PJM20DN30DL

Dual N-Channel Enhancement Mode Power MOSFET

Product Summary

- V_{DS}= 30V,I_D= 18A
- $R_{DS(on)}$< 13mΩ @V_{GS}= 10V
- $R_{DS(on)}$< 21mΩ @V_{GS}= 4.5V

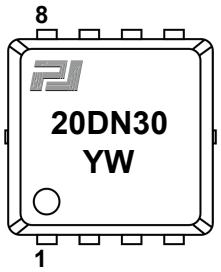
Features

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

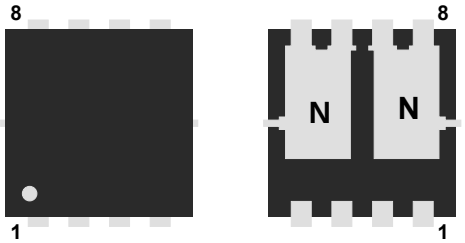
Application

- Load Switch
- Battery Protection
- Uninterruptible Power Supply

Marking Code

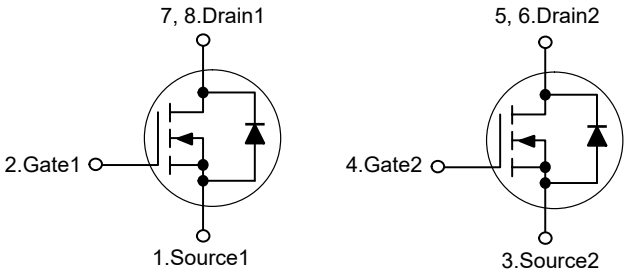


PDFN3x3A-8L



Pin	Description	Pin	Description
1	Source1	4	Gate2
2	Gate1	5,6	Drain2
3	Source2	7,8	Drain1

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25℃ case temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	T_C=25℃	I_D	18	A
	T_C=100℃		10	
Drain Current-Pulsed Note1		I_{DM}	60	A
Maximum Power Dissipation		P_D	5	W
Single Pulse Avalanche Energy Note2		E_{AS}	20	mJ
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55 to +150	℃

Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	25	°C/W

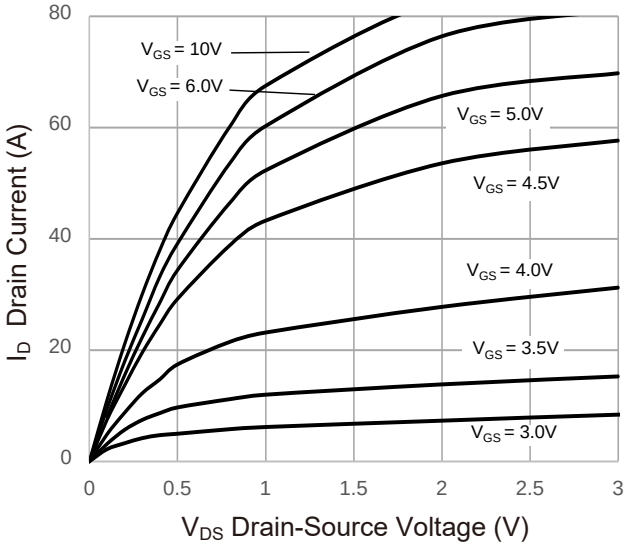
Electrical Characteristics

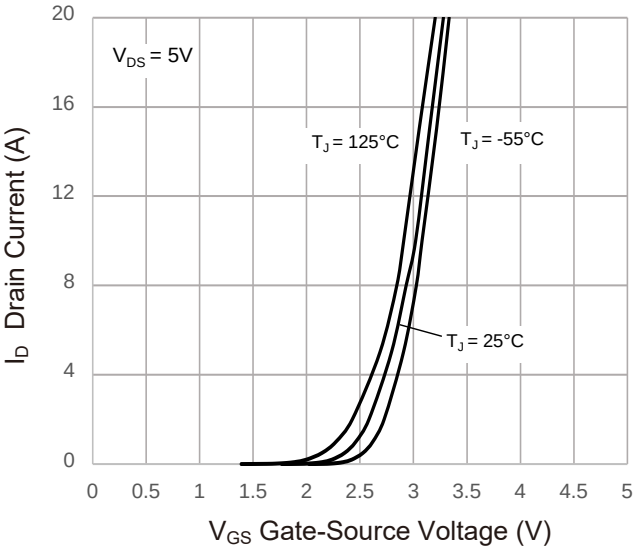
(T_C=25℃ unless otherwise specified)

