



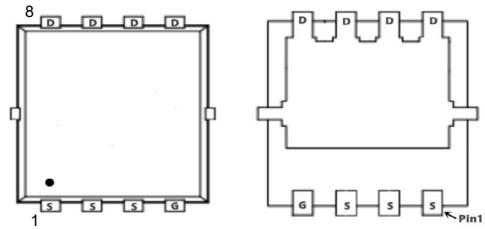
PJM80N60DN

N-Channel Enhancement Mode Power MOSFET

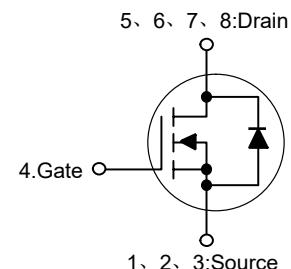
Features

- Excellent $R_{DS(ON)}$ and Low Gate Charge
- $V_{DS} = 60V, I_D = 80A$
- $R_{DS(on)} < 6.0m\Omega$ @ $V_{GS} = 10V$

PDFN5x6-8L



Schematic Diagram



Applications

- Battery protection
- Load Switch
- Uninterruptible power supply

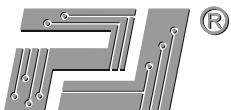
Absolute Maximum Ratings

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}	± 20	V
Drain Current-Continuous ^{Note1}	I_D	80	A
Drain Current-Pulsed ^{Note2}	I_{DM}	210	A
Single Pulse Avalanche Energy ^{Note3}	E_{AS}	66	mJ
Maximum Power Dissipation	P_D	87	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note4}	$R_{\theta JA}$	62	°C/W
Maximum Junction-to-Case	$R_{\theta JC}$	1.44	°C/W



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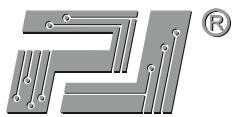
Electrical Characteristics

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}}=0\text{V}, I_D=250\mu\text{A}$	60	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=60\text{V}, V_{\text{GS}}=0\text{V}$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{V}$	--	--	± 100	nA
Gate Threshold Voltage	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}}=V_{\text{GS}}, I_D=250\mu\text{A}$	1.0	--	2.5	V
Drain-Source On-Resistance	$R_{\text{DS}(\text{on})}$	$V_{\text{GS}}=10\text{V}, I_D=20\text{A}$	--	4.7	6	$\text{m}\Omega$
		$V_{\text{GS}}=4.5\text{V}, I_D=10\text{A}$	--	6.4	10	$\text{m}\Omega$
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{\text{DS}}=50\text{V}, V_{\text{GS}}=0\text{V}, f=100\text{KHz}$	--	2136	--	pF
Output Capacitance	C_{oss}		--	331.5	--	pF
Reverse Transfer Capacitance	C_{rss}		--	10.6	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{\text{d}(\text{on})}$	$V_{\text{DS}}=50\text{V}, I_D=25\text{A}$ $V_{\text{GS}}=10\text{V}, R_G=2\Omega$	--	22.9	--	nS
Turn-on Rise Time	t_r		--	6.5	--	nS
Turn-off Delay Time	$t_{\text{d}(\text{off})}$		--	45.7	--	nS
Turn-off Fall Time	t_f		--	20.4	--	nS
Total Gate Charge	Q_g	$V_{\text{DS}}=50\text{V}, I_D=25\text{A}, V_{\text{GS}}=10\text{V}$	--	30	--	nC
Gate-Source Charge	Q_{gs}		--	5.8	--	nC
Gate-Drain Charge	Q_{gd}		--	6.1	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{\text{GS}}=0\text{V}, I_s=80\text{A}$	--	--	1.3	V
Diode Forward Current	I_s		--	--	80	A

Note :

