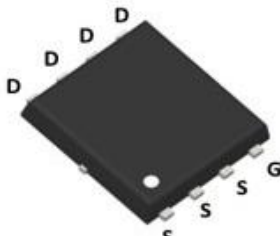
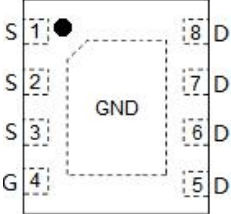
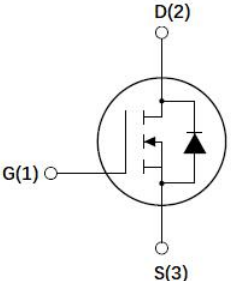


### Description

<p><b>Features</b></p> <ul style="list-style-type: none"> <li>VDS 60V</li> <li>ID 95A</li> <li>RDS(ON)( at VGS=10V) &lt; 3 mohm</li> <li>RDS(ON)( at VGS=4.5V) &lt; 3.5 mohm</li> <li>100% UIS Tested</li> <li>100% <math>\nabla</math>VDS Tested</li> </ul>	<p><b>General Description</b></p> <ul style="list-style-type: none"> <li>Split Gate Trench MOSFET technology</li> <li>Excellent package for heat dissipation</li> <li>High density cell design for low RDS(ON)</li> </ul> <p><b>Applications</b></p> <ul style="list-style-type: none"> <li>DC-DC Converters</li> <li>Power management functions</li> <li>Synchronous-rectification applications</li> </ul>
<p><b>Package</b></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>PDFN5X6-8L</b></p> </div> <div style="text-align: center;">  <p><b>Marking and pin Assignment</b></p> </div> <div style="text-align: center;">  <p><b>Schematic Diagram</b></p> </div> </div>	

### Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	VDS	60	V
Gate-source Voltage	VGS	±20	V
Drain Current (Silicon limited)	ID	155	A
Drain Current <sup>A</sup>	ID	TC=25°C	95
		TC=100°C	60
Pulsed Drain Current <sup>B</sup>	IDM	380	A
Avalanche energy <sup>C</sup>	EAS	560	mJ
Total Power Dissipation <sup>D</sup>	PD	120	W
Thermal Resistance Junction-to-Case	RθJC	1.04	°C/W
Thermal Resistance Junction-to-Ambient <sup>E</sup>	RθJA	20	
Junction and Storage Temperature Range	TJ, TSTG	-55~+150	°C



# 富满微电子集团股份有限公司

## FINE MADE MICROELECTRONICS GROUP CO., LTD.

6095Q (文件编号: S&CIC1948)

N-Channel Enhancement Mode Field Effect Transistor

### Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, 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	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	1.2	1.6	2.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> =20A		2.4	3.0	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> =20A		2.9	3.5	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =20A, V <sub>GS</sub> =0V			1.2	V
Maximum Body-Diode Continuous Current	I <sub>S</sub>				95	A
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=100KHZ		5950		pF
Output Capacitance	C <sub>oss</sub>			1250		
Reverse Transfer Capacitance	C <sub>rss</sub>			85		
<b>Switching Parameters</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, I <sub>D</sub> =50A		93		nC
Gate-Source Charge	Q <sub>gs</sub>			17		
Gate-Drain Charge	Q <sub>gd</sub>			14		
Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =25A, di/dt=100A/us		73		
Reverse Recovery Time	t <sub>rr</sub>			68		
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =30V, I <sub>D</sub> =25A R <sub>GEN</sub> =2Ω		22.5		ns
Turn-on Rise Time	t <sub>r</sub>			6.7		
Turn-off Delay Time	t <sub>d(off)</sub>			80.3		
Turn-off fall Time	t <sub>f</sub>			26.9		

**Note:**

- The maximum current rating is package limited.
- Repetitive rating; pulse width limited by max. junction temperature.
- V<sub>DD</sub>=50 V, R<sub>G</sub>=25 Ω, L=0.5mH, starting T<sub>J</sub>=25 °C.
- P<sub>D</sub> is based on max. junction temperature, using junction-case thermal resistance.
- The value of R<sub>θJA</sub> is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with Ta=25 °C.



