



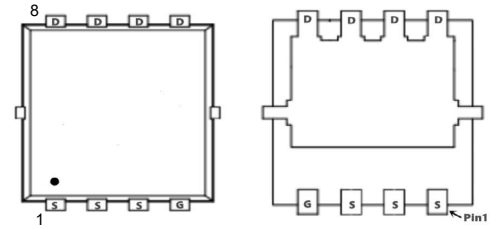
PJM50N60DL

N-Channel Enhancement Mode Power MOSFET

Features

- Excellent $R_{DS(ON)}$ and Low Gate Charge
- $V_{DS} = 60V, I_D = 50A$
 $R_{DS(on)} < 16m\Omega @ V_{GS} = 10V$

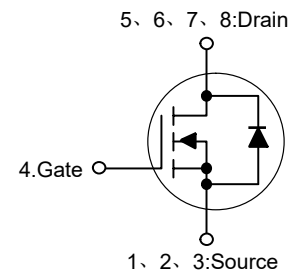
PDFN3x3-8L



Applications

- Battery protection
- Load Switch
- Uninterruptible power supply

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C Case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous at $V_{GS} = 10V$ <small>Note1</small>	I_D	50	A
Drain Current-Pulsed <small>Note2</small>	I_{DM}	90	A
Single Pulse Avalanche Energy <small>Note3</small>	E_{AS}	39.2	mJ
Avalanche Current	I_{AS}	38	A
Maximum Power Dissipation <small>Note4</small>	P_D	45	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <small>Note1</small>	$R_{\theta JA}$	62	°C/W
Maximum Junction-to-Case <small>Note1</small>	$R_{\theta JC}$	2.8	°C/W



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Electrical Characteristics

(T_J=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60	65	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note2}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.2	1.8	2.5	V
Drain-Source On-Resistance ^{Note2}	R _{DS(on)}	V _{GS} =10V, I _D =20A	--	11	16	mΩ
		V _{GS} =4.5V, I _D =10A	--	16	20	mΩ
Forward Transconductance ^{Note2}	g _{FS}	V _{DS} =5V, I _D =15A	--	45	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	2423	--	pF
Output Capacitance	C _{oss}		--	145	--	pF
Reverse Transfer Capacitance	C _{rss}		--	97	--	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, I _D =15A V _{GS} =10V, R _G =3.3Ω	--	7.2	--	nS
Turn-on Rise Time	t _r		--	50	--	nS
Turn-off Delay Time	t _{d(off)}		--	36.4	--	nS
Turn-off Fall Time	t _f		--	7.6	--	nS
Total Gate Charge	Q _g	V _{DS} =48V, I _D =15A, V _{GS} =4.5V	--	19.3	--	nC
Gate-Source Charge	Q _{gs}		--	7.1	--	nC
Gate-Drain Charge	Q _{gd}		--	7.6	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note2}	V _{SD}	V _{GS} =0V, I _S =1A	--	--	1	V
Diode Forward Current ^{Note1,5}	I _S		--	--	35	A

Note :