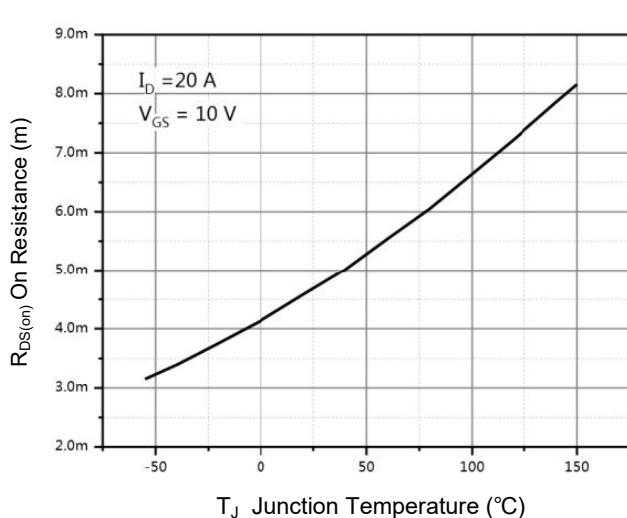
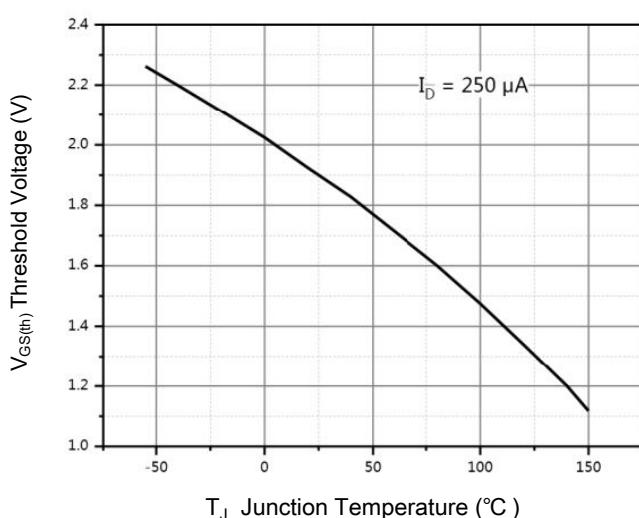
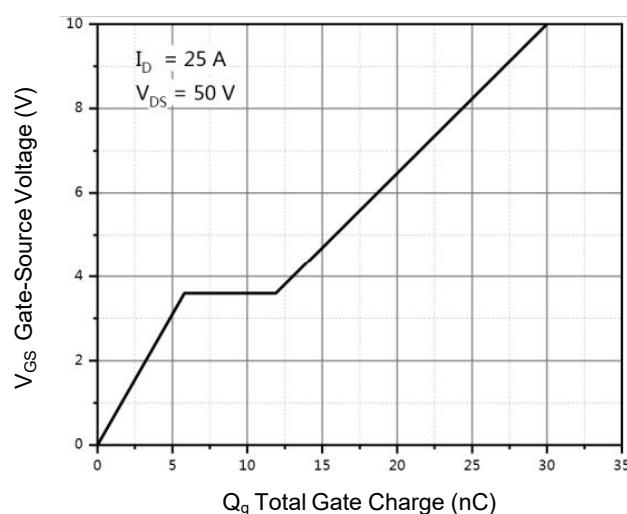
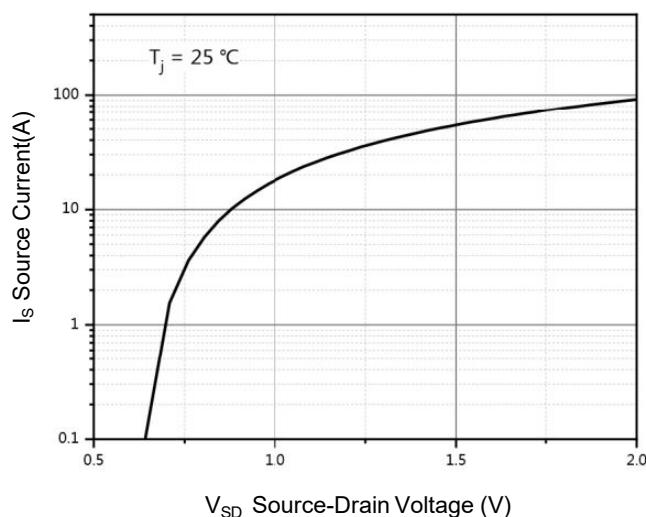
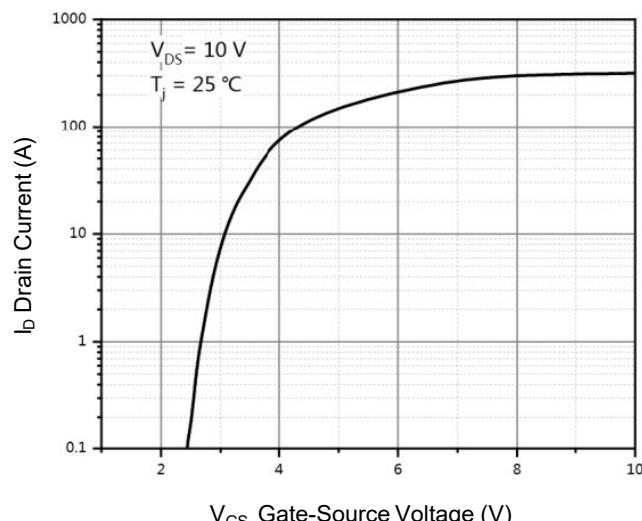
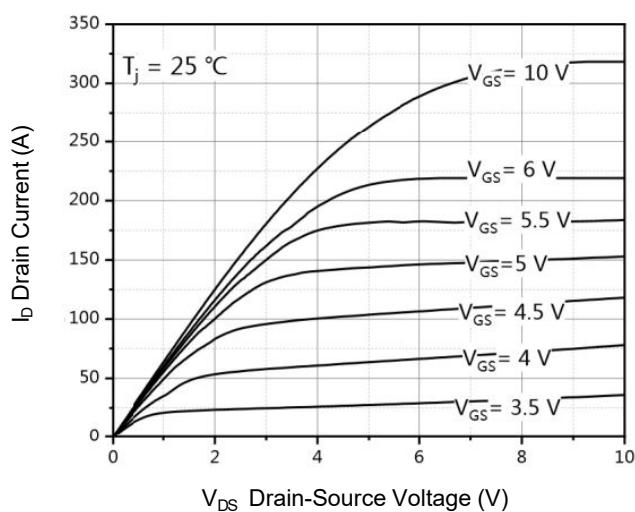
- 1.Calculated continuous current based on maximum allowable junction temperature.
- 2.Repetitive rating; pulse width limited by max. junction temperature.
- 3.d is based on max. junction temperature, using junction-case thermal resistance.
4. $V_{\text{DD}}=30\text{V}, R_G=25\Omega, L=0.3\text{mH}$, starting $T_j=25^\circ\text{C}$.
- 5.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a=25^\circ\text{C}$.