Typical Performance Characteristics

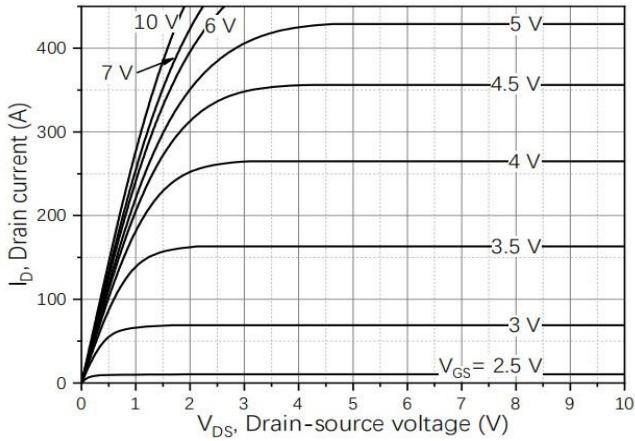


Figure1. Output Characteristics

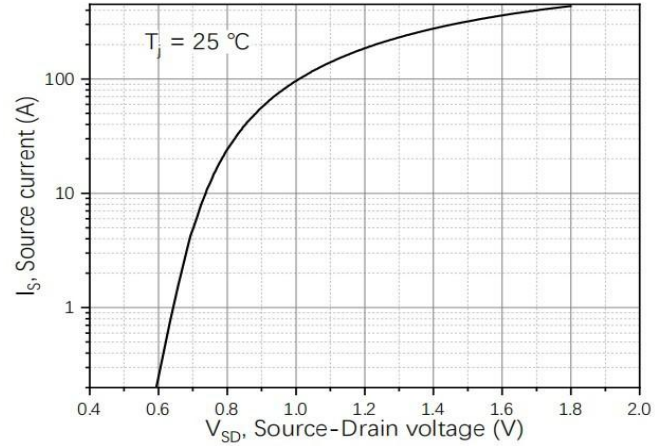


Figure2. Transfer Characteristics

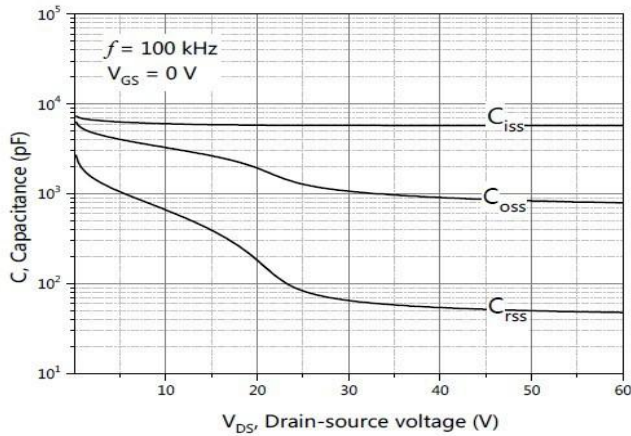


Figure3. Capacitance Characteristics

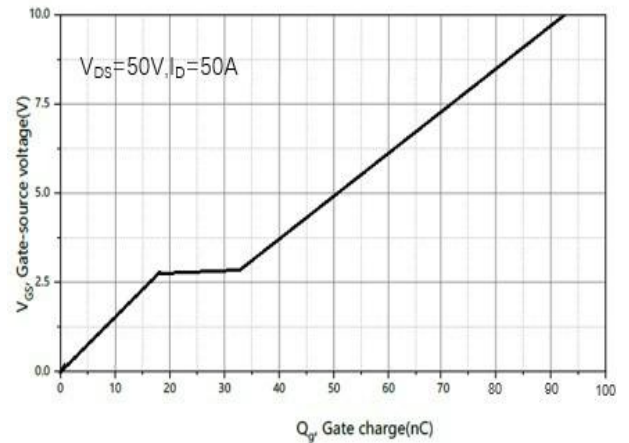


Figure4. Gate Charge

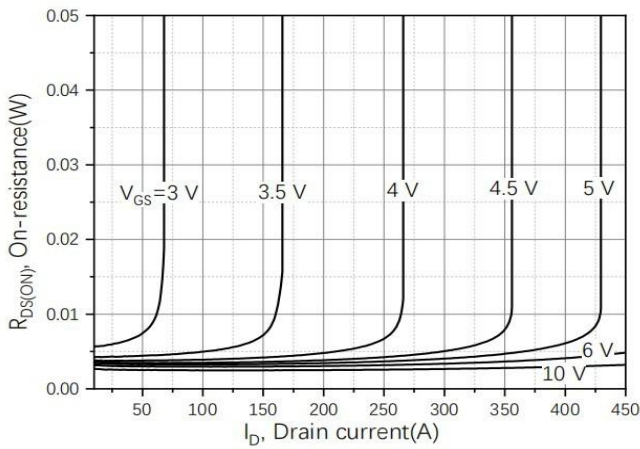


