



# PJM80N30DL

## N-Channel Enhancement Mode Power MOSFET

### Product Summary

- $V_{DS} = 30V, I_D = 80A$
- $R_{DS(on)} < 4m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 6.2m\Omega @ V_{GS} = 4.5V$

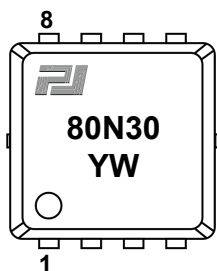
### Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

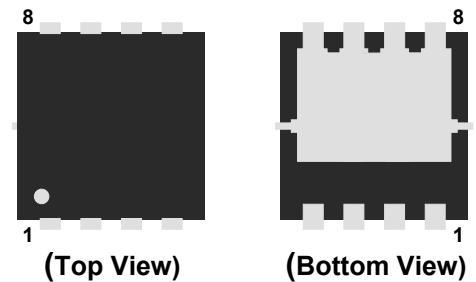
### Application

- Load Switching
- Battery Protection
- Uninterruptible Power Supply

### Marking Code

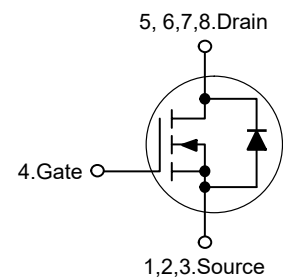


### PDFN3x3-8L



Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C case temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		$V_{DS}$	30	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$T_C = 25^\circ C$	$I_D$	80	A
	$T_C = 100^\circ C$		38	
Drain Current-Pulsed <sup>Note1</sup>		$I_{DM}$	240	A
Single Pulsed Avalanche Energy <sup>Note2</sup>		$E_{AS}$	121	mJ
Maximum Power Dissipation		$P_D$	39	W
Junction and Storage Temperature Range		$T_J, T_{STG}$	-55 to +150	$^\circ C$

### Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3.2	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient <sup>Note3</sup>	$R_{\theta JA}$	41	



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### Electrical Characteristics

( $T_C=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$	--	--	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	--	2.5	V
Drain-Source On-Resistance <sup>Note4</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=30A$	--	--	4	m $\Omega$
		$V_{GS}=4.5V, I_D=20A$	--	--	6.2	m $\Omega$
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$	--	3089	--	pF
Output Capacitance	$C_{oss}$		--	372	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	302	--	pF
Total Gate Charge	$Q_g$	$V_{DS}=15V, I_D=30A,$ $V_{GS}=10V$	--	58	--	nC
Gate-Source Charge	$Q_{gs}$		--	12	--	nC
Gate-Drain Charge	$Q_{gd}$		--	13	--	nC
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=15V, I_D=30A,$ $V_{GS}=10V, R_{GEN}=3\Omega$	--	11	--	nS
Turn-on Rise Time	$t_r$		--	29	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	47	--	nS
Turn-off Fall Time	$t_f$		--	18	--	nS
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=30A$	--	--	1.2	V
Diode Forward Current	$I_S$		--	--	80	A
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F = 30A, di/dt = 100A/\mu s$	--	16	--	ns
Body Diode Reverse Recovery Charge	$Q_{rr}$		--	7	--	nC

Note :