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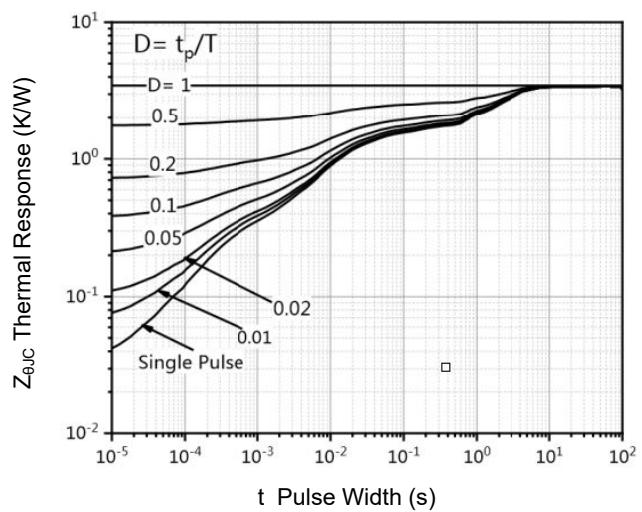
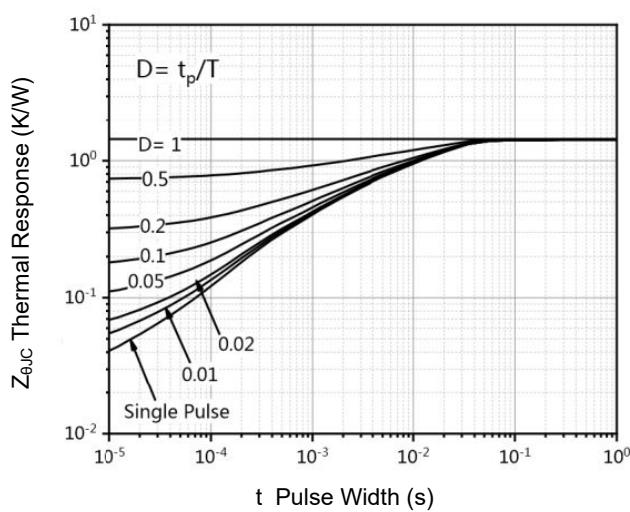
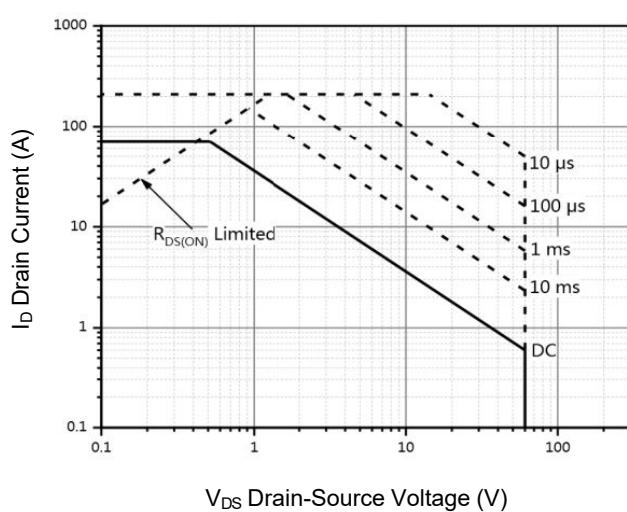
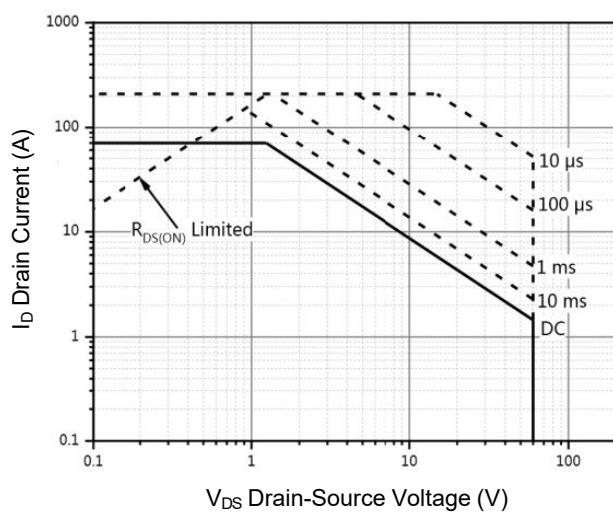
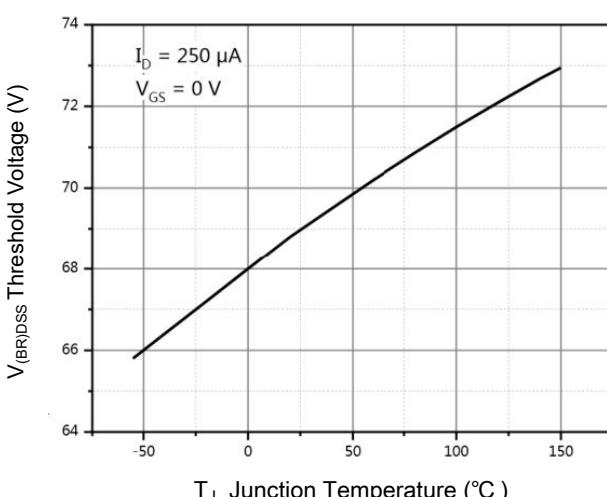
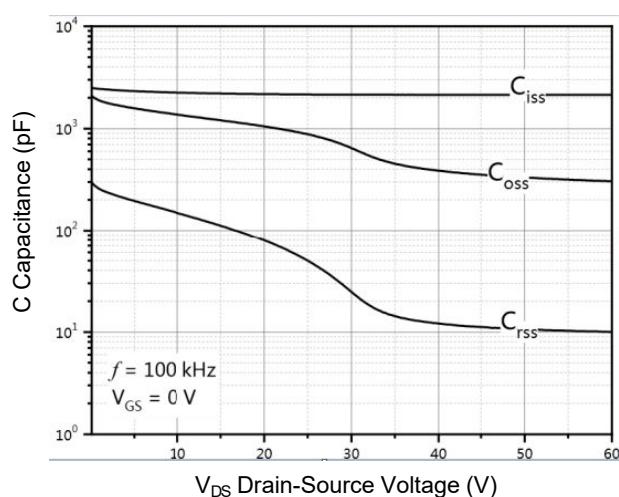
Typical Characteristic Curves