Figure5. Drain-Source on Resistance

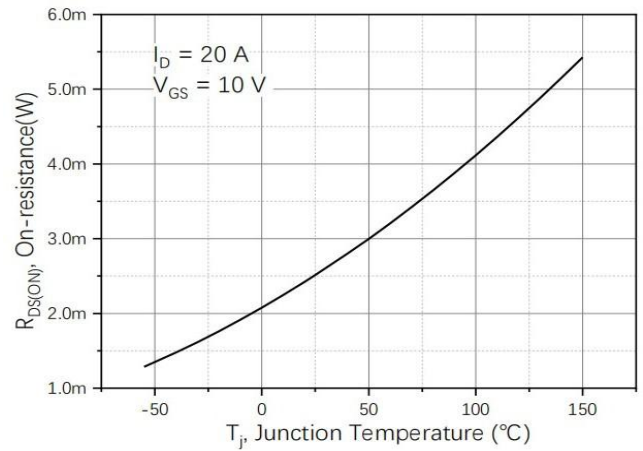


Figure6. Drain-Source on Resistance

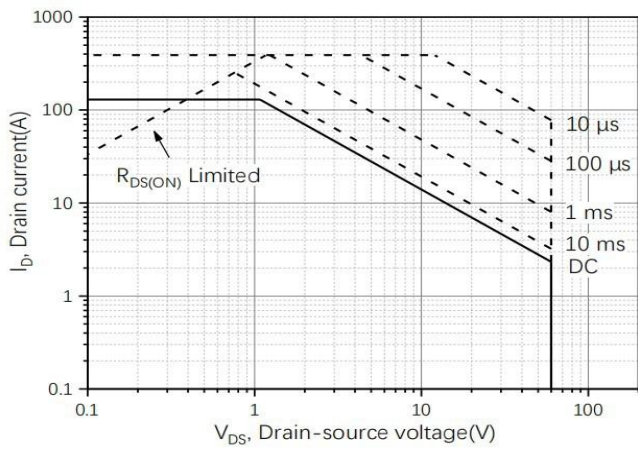


Figure 7. Safe Operation Area

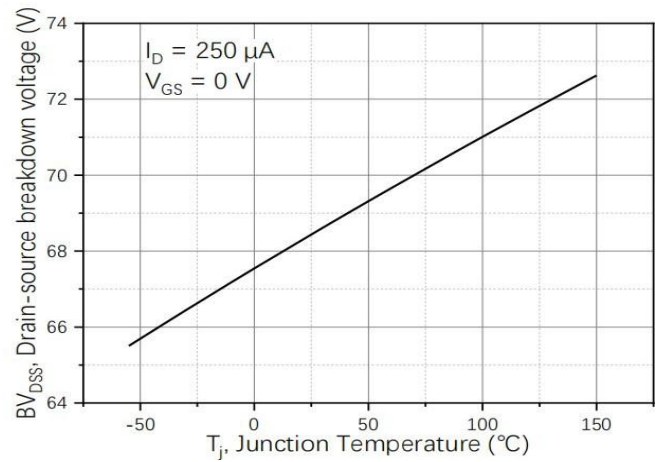


Figure 8. Drain-source breakdown voltage

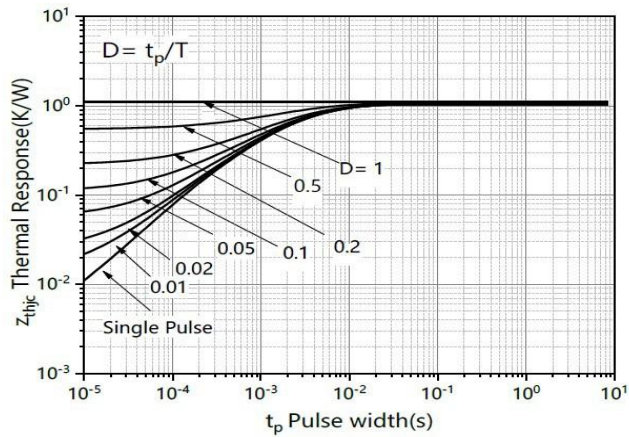


Figure 9. Transient thermal impedance