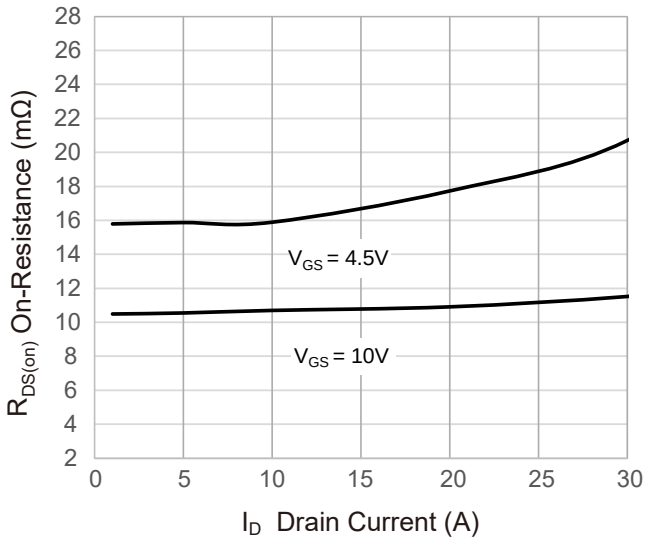
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note3	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	1.6	2.5	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=10V,I_D=8A	--	--	13	mΩ
		V_{GS}=4.5V,I_D=5A	--	--	21	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V,f=1MHz	--	805	--	pF
Output Capacitance	C_{oss}		--	103	--	pF
Reverse Transfer Capacitance	C_{rss}		--	82	--	pF
Total Gate Charge	Q_g	V_{DS}=15V,I_D=15A , V_{GS}=10V	--	16	--	nC
Gate-Source Charge	Q_{gs}		--	3.6	--	nC
Gate-Drain Charge	Q_{gd}		--	3.4	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=15A, V_{GS}=10V, R_{GEN}=3Ω	--	6	--	nS
Turn-on Rise Time	t_r		--	16	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	17	--	nS
Turn-off Fall Time	t_f		--	5	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	V_{SD}	V_{GS}=0V,I_S=10A	--	--	1.2	V
Diode Forward Current	I_S		--	--	18	A

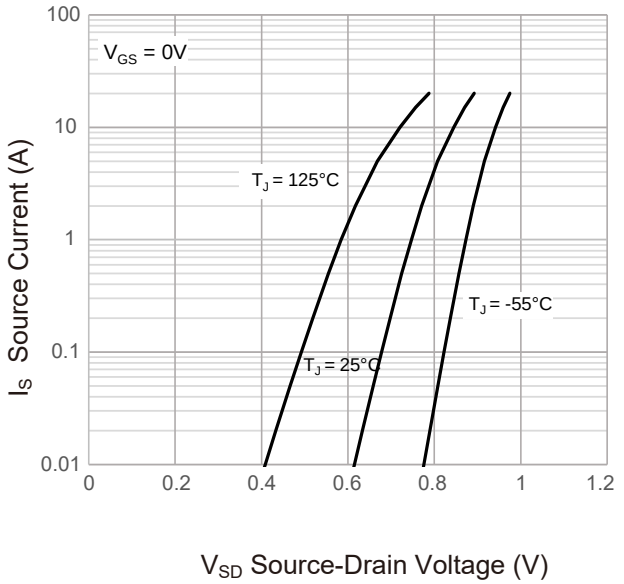
Note :
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS Condition: T_J=25℃, V_{DD}=15V,V_G=10V,L=0.5mH,R_G=25Ω,I_{AS}=9A.
3. The data tested by pulsed , pulse width≤ 300us , duty cycle ≤ 2%

