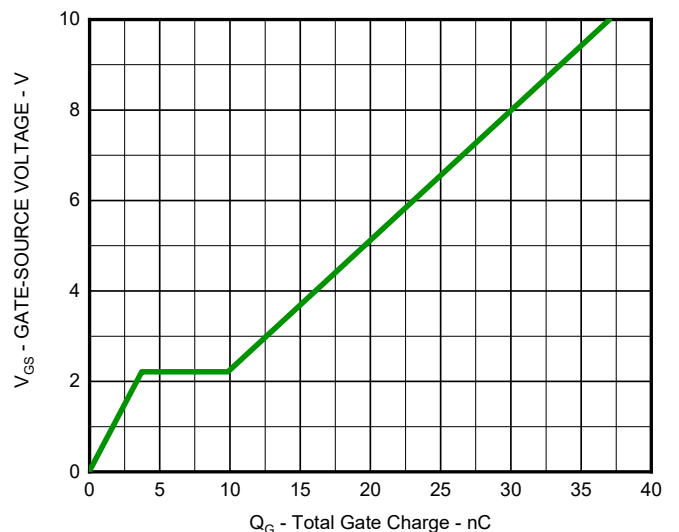


Fig.6 Gate Charge Characteristics

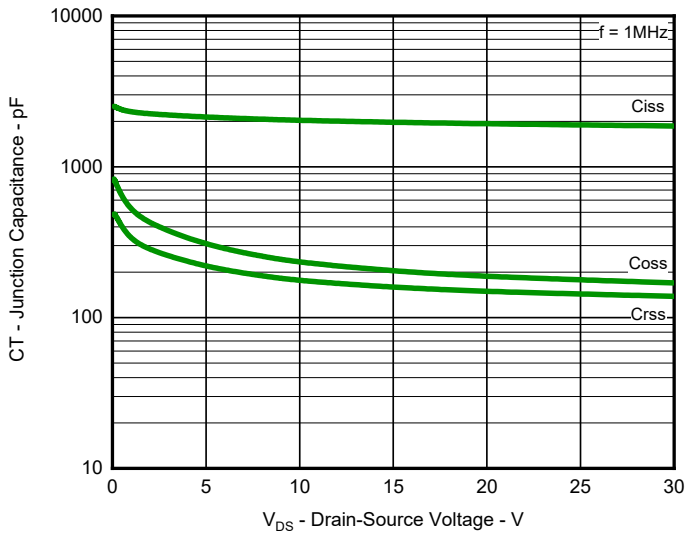


Fig.7 Typical Junction Capacitance