#### Test circuits and waveforms

Figure A: Gate Charge Test Circuit & Waveforms

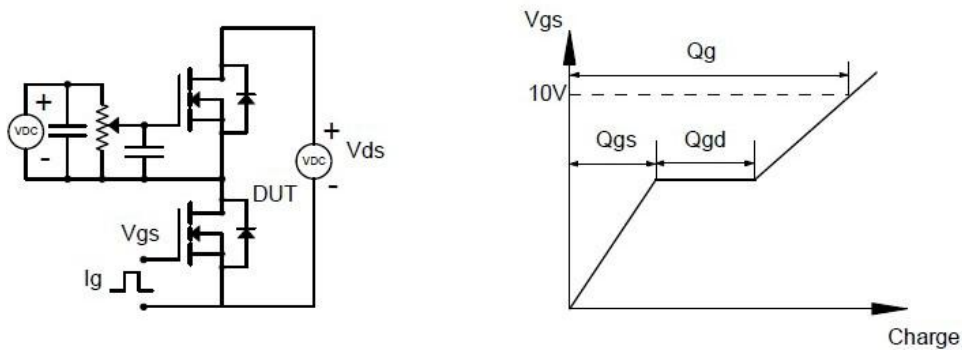


Figure B: Resistive Switching Test Circuit & Waveforms

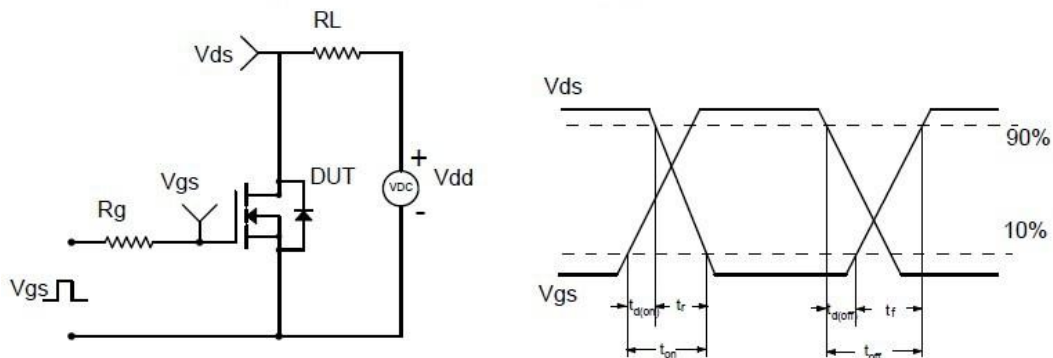


Figure C: Unclamped Inductive Switching (UIS) Test

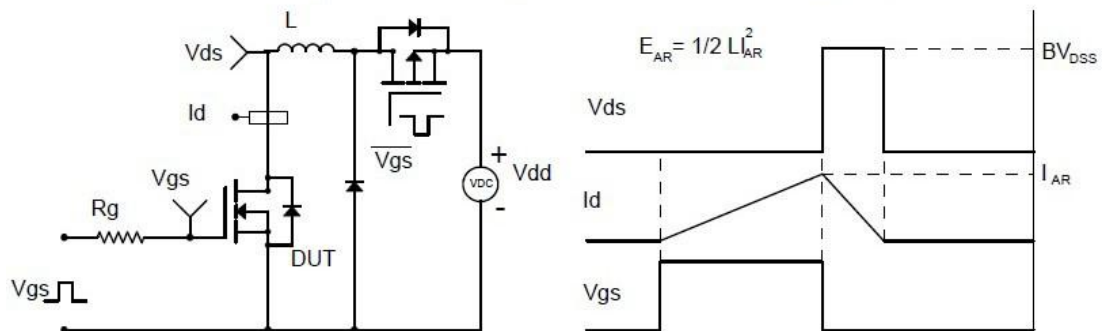
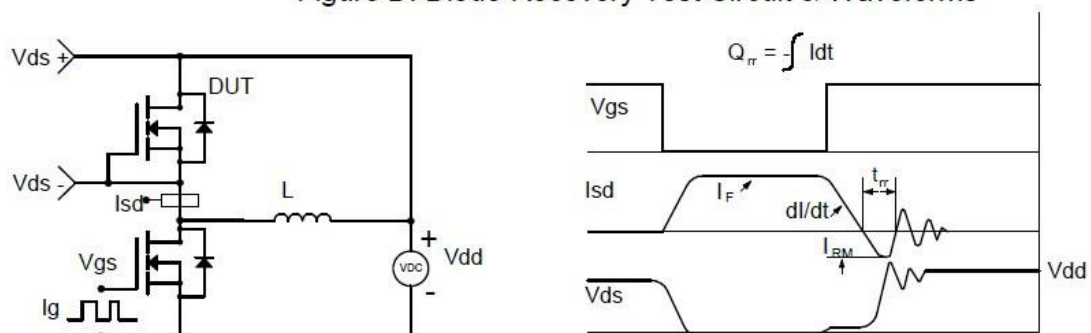