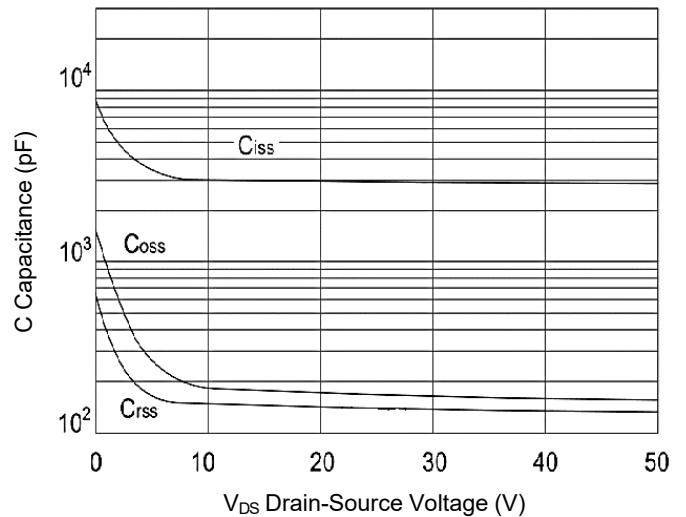
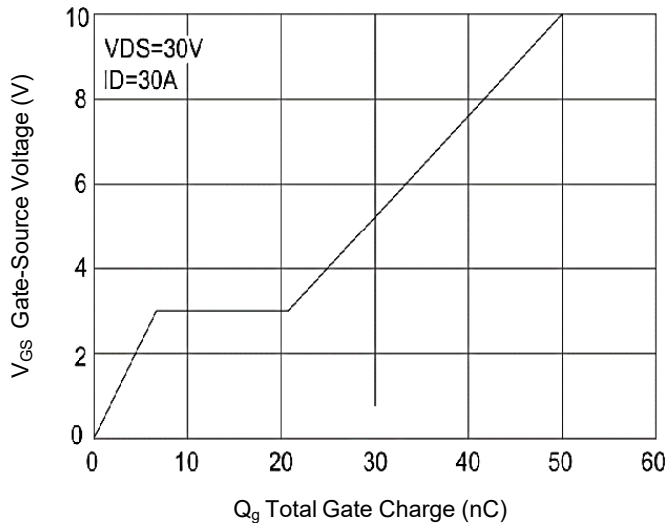
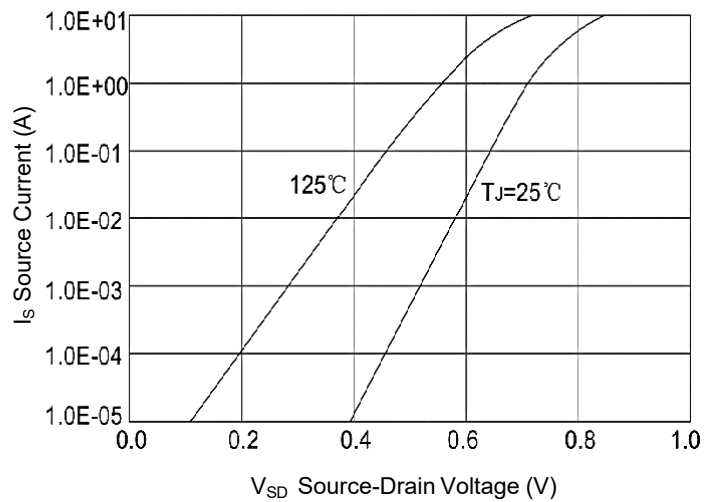
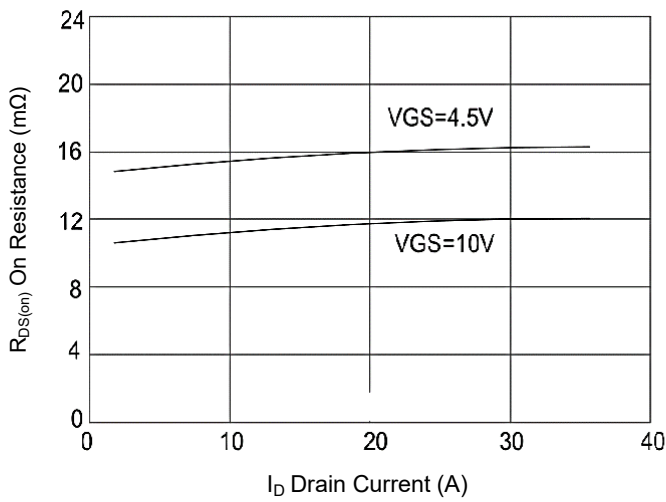
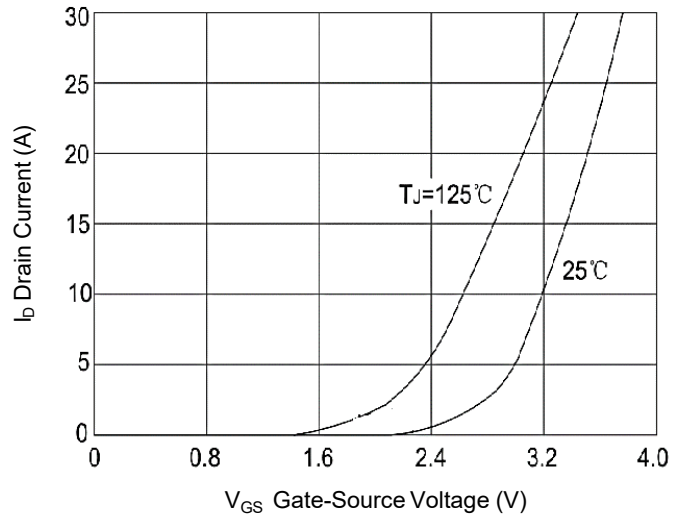
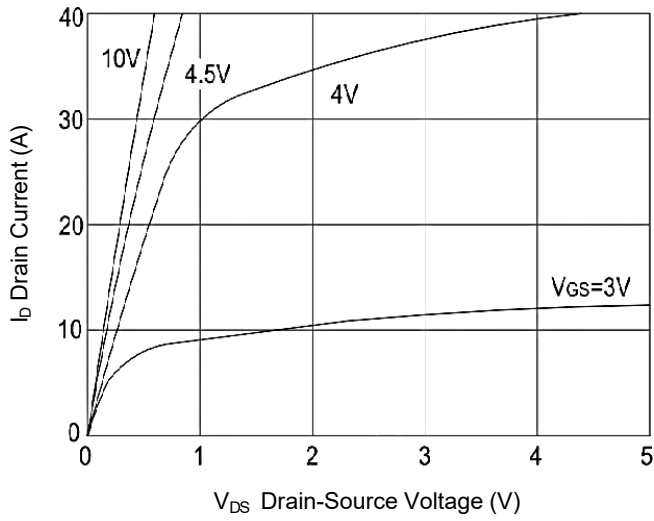
- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The E_{AS} data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.1mH, I_{AS}=38A
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.



