



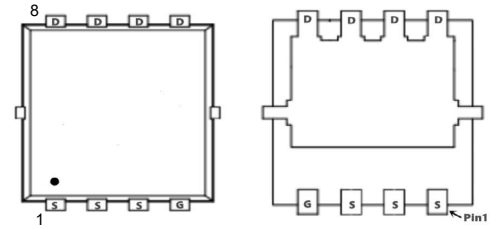
# PJM30N60DL

## N-Channel Enhancement Mode Power MOSFET

### Features

- Excellent  $R_{DS(ON)}$  and Low Gate Charge
- $V_{DS} = 60V, I_D = 30A$
- $R_{DS(on)} < 36m\Omega @ V_{GS} = 10V$

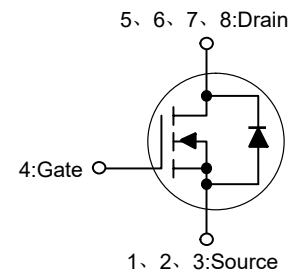
### PDFN3x3-8L



### Applications

- LED lamp
- Load Switch
- Uninterruptible power supply

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C junction temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous at $V_{GS} = 10V$ <small>Note1</small>	$I_D$	30	A
Drain Current-Pulsed <small>Note2</small>	$I_{DM}$	74	A
Single Pulse Avalanche Energy <small>Note3</small>	$E_{AS}$	22	mJ
Avalanche Current	$I_{AS}$	13	A
Maximum Power Dissipation <small>Note4</small>	$P_D$	31.3	W
Junction Temperature	$T_J$	175	°C
Storage Temperature Range	$T_{STG}$	-55 to +175	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <small>Note1</small>	$R_{\theta JA}$	62.5	°C/W
Maximum Junction-to-Case <small>Note1</small>	$R_{\theta JC}$	4	°C/W



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### Electrical Characteristics

(T<sub>J</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	60	65	--	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =48V, V <sub>GS</sub> =0V	--	--	1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	--	--	±100	nA
Gate Threshold Voltage <sup>Note2</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	1.6	2.5	V
Drain-Source On-Resistance <sup>Note2</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =15A	--	28	36	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =7A	--	38	45	mΩ
Forward Transconductance <sup>Note2</sup>	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =15A	--	25.3	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz	--	1027	--	pF
Output Capacitance	C <sub>oss</sub>		--	65	--	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		--	46	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =30V, I <sub>D</sub> =15A V <sub>GS</sub> =10V, R <sub>G</sub> =3.3Ω	--	2.8	--	nS
Turn-on Rise Time	t <sub>r</sub>		--	16.6	--	nS
Turn-off Delay Time	t <sub>d(off)</sub>		--	21.2	--	nS
Turn-off Fall Time	t <sub>f</sub>		--	5.6	--	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =48V, I <sub>D</sub> =15A, V <sub>GS</sub> =10V	--	19	--	nC
Gate-Source Charge	Q <sub>gs</sub>		--	2.5	--	nC
Gate-Drain Charge	Q <sub>gd</sub>		--	5	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>Note2</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =1A	--	--	1.2	V
Diode Forward Current <sup>Note1,5</sup>	I <sub>S</sub>		--	--	20	A

Note :