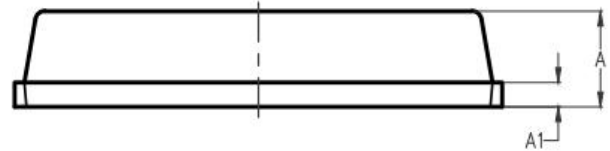
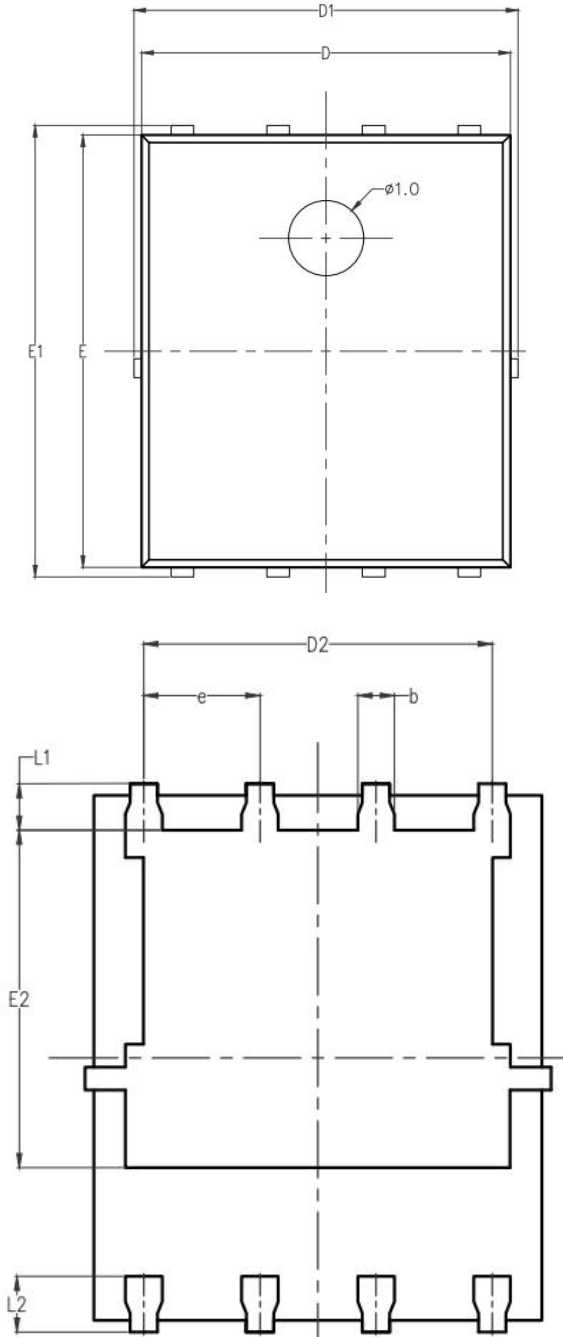
Figure D: Diode Recovery Test Circuit & Waveforms







PDFN5x6-8L Package Information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.95	1.00	1.05
A1	0.254REF.		
b	0.41	0.46	0.51
D	4.85	4.90	4.95
D1	4.90	5.00	5.10
D2	3.766	3.816	3.866
E	5.696	5.746	5.796
E1	5.95	6.00	6.05
E2	3.525	3.575	3.625
e	1.22	1.27	1.32
L1	0.46	0.51	0.56
L2	0.56	0.61	0.66