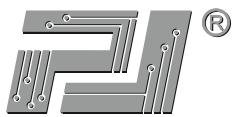




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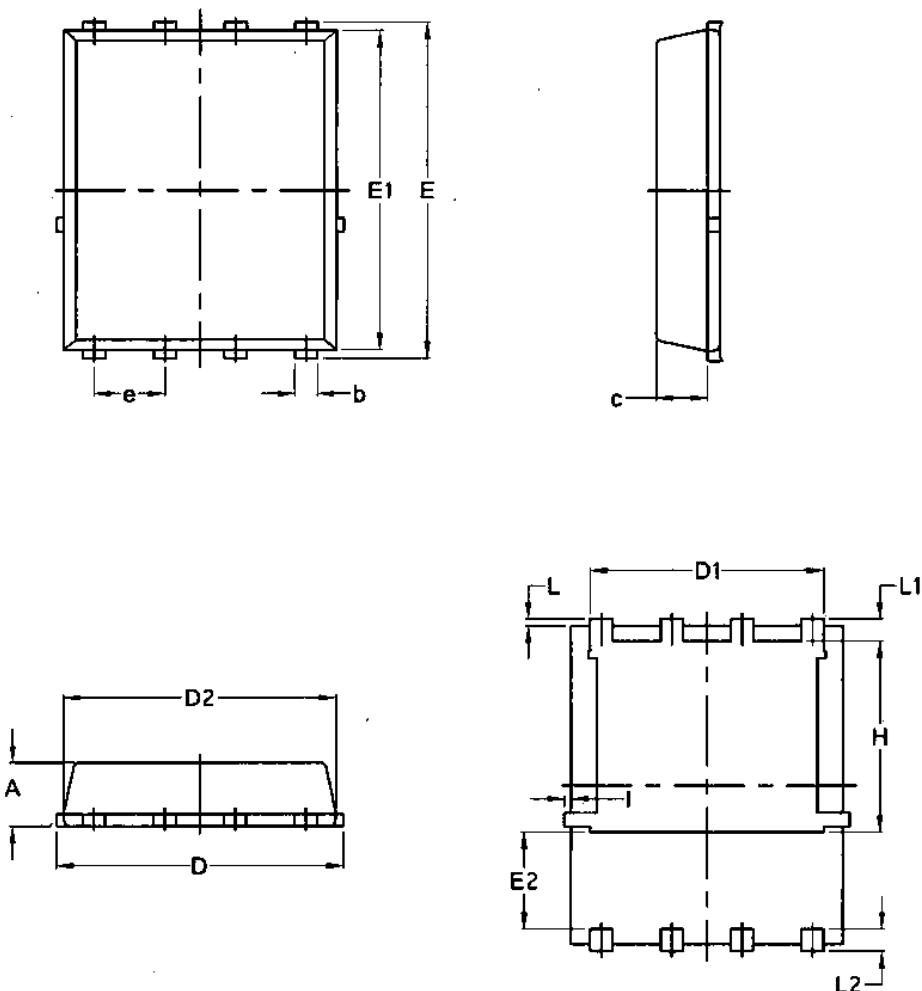
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Package Outline

PDFN5x6-8L

Dimensions in mm



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070