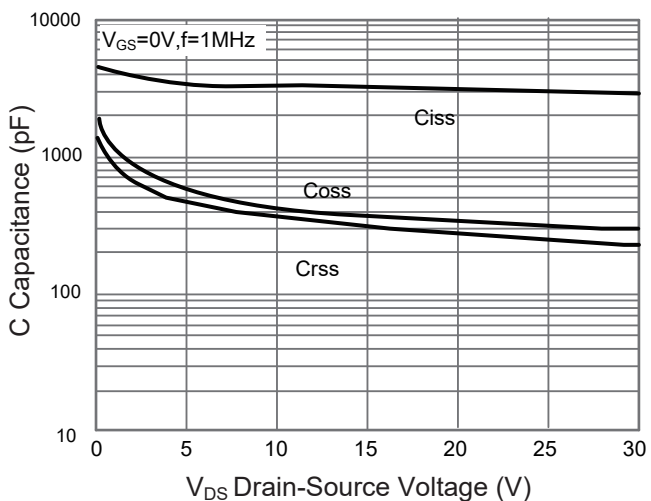
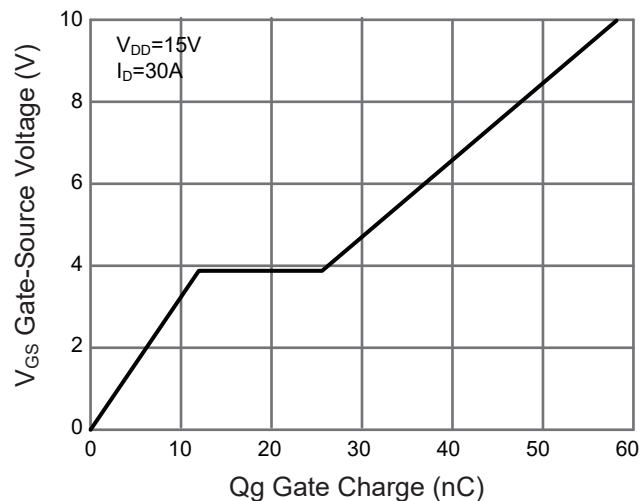
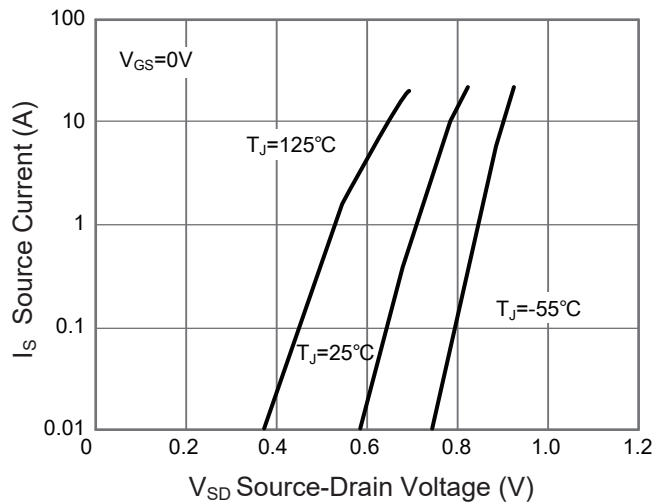
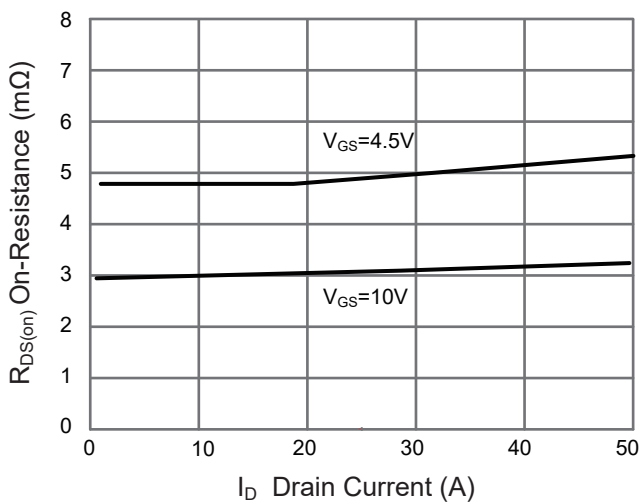
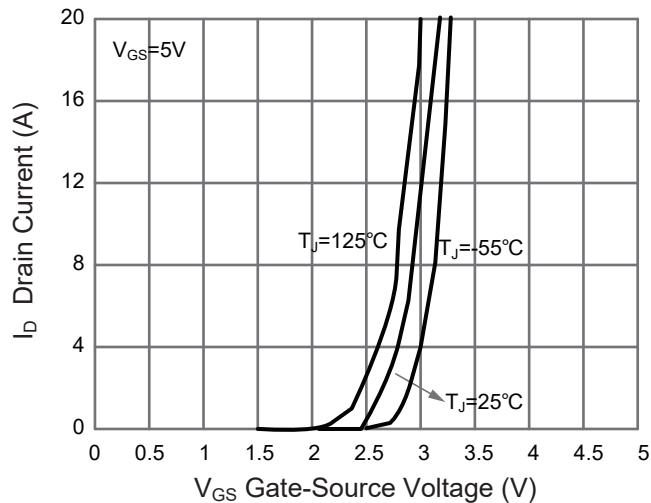
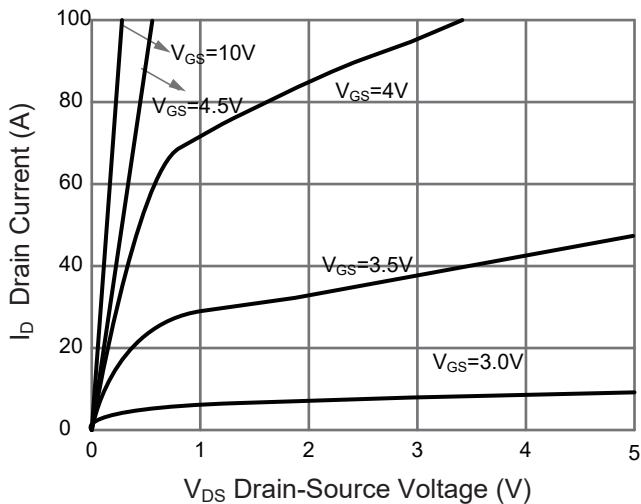
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2.  $E_{AS}$  condition: Starting  $T_J=25^\circ\text{C}$ ,  $V_{DD}=15V$ ,  $V_G=10V$ ,  $R_G=25\text{ohm}$ ,  $L=0.5\text{mH}$ ,  $I_{AS}=22A$ .
3. Surface mounted on a 1inch<sup>2</sup> pad of 2OZ copper FR4 PCB.
4. Pulse Test: Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 0.5\%$ .



