

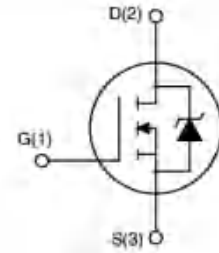
APG060N10G

N-Channel Enhancement Mosfet



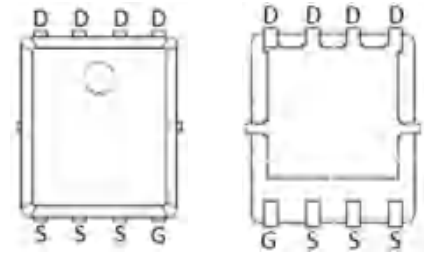
Features

- 100V,84A
 $R_{DS(ON)} < 6.0m\ \Omega @ V_{GS}=10V$ TYP:5.5m Ω
 $R_{DS(ON)} < 8.8m\ \Omega @ V_{GS}=4.5V$ TYP:7.9m Ω
- Low Thermal Resistance
- Super Trench



Applications

- Motor drivers
- DC - DC Converter



PDFN5X6

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G060N10G	APG060N10G	PDFN5X6	-	-	5000

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_C=25^\circ\text{C}$) ⁽¹⁾	I_D	84	A
Continuous Drain Current ($T_C=100^\circ\text{C}$) ⁽¹⁾	I_D	52	A
Pulsed Drain Current ^(1,2,3)	I_{DM}	320	A
Single Pulsed Avalanche Energy ($V_{DD}=50V, L=1.0mH$)	E_{AS}	220	mJ
Drain Power Dissipation	P_D	96	W
Thermal Resistance from Junction to Case ⁽²⁾	$R_{\theta JC}$	1.3	$^\circ\text{C}/\text{W}$
Thermal Resistance- Junction to Ambient ⁽³⁾	$R_{\theta JA}$	42.6	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

Notes:

1. Pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\ \%$
2. Surface Mounted on minimum footprint pad area.
3. Limited by bonding wire

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

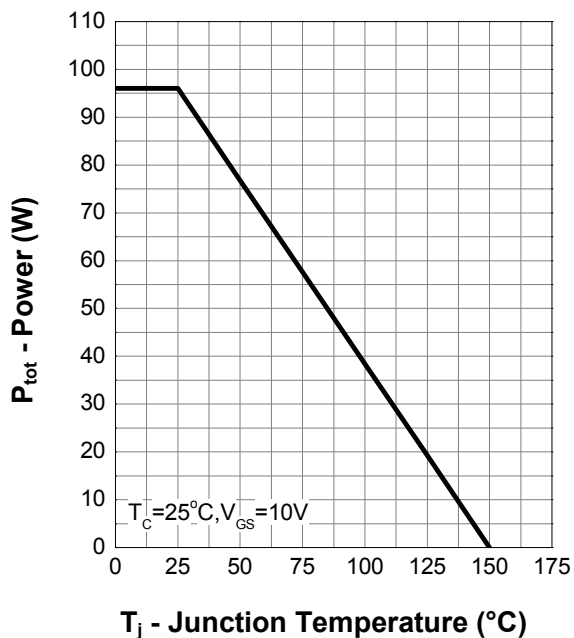
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	100	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =80V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	-	3.0	V
Drain-source on-resistance ^(a)	R _{DS(on)}	V _{GS} =10V, I _D =20A	-	5.5	6.0	mΩ
		V _{GS} =4.5V, I _D =10A		7.9	8.8	mΩ
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f =1.0MHz	-	2876	-	pF
Output Capacitance	C _{oss}		-	516	-	
Reverse Transfer Capacitance	C _{rss}		-	37	-	
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =50V, I _D =20A, R _G =3.9Ω, R _L =2.5Ω, V _G =10V	-	11	-	ns
Turn-on rise time	t _r		-	23	-	
Turn-off delay time	t _{d(off)}		-	48	-	
Turn-off fall time	t _f		-	34	-	
Total Gate Charge	Q _g	V _{DS} =50V, I _D =20A, V _{GS} =10V	-	62	-	nC
Gate-Source Charge	Q _{gs}		-	12	-	
Gate-Drain Charge	Q _{gd}		-	18	-	
Source-Drain Diode characteristics						
Diode Forward voltage ^(a)	V _{SD}	T _C =25°C, V _{GS} =0V, I _S =20A	-	-	1.3	V
Diode Forward current	I _S	T _C =25°C	-	-	84	A
Body Diode Reverse Recovery Time	t _{rr}	T _C =25°C, I _F =20A, di/dt=100A/us		70		ns
Body Diode Reverse Recovery Charge	Q _{rr}	T _C =25°C, I _F =20A, di/dt=100A/us		91		nc