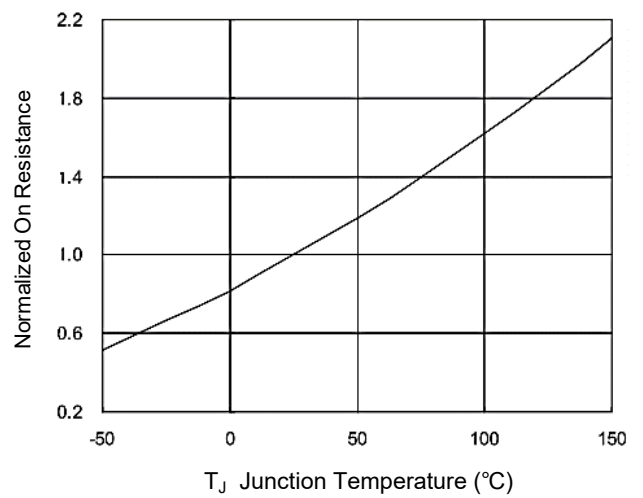
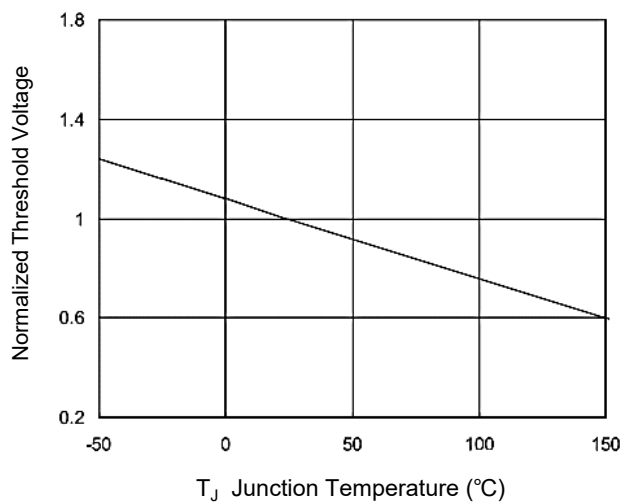
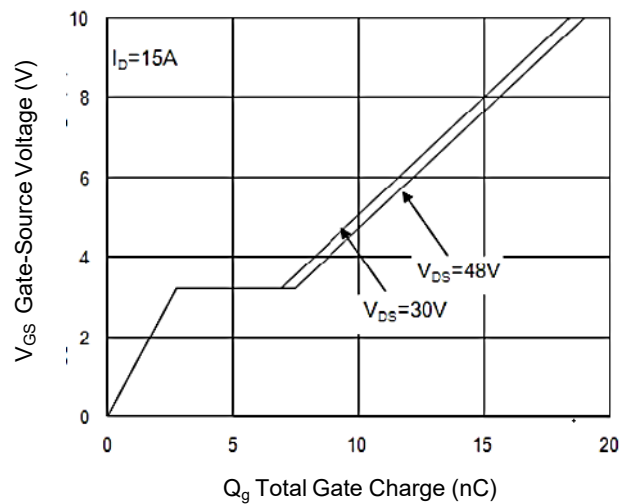
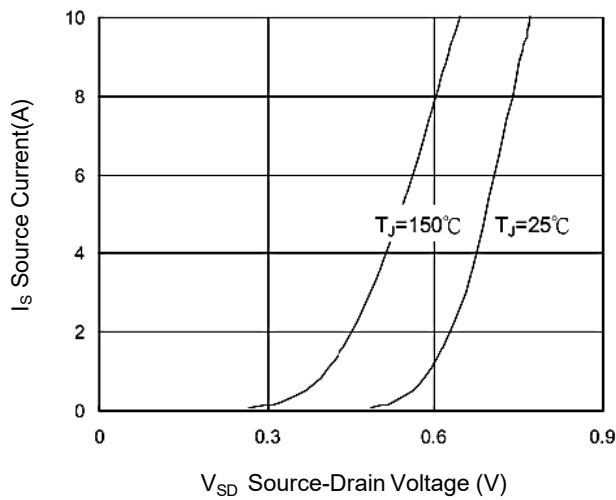
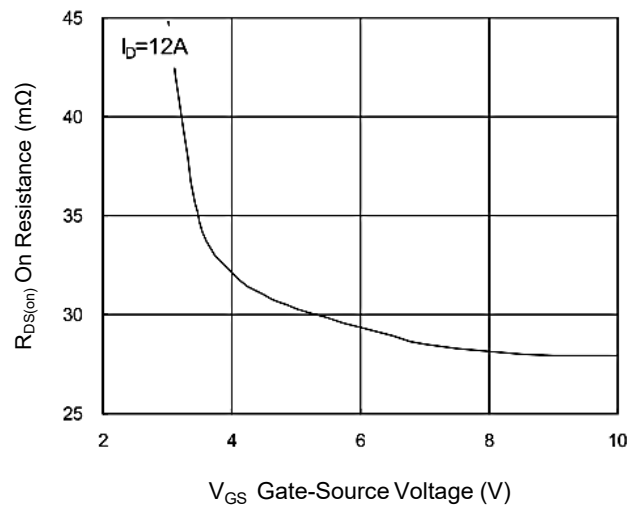
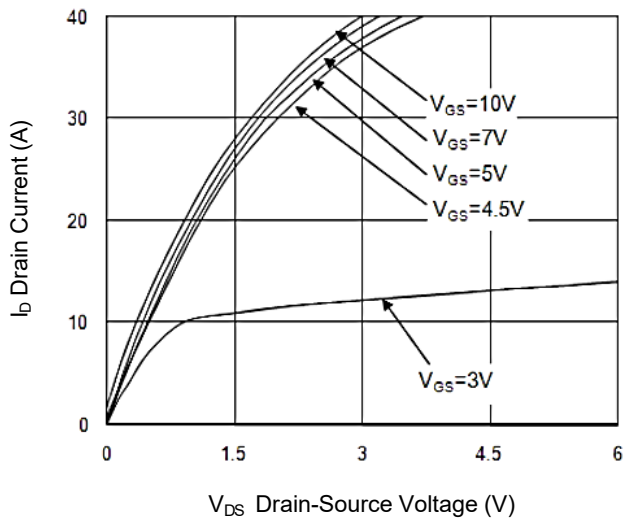
- 1.The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The E<sub>AS</sub> data shows Max. rating . The test condition is V<sub>DD</sub>=48V, V<sub>GS</sub>=10V, L=0.1mH, I<sub>AS</sub>=13A
- 4.The power dissipation is limited by 175°C junction temperature
- 5.The data is theoretically the same as I<sub>D</sub> and I<sub>DM</sub> , in real applications , should be limited by total power dissipation.