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## N-Channel Enhancement Mode Power MOSFET

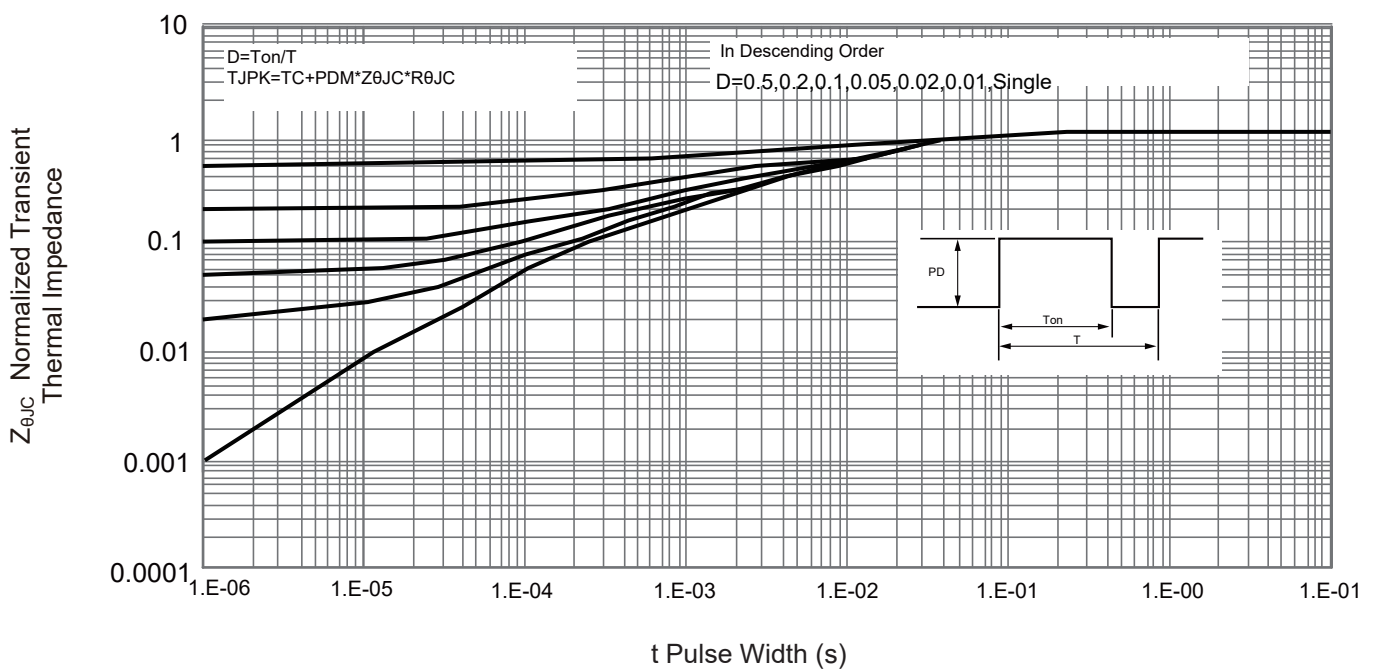
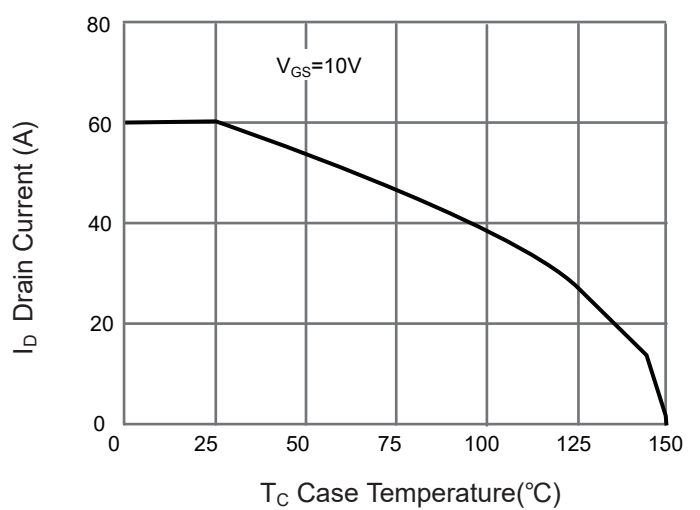
