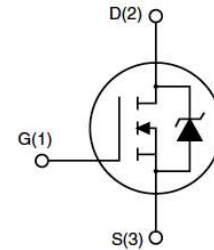


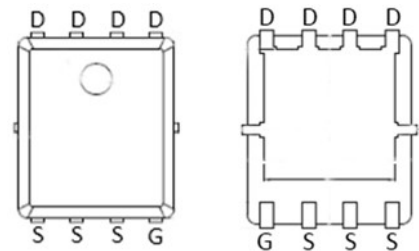
**Feature**

- 100V,60A  
 $R_{DS(on)} < 9.5m\Omega @ V_{GS}=10V$  (TYP:8.2m $\Omega$ )  
 $R_{DS(on)} < 13m\Omega @ V_{GS}=4.5V$  (TYP:11.3m $\Omega$ )
- Split Gate Trench Technology
- Lead free product is acquired
- Excellent  $R_{DS(on)}$  and Low Gate Charge



**Application**

- PWM applications
- Load Switch
- Power management



PDFN5X6-8L

**Package Marking and Ordering Information**

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G095N01G	APG095N01G	PDFN5*6-8L	13 inch	-	5000

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current (T <sub>a</sub> =25°C)	I <sub>D</sub>	60	A
Continuous Drain Current (T <sub>a</sub> =100°C)	I <sub>D</sub>	38	A
Pulsed Drain Current <sup>(1)</sup>	I <sub>DM</sub>	240	A
Singel Pulsed Avalanche Energy <sup>(2)</sup>	E <sub>AS</sub>	90	mJ
Power Dissipation	P <sub>D</sub>	63	W
Thermal Resistance from Junction to Case	R <sub>θJC</sub>	2.0	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

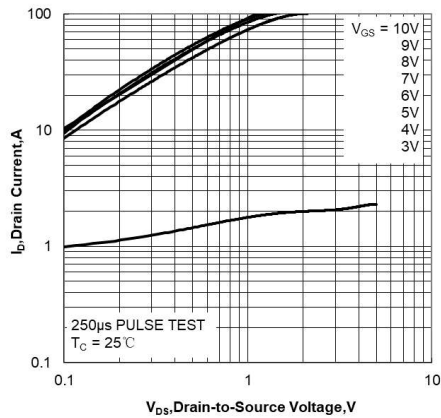
**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	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	100	-	-	V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =80V, 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>(3)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.2	2.0	2.5	V
Drain-source on-resistance <sup>(3)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A	-	8.2	9.5	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =10A	-	11.3	13	
Forward Threshold Voltage	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =20A	-	13.5	-	S
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> =V <sub>GS</sub> =0V, f =1MHz	-	1.94	-	Ω
<b>Dynamic characteristics</b>						
Input Capacitance	C <sub>iSS</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, f =1MHz	-	2122	-	pF
Output Capacitance	C <sub>oss</sub>		-	618	-	
Reverse Transfer Capacitance	C <sub>rSS</sub>		-	25	-	
<b>Switching characteristics</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =50V, I <sub>D</sub> =20A, V <sub>GS</sub> =10V, R <sub>G</sub> =3Ω	-	17	-	ns
Turn-on rise time	t <sub>r</sub>		-	4	-	
Turn-off delay time	t <sub>d(off)</sub>		-	32	-	
Turn-off fall time	t <sub>f</sub>		-	8	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, I <sub>D</sub> =20A, V <sub>GS</sub> =10V	-	41.8	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	9	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	10	-	
Reverse Recovery Chrage	Q <sub>rr</sub>	I <sub>F</sub> =20A, di/dt=100A/us		71.5		nC
Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> =20A, di/dt=100A/us		50.5		ns
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>(3)</sup>	V <sub>DS</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =20A	-	-	1.2	V
Diode Forward current <sup>(4)</sup>	I <sub>S</sub>		-	-	60	A

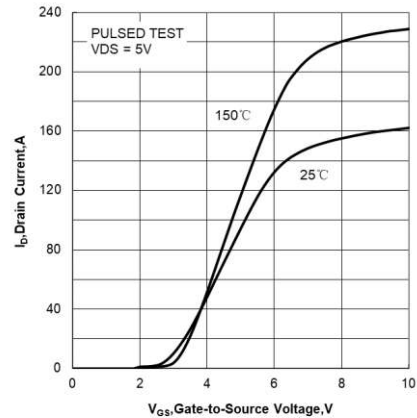
**Notes:**

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. EAS Condition:T<sub>J</sub>=25°C, V<sub>DD</sub>=50V, R<sub>G</sub>=25 Ω ,L=0.5mH
3. Pulse Test: pulse width≤300μs, duty cycle≤2%
4. Surface Mounted on FR4 Board,t≤10 sec