# PJM30N60DL

## N-Channel Enhancement Mode Power MOSFET

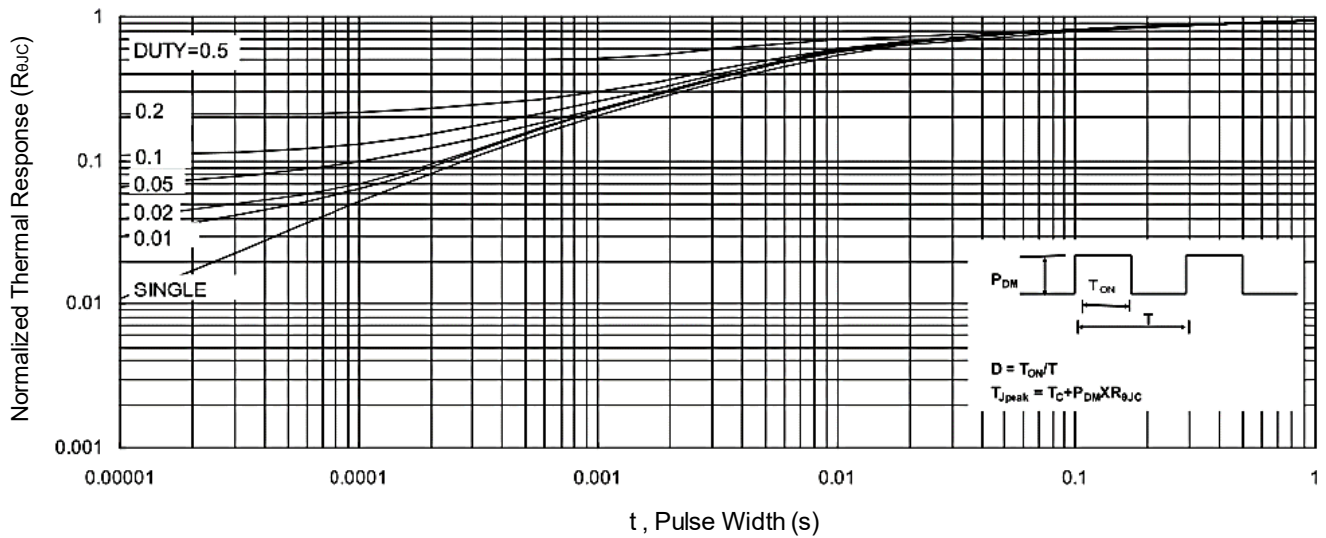
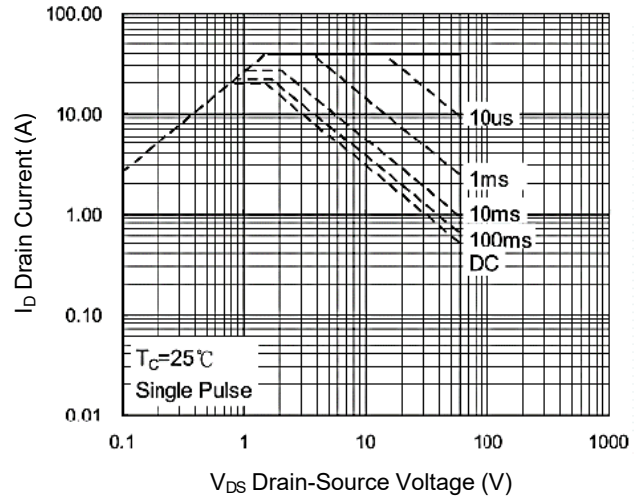
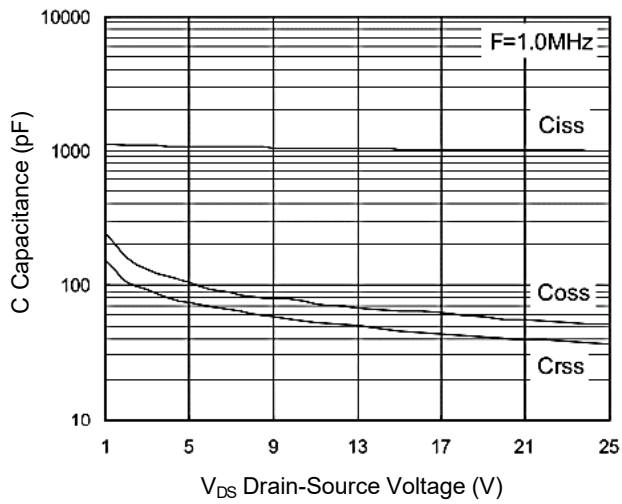
### Typical Characteristic Curves