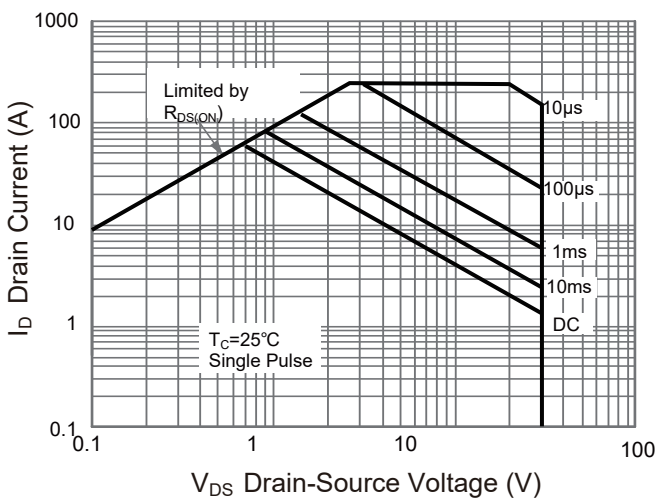
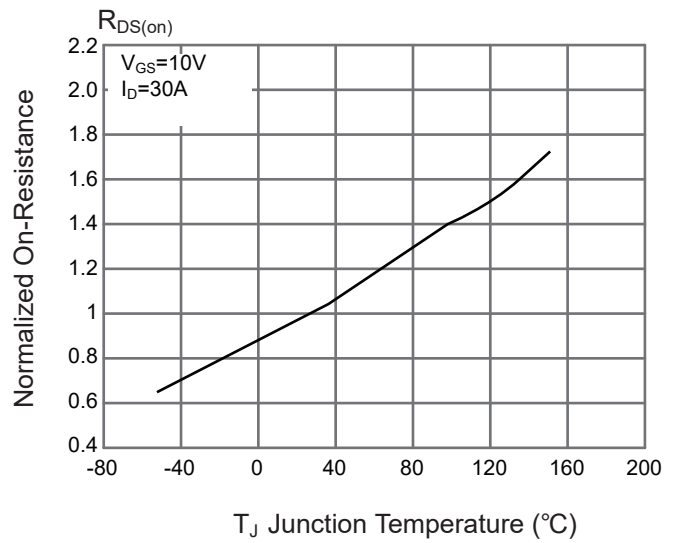
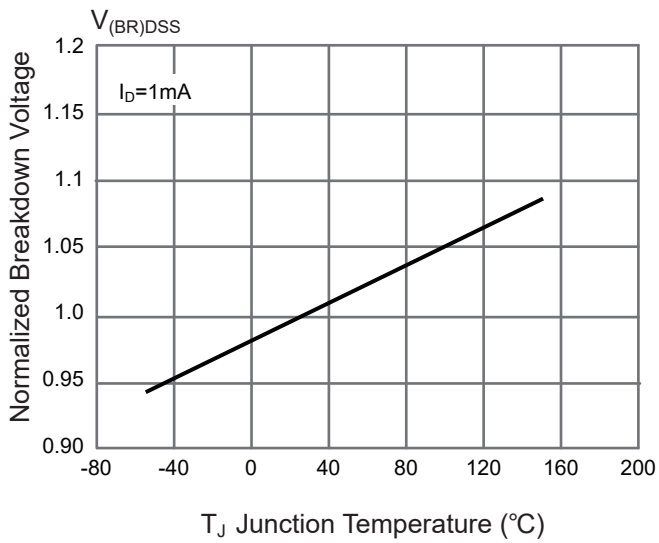
### Typical Characteristic Curves