Notes:

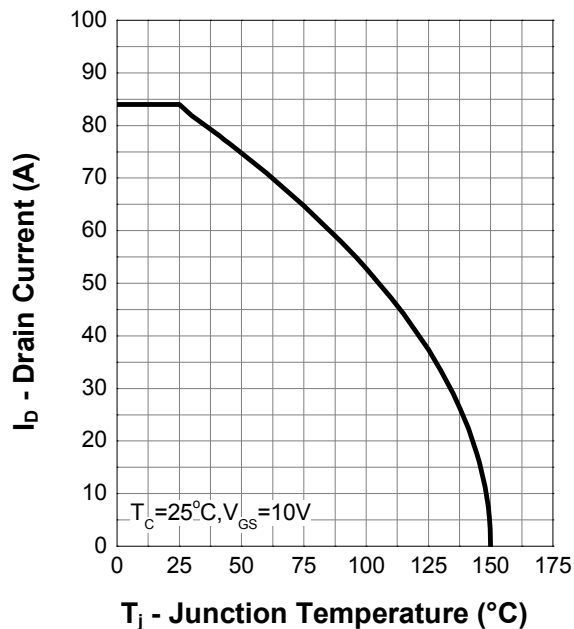
- a) Pulse width ≤ 300 μs, duty cycle ≤ 2%
- b) Guaranteed by design, not subject to production testing

Typical Characteristics (Cont.)