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## N-Channel Enhancement Mode Power MOSFET





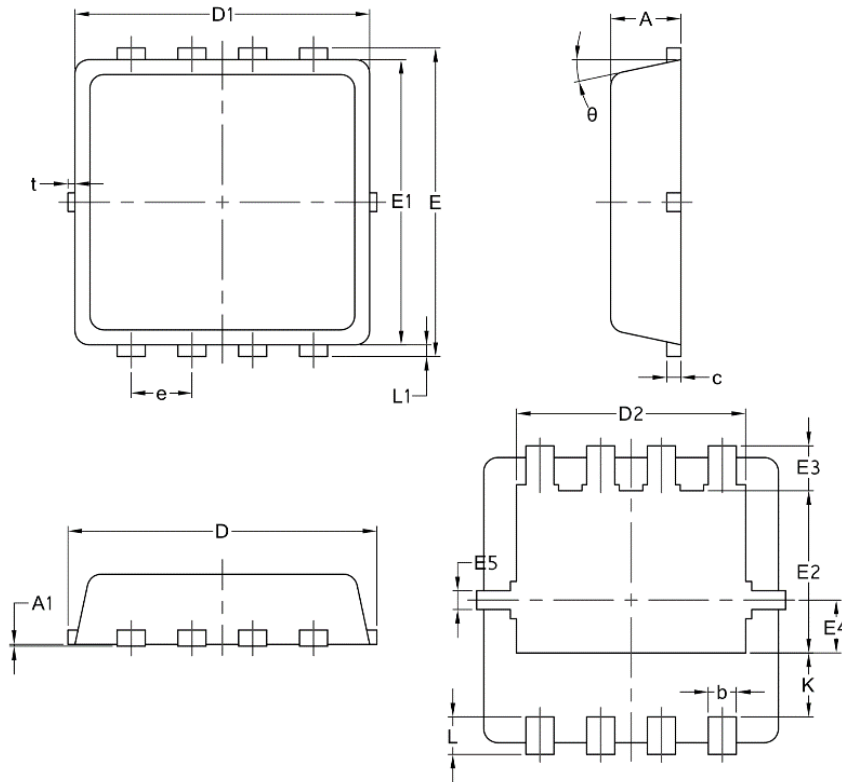
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## N-Channel Enhancement Mode Power MOSFET

### Package Outline

PDFN3x3-8L

Dimensions in mm



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
Φ	10	12	14