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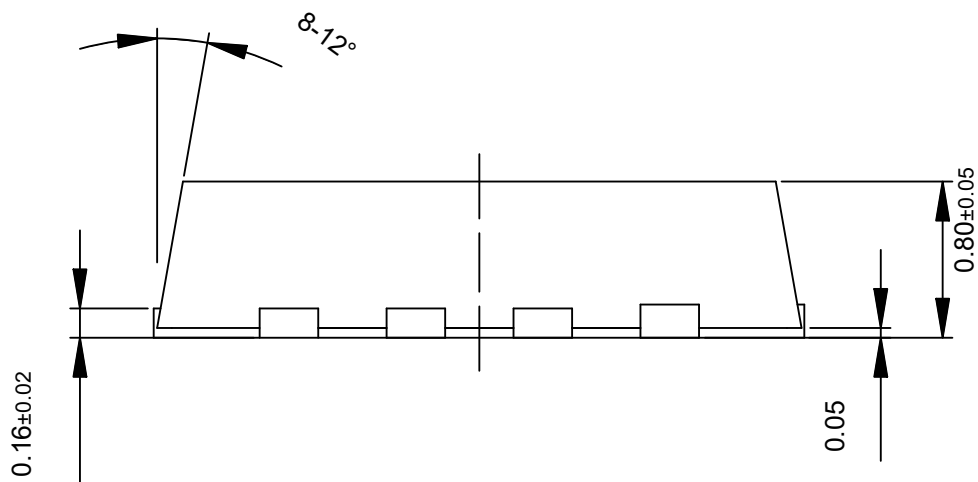
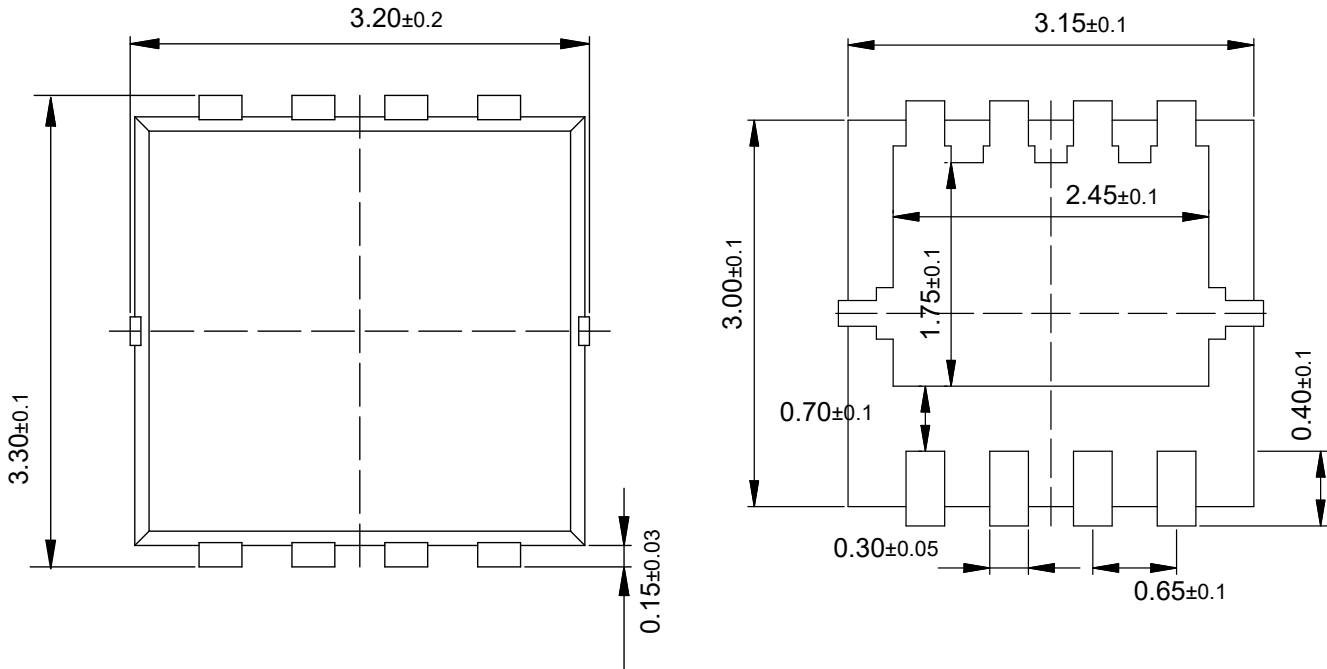
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## N-Channel Enhancement Mode Power MOSFET

### Package Outline

PDFN3x3-8L

Dimensions in mm



### Ordering Information

Device	Package	Shipping
PJM80N30DL	PDFN3x3-8L	5,000PCS/Reel&13inches