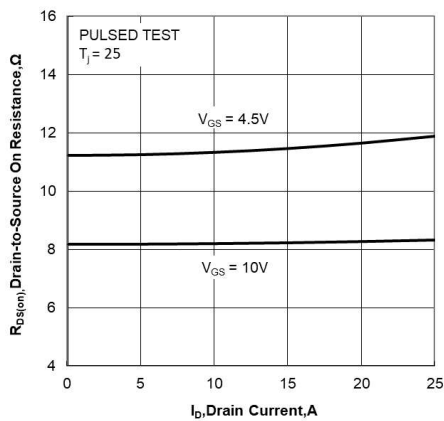
**Typical Performance Characteristics**



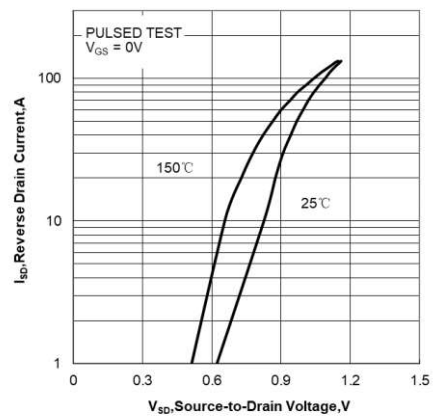
**Figure 1. Output Characteristics**



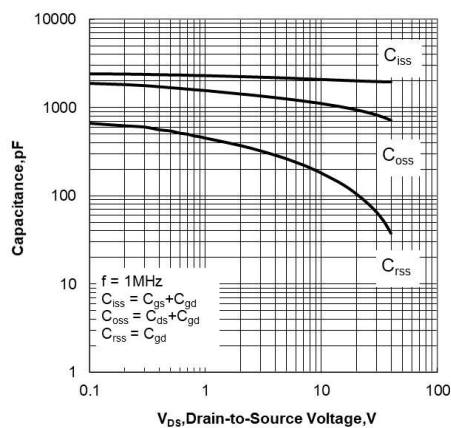
**Figure 2. Transfer Characteristics**



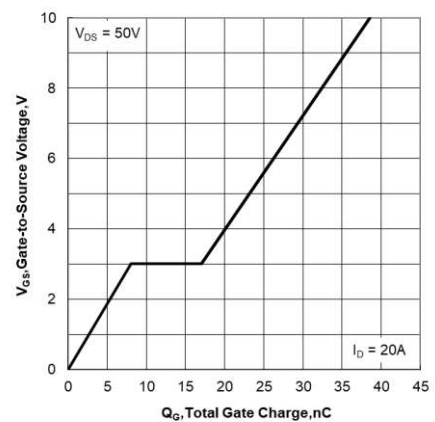
**Figure 3. Drain-to-Source On Resistance vs Drain Current**



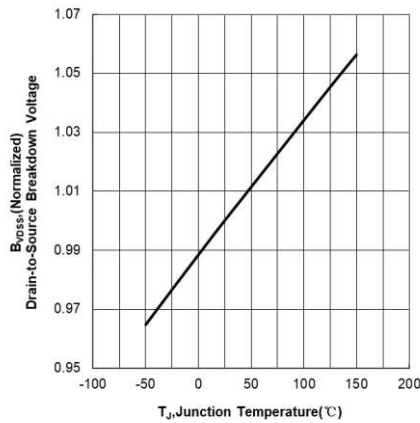
**Figure 4. Body Diode Forward Voltage vs Source Current and Temperature**



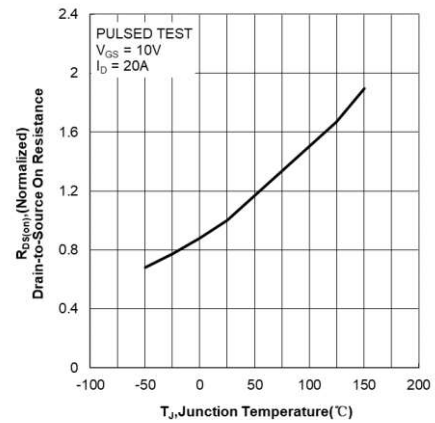
**Figure 5. Capacitance Characteristics**



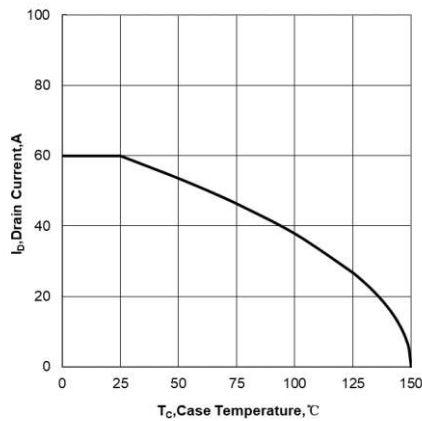
**Figure 6. Gate Charge Characteristics**



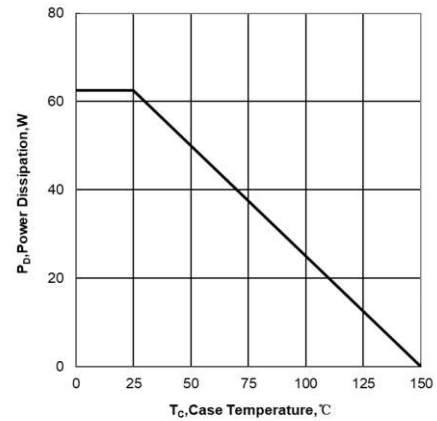
**Figure 7. Normalized Breakdown Voltage vs Junction Temperature**