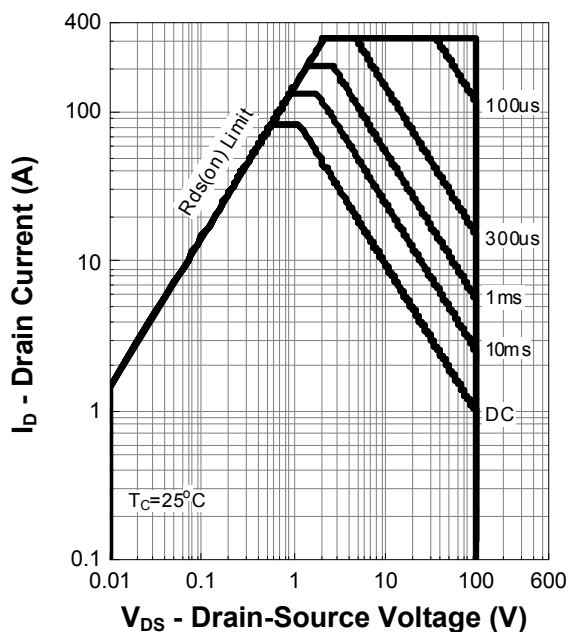
Power Capability



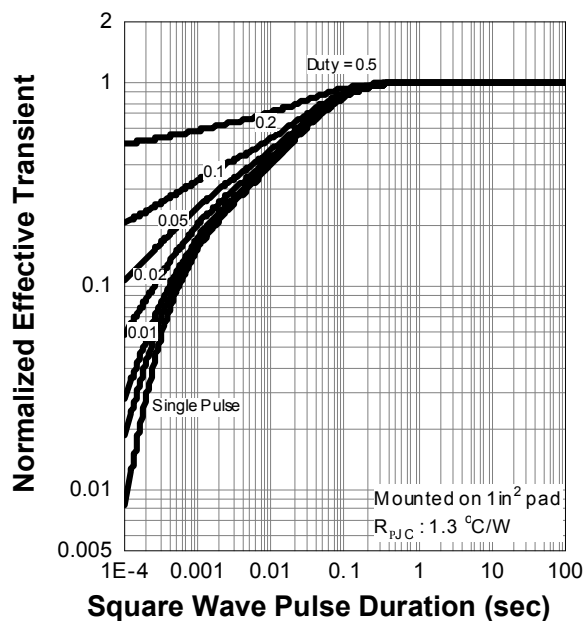
Current Capability



Safe Operation Area

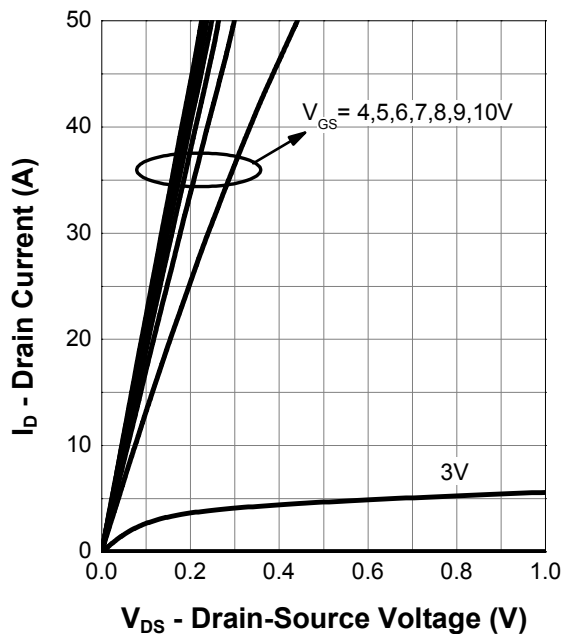


Transient Thermal Impedance

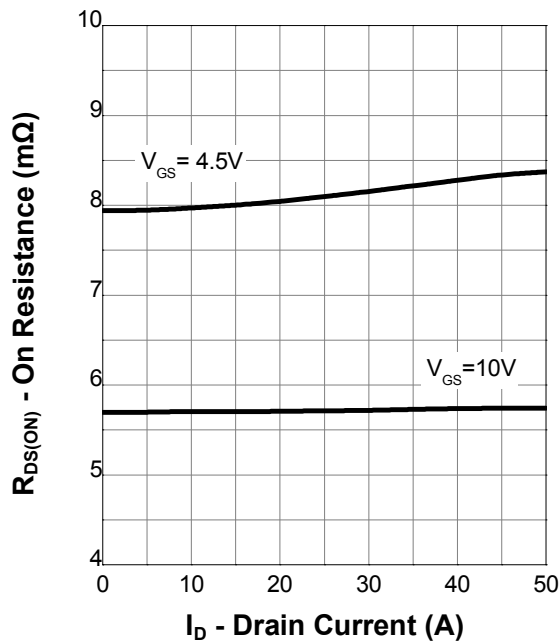


Typical Characteristics (Cont.)