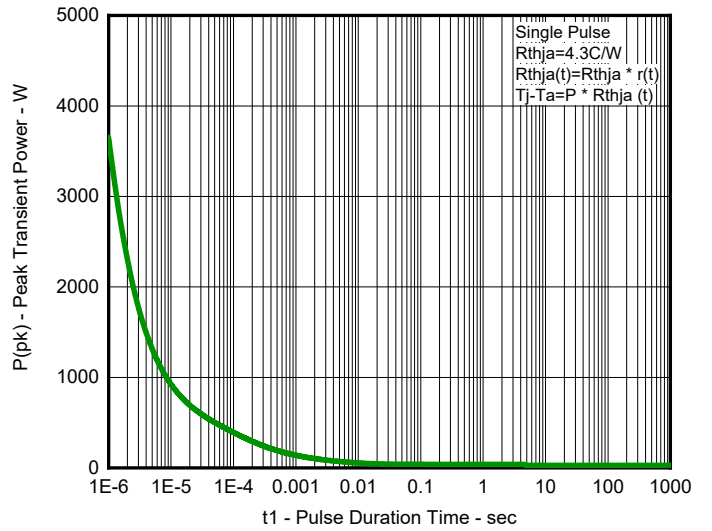


Fig.8 Single Pulse Maximum Power Dissipation

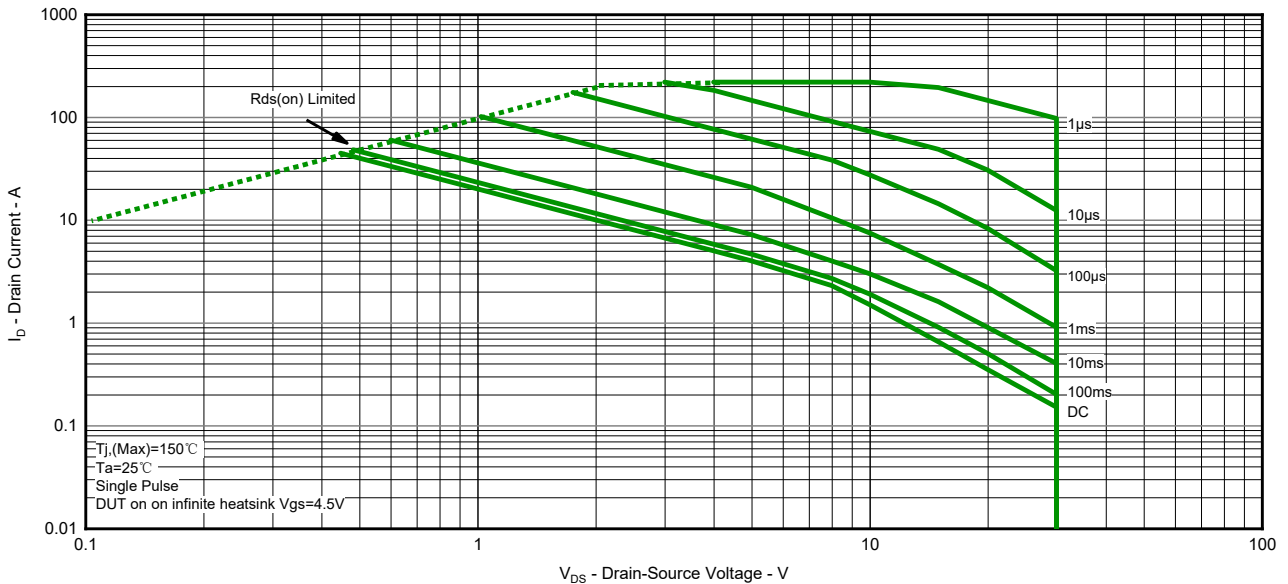
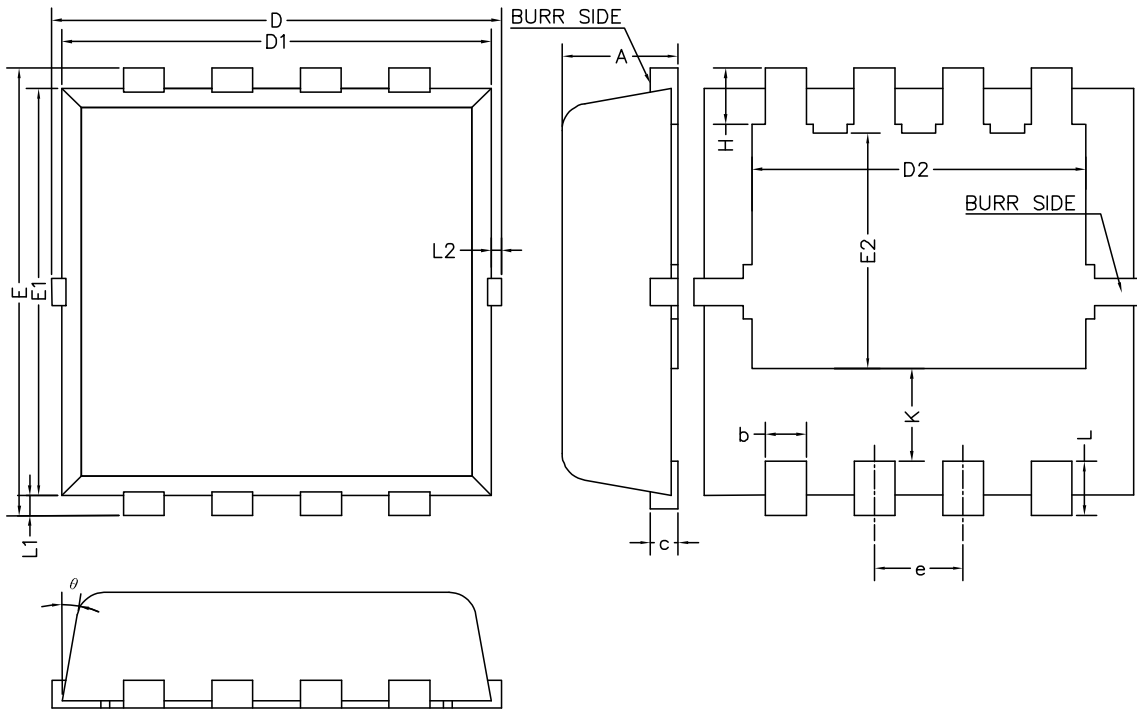