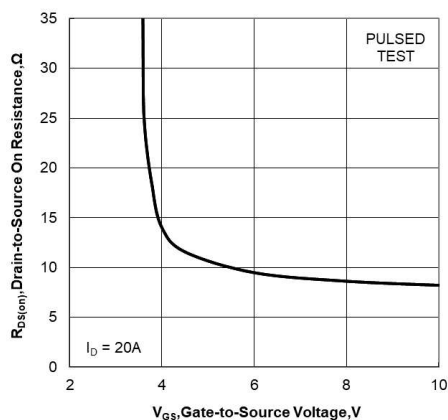
**Figure 8. Normalized On Resistance vs Junction Temperature**



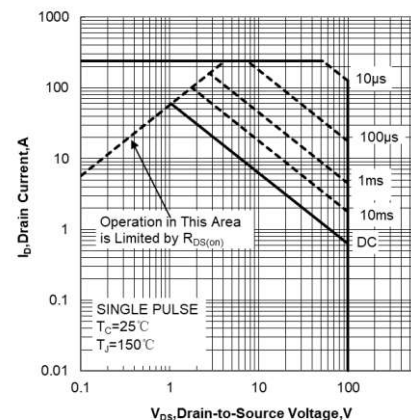
**Figure 9. Maximum Continuous Drain Current vs Case Temperature**



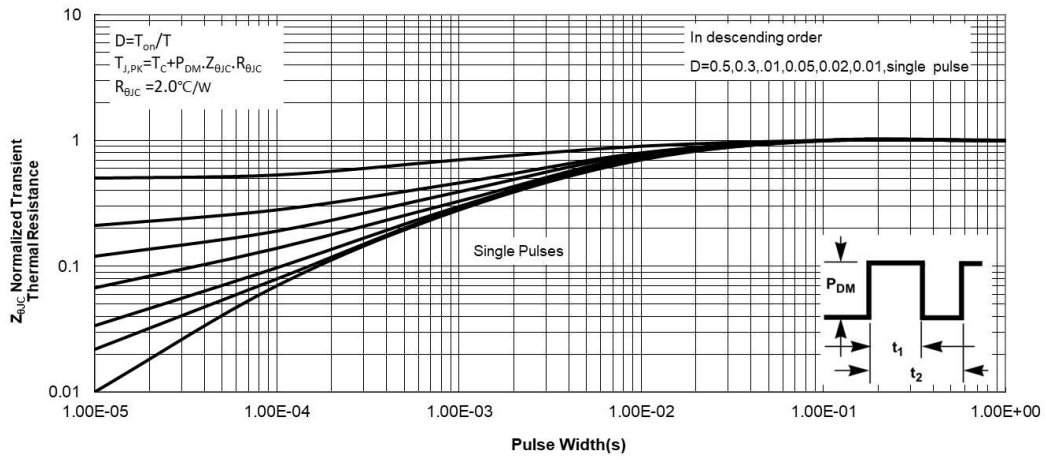
**Figure 10. Maximum Power Dissipation vs Case Temperature**



**Figure 11. Drain-to-Source On Resistance vs Gate Voltage and Drain Current**

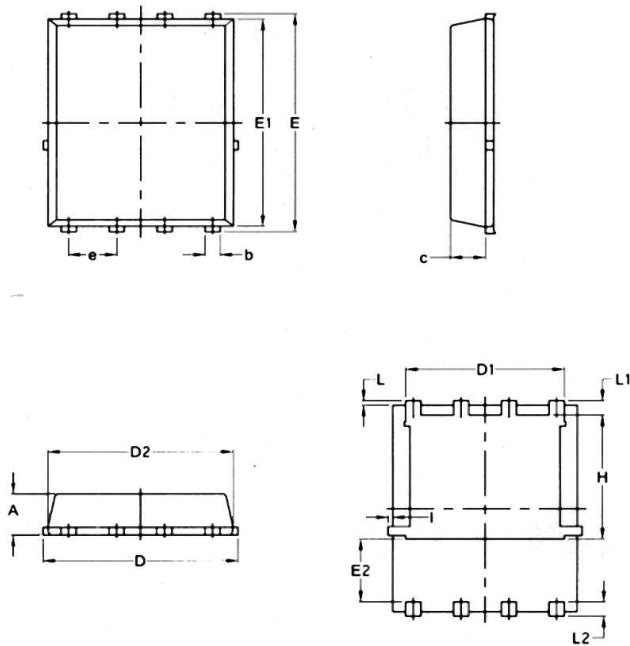


**Figure 12. Maximum Safe Operating Area**



**Figure 13. Maximum Effective Transient Thermal Impedance, Junction-to-Case**

**PDFN5\*6-8L Package Information**



PDFN5X6-8L

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	0.0382
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

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