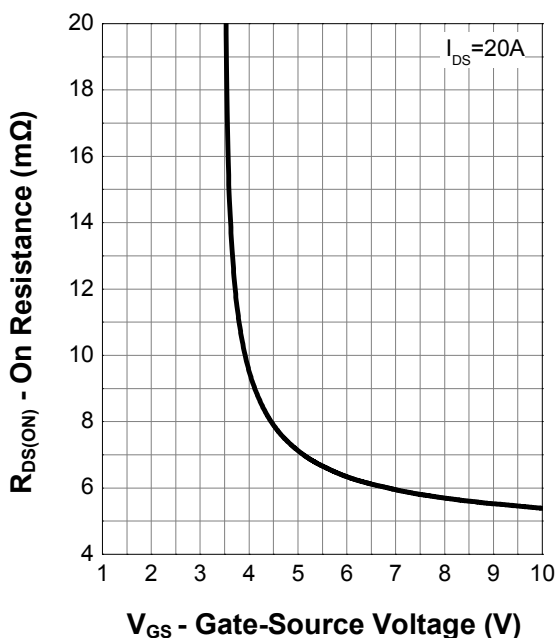
Output Characteristics



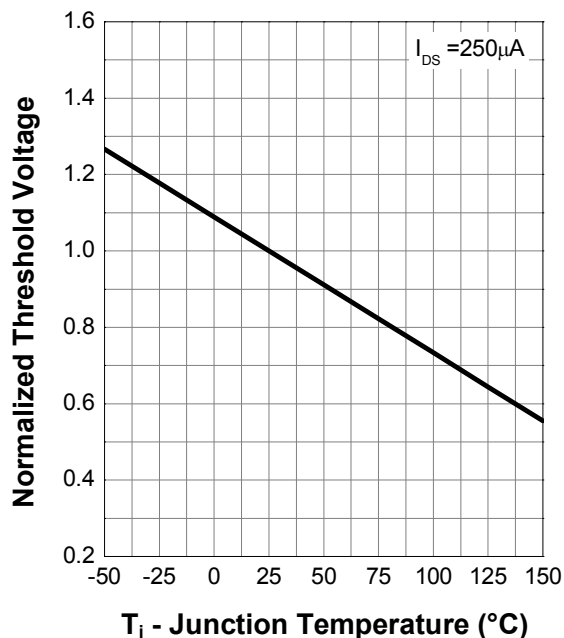
On Resistance



Transfer Characteristics

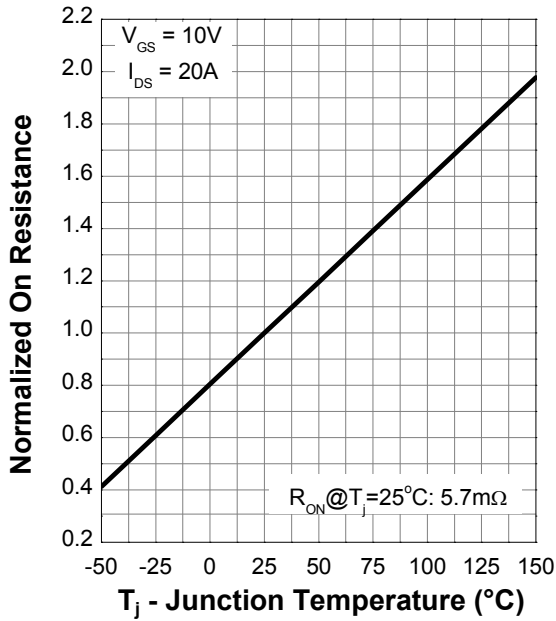


Normalized Threshold Voltage

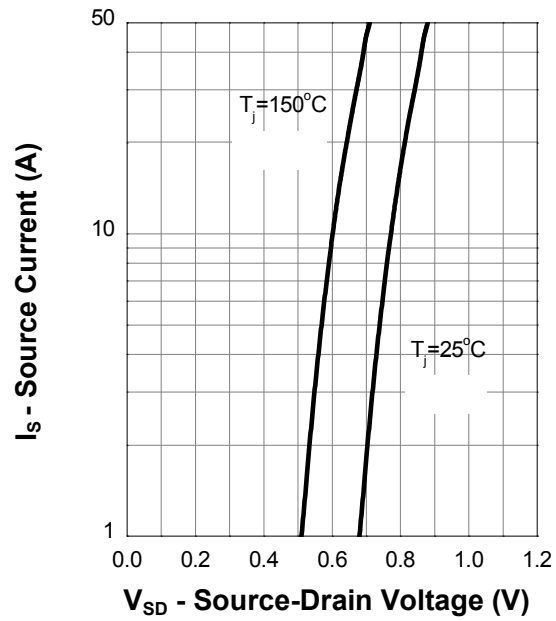


Typical Characteristics (Cont.)