Fig.9 Safe Operation Area

Product dimension (DFN3333-8L)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.70	0.90	0.028	0.035
b	0.25	0.35	0.010	0.014
c	0.14	0.20	0.006	0.008
D	3.10	3.40	0.122	0.134
D1	3.05	3.25	0.120	0.128
D2	2.35	2.55	0.093	0.100
e	0.55	0.75	0.022	0.030
E	3.10	3.40	0.122	0.134
E1	2.90	3.10	0.114	0.122
E2	1.64	1.84	0.065	0.072
H	0.32	0.52	0.013	0.020
K	0.59	0.79	0.023	0.031
L	0.25	0.55	0.010	0.022
L1	0.10	0.20	0.004	0.008
L2	-	0.15	-	0.006
θ	8°	12°	8°	12°

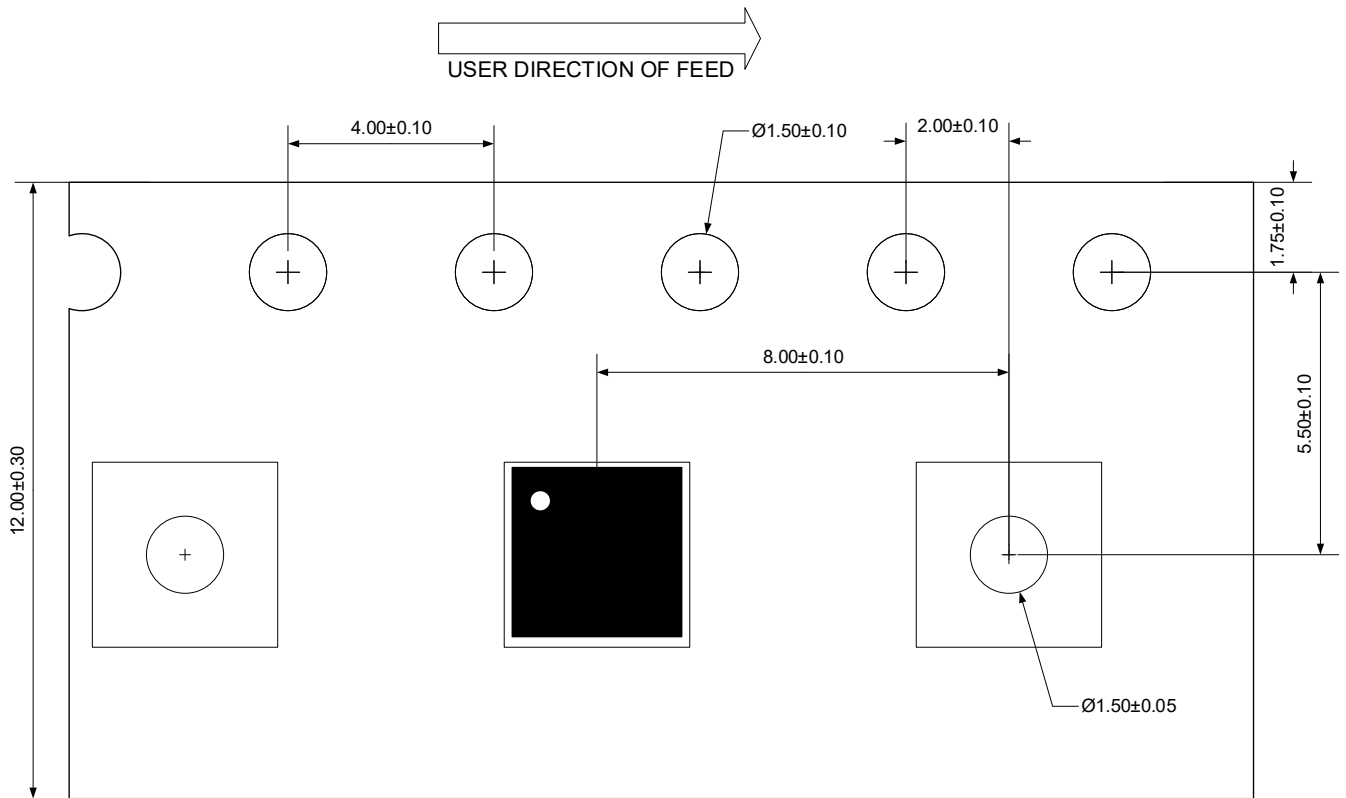
N-Channel MOSFET

PNM8PN30V40

Ordering information


Device	Package	Reel	Shipping
PNM8PN30V40	DFN3333-8L (Pb-Free)	13"	5000 / Tape & Reel

Load with information



Unit:mm


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