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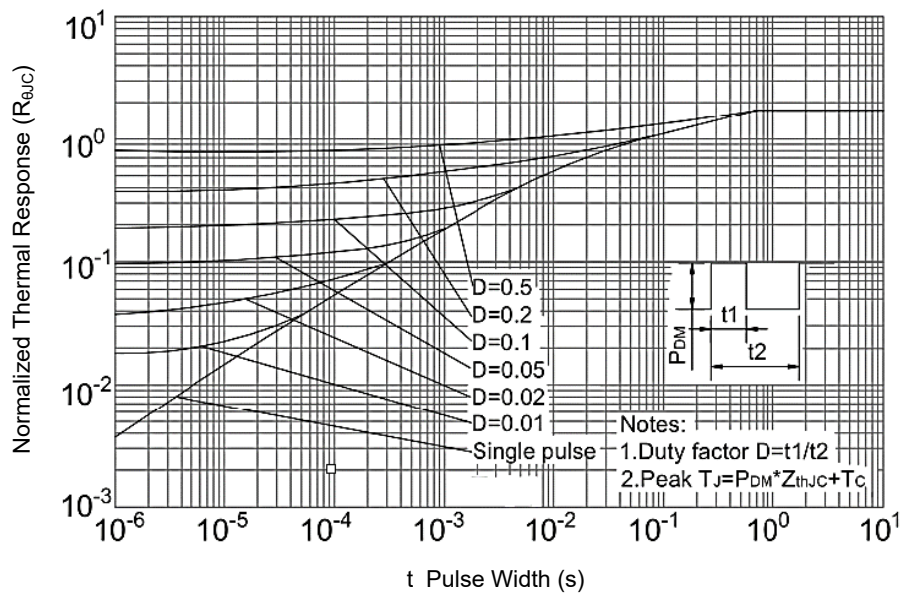
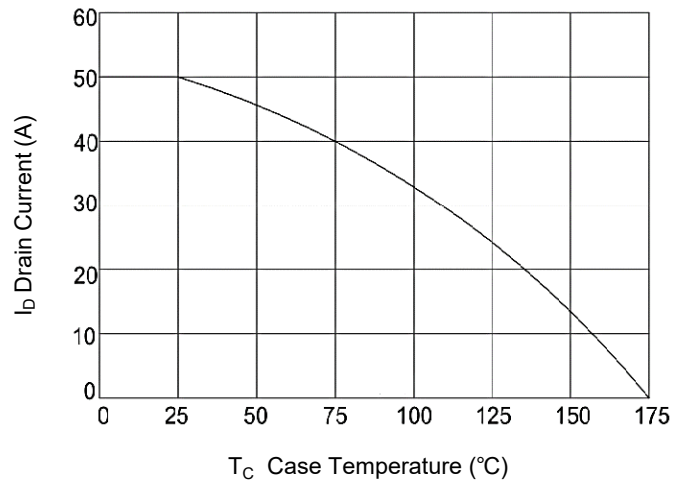
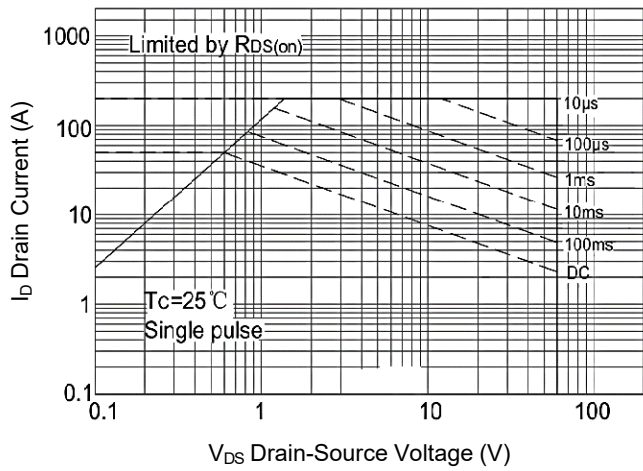
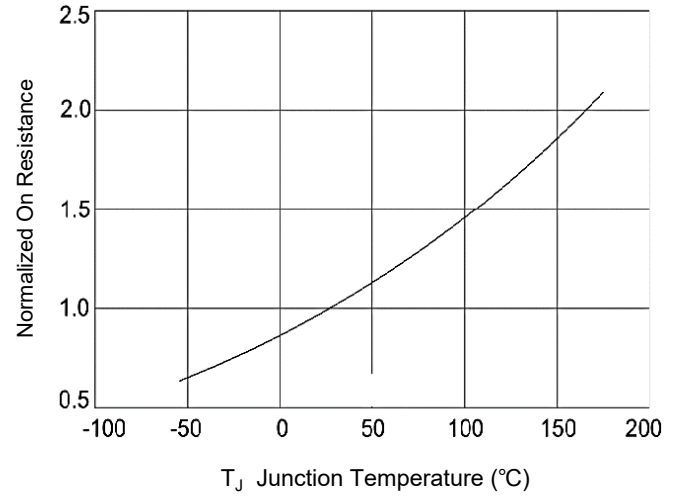
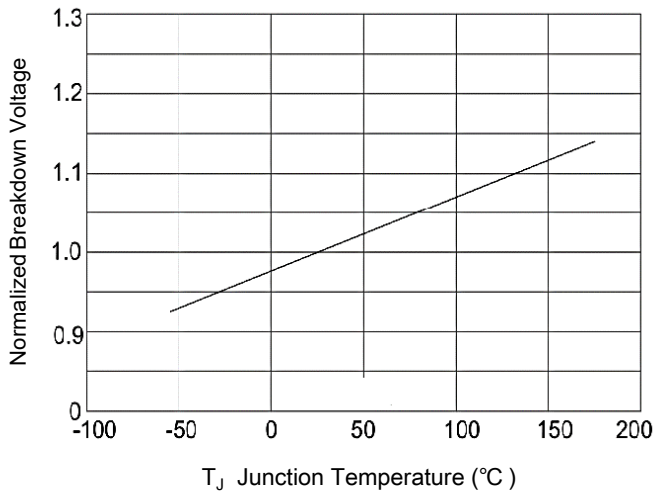
Typical Characteristic Curves