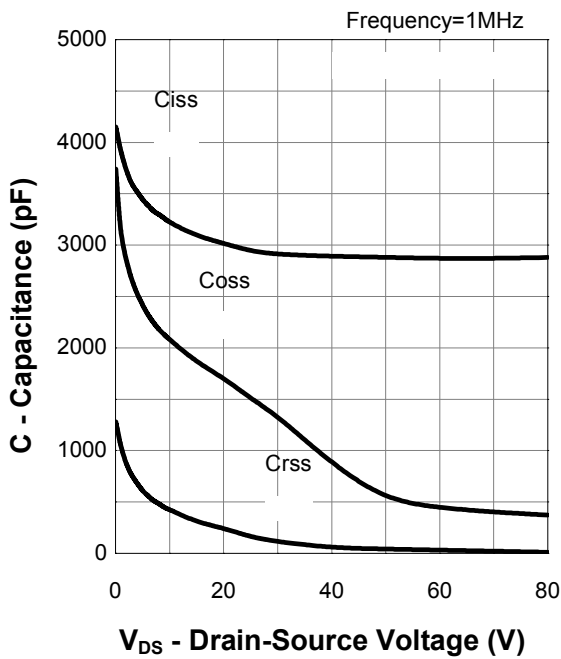
Normalized On Resistance



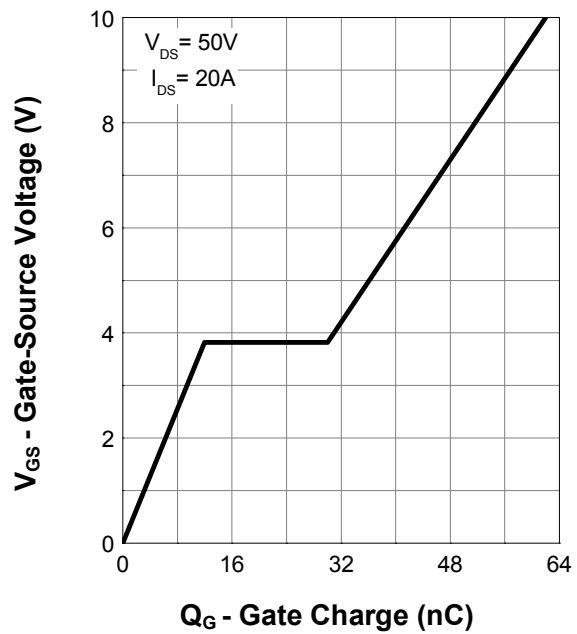
Diode Forward Current



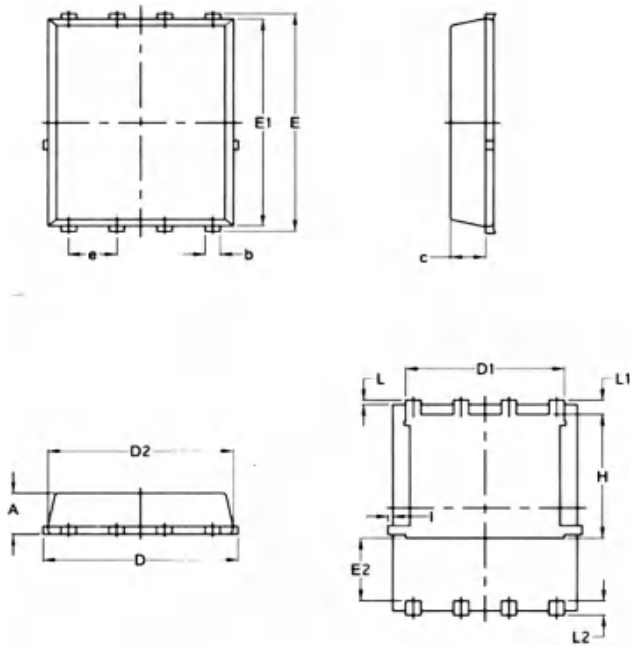
Capacitance



Gate Charge



PDFN5X6 Package Information



PDFN5X6

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