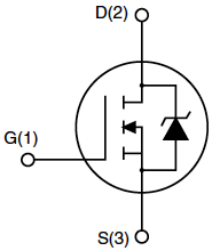
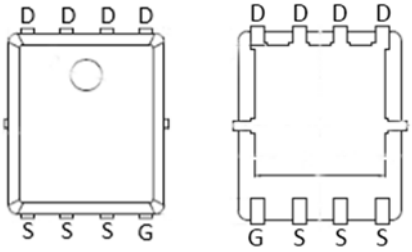
Features

- 80V,150A
  $R_{DS(ON)}$ <3.0mΩ @V_{GS}=10V TYP:2.5mΩ
  $R_{DS(ON)}$ <4.0mΩ @V_{GS}=6V TYP:3.5mΩ
- Surface-mounted package
- Split Gate Trench Technology



Applications

- Power appliances
- BMS appliances
- High power inverter system



PDFN5X6

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G030N08G	APG030N08G	PDFN5X6	-	-	5000

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	80	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_a =25℃) (2,3)	I_D	150	A
Pulsed Drain Current (1,2,3)	I_{DM}	240	A
Single Pulsed Avalanche Energy (V_{DD} =50V,L=0.1mH) (2)	E_{AS}	420	mJ
Drain Power Dissipation	P_D	156	W
Thermal Resistance from Junction to Case(2)	$R_{\theta JC}$	0.8	℃/W
Thermal Resistance- Junction to Ambient(2)	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Notes:

1. Pulse width ≤ 300 μs, duty cycle ≤ 2 %
2. Surface Mounted on n 1 in2 pad area, t ≤ 10 sec.
3. Limited by bonding wire

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ 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	80	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =64V, 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	2.0	-	4.0	V
Drain-source on-resistance[a]	$R_{DS(on)}$	V_{GS} =10V, I_D =30A	-	2.5	3.0	mΩ
		V_{GS} =6V, I_D =20A		3.5	4.0	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =40V, V_{GS} =0V, f =1.0MHz	-	5591	-	pF
Output Capacitance	C_{oss}		-	744	-	
Reverse Transfer Capacitance	C_{rss}		-	75	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=40V, I_D=30A, R_G=4.5Ω, R_L=1.3Ω,V_G=10V	-	23	-	ns
Turn-on rise time	t_r		-	65	-	
Turn-off delay time	$t_{d(off)}$		-	71	-	
Turn-off fall time	t_f		-	73	-	
Total Gate Charge	Qg	V_{DS}=40V, I_D=30A, V_{GS}=10V	-	101	-	nC
Gate-Source Charge	Qgs		-	28	-	
Gate-Drain Charge	Qgd		-	25	-	
Source-Drain Diode characteristics						
Diode Forward voltage[a]	V_{SD}	T_J=25℃, V_{GS} =0V, I_S=30A	-	-	1.3	V
Diode Forward current	I_S	T_C=25℃	-	-	150	A
Body Diode Reverse Recovery Time	trr	T_J=25℃， IF=30A,di/dt=100A/us		62		ns
Body Diode Reverse Recovery Charge	Qrr	T_J=25℃， IF=30A,di/dt=100A/us		83		uc

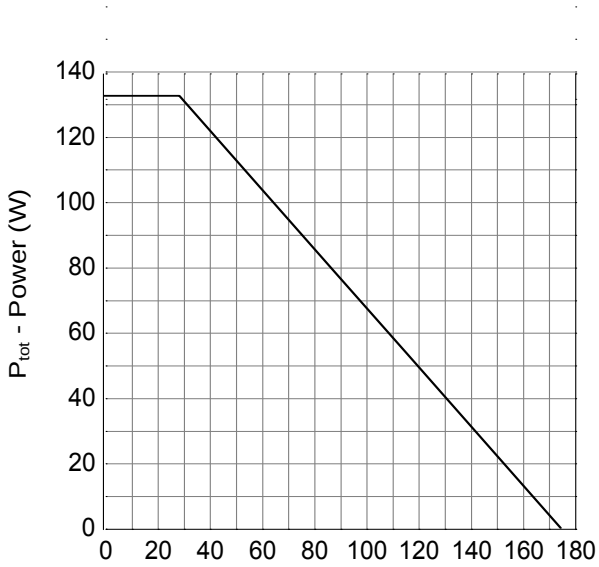
Notes:

a) Pulse width ≤ 300 μs, duty cycle ≤ 2%

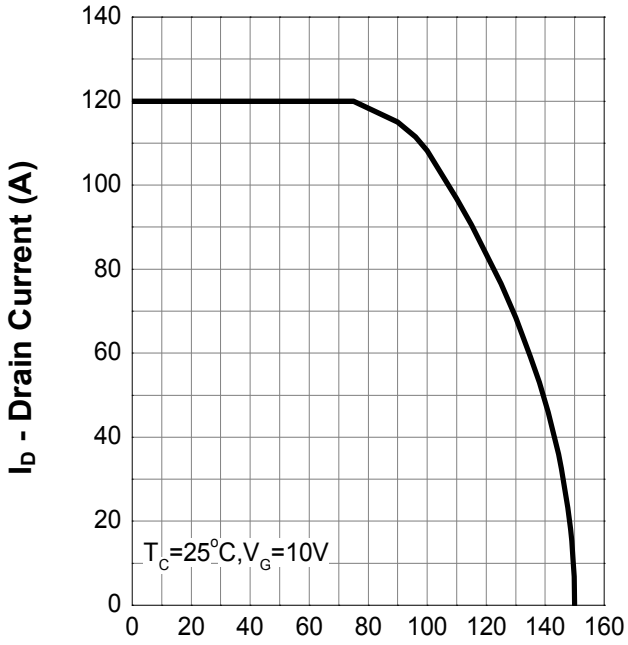
b) Guaranteed by design, not subject to production testing

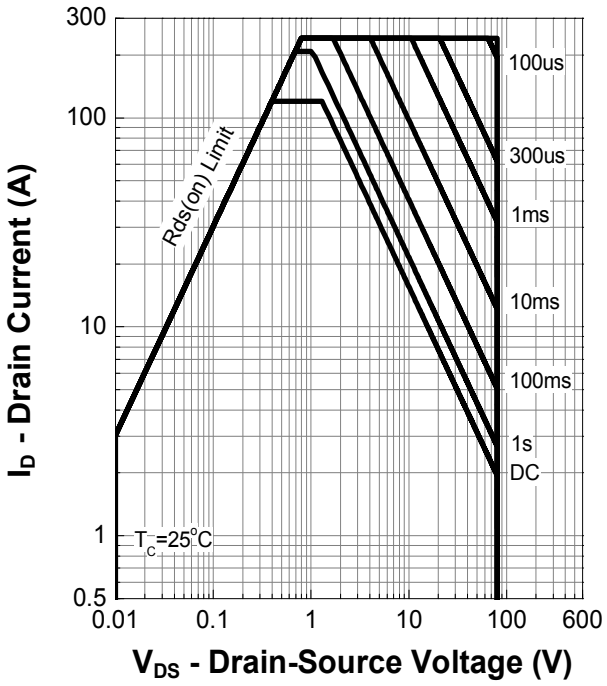
Typical Characteristics (cont.)

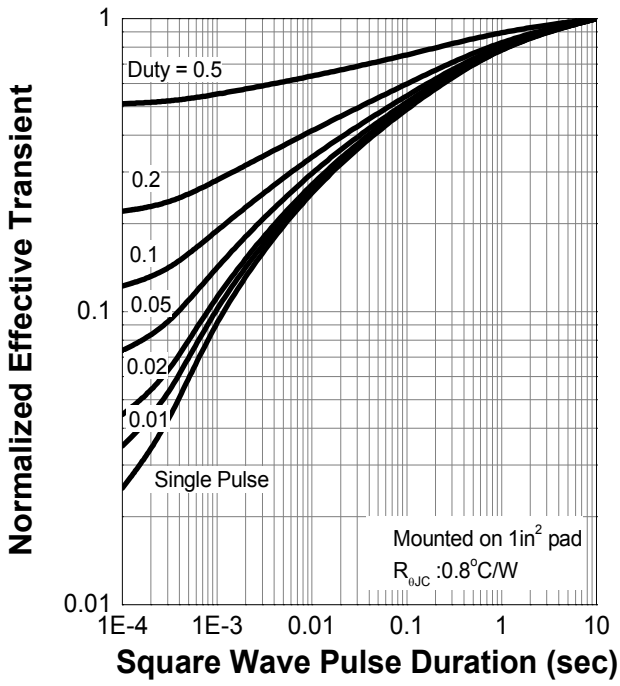
Power