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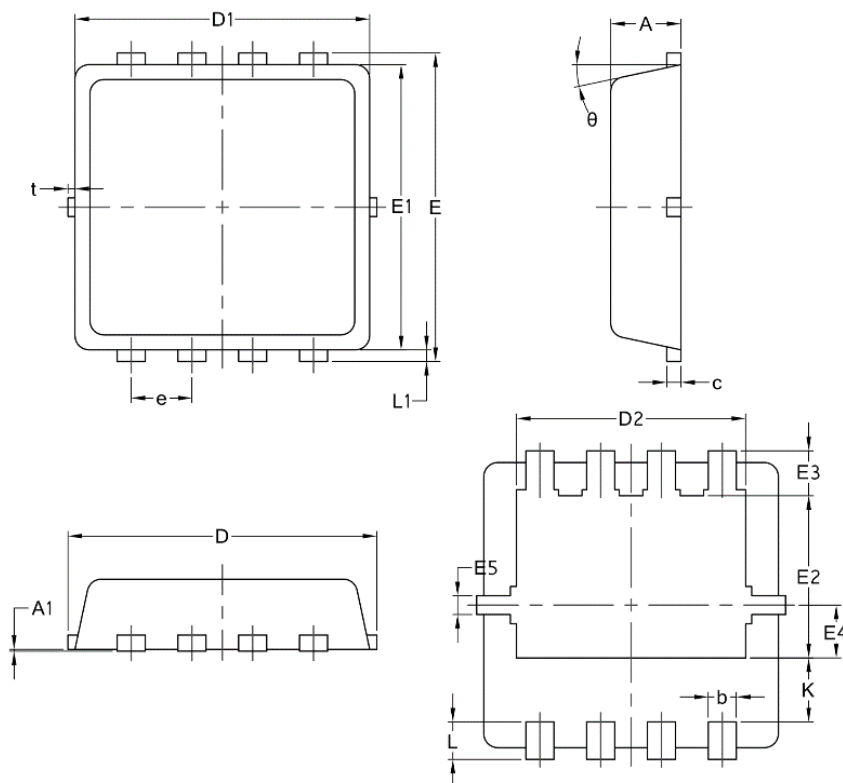
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Package Outline

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