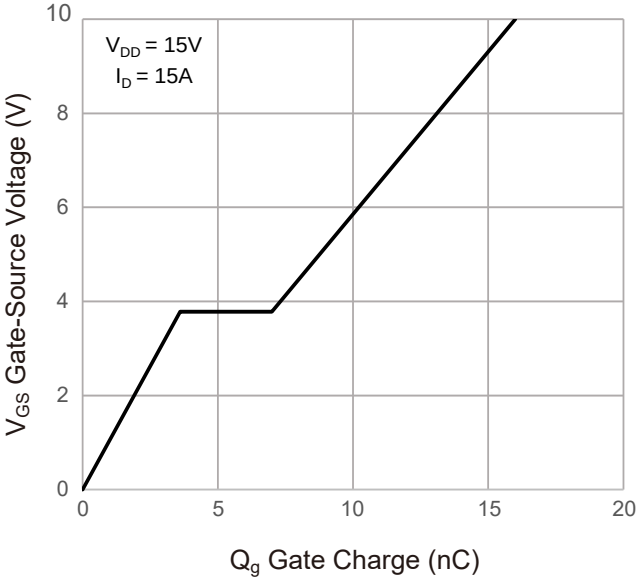
Typical Characteristic Curves

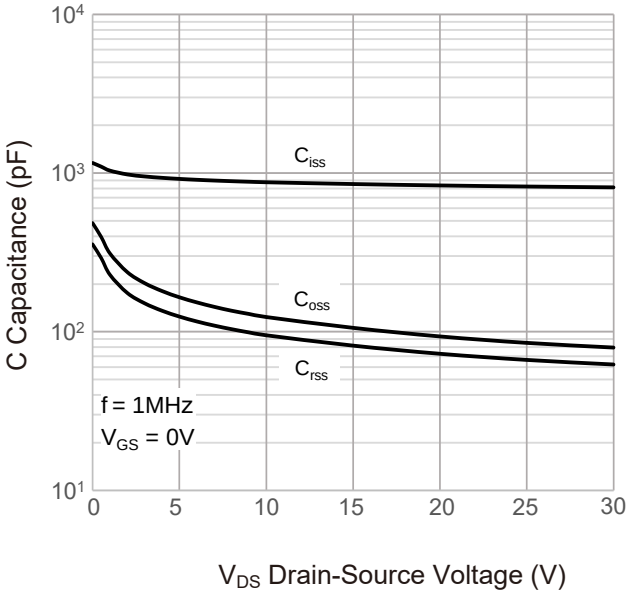


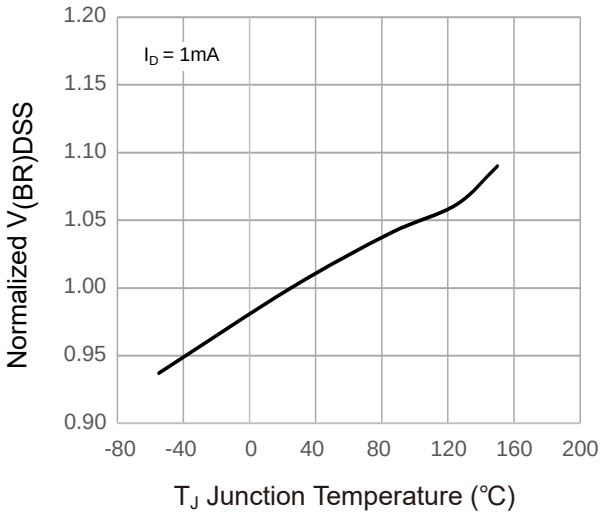


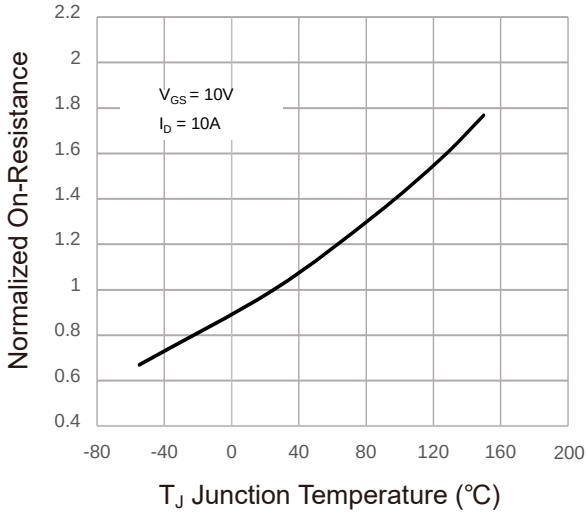


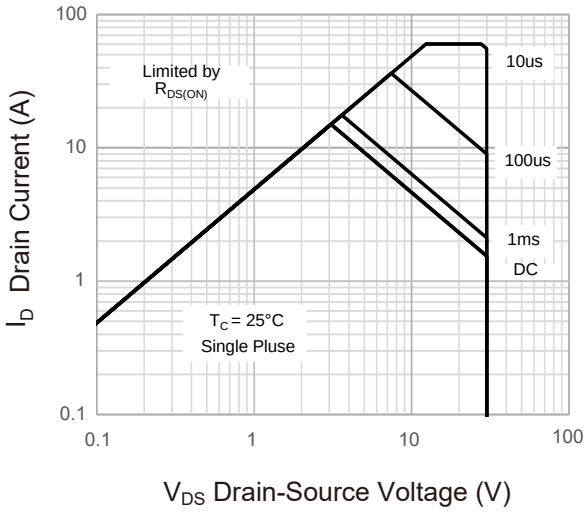







Normalized V(BR)DSS
1.20
1.15
1.10
1.05
1.00
0.95
0.90
I_D = 1mA
-80
-40
0
40
80
120
160
200
T_J Junction Temperature (℃)

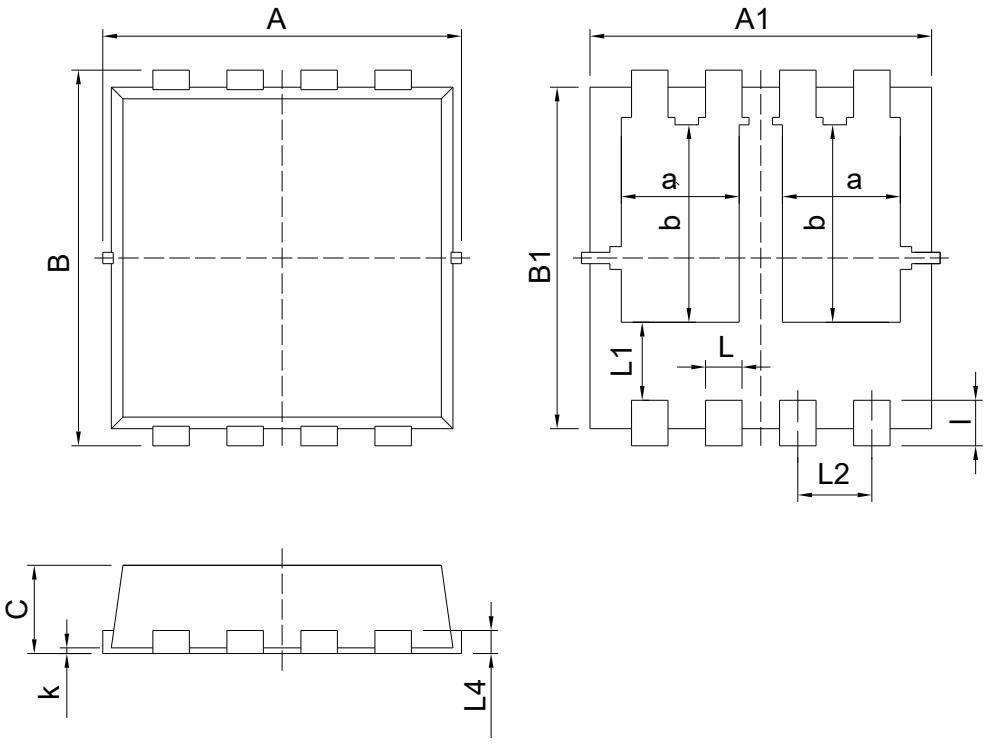

Normalized On-Resistance
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
V_{GS} = 10V
I_D = 10A
-80
-40
0
40
80
120
160
200
T_J Junction Temperature (℃)


I_D Drain Current (A)
100
10
1
0.1
Limited by
$R_{DS(ON)}$
10us
100us
1ms
DC
T_C = 25°C
Single Pluse
0.1
1
10
100
V_{DS} Drain-Source Voltage (V)

Package Outline

PDFN3x3A-8L

Dimensions in mm



Symbol	Dimensions		Symbol	Dimensions	
	Min.	Max.		Min.	Max.
A	3.2	3.4	L2	0.55	0.75
A1	3.1	3.2	L4	0.14	0.20
B	3.2	3.4	a	0.935	1.135
B1	2.95	3.05	b	1.635	1.835
C	0.75	0.85	k	0.0	0.05
L	0.25	0.35	l	0.3	0.5
L1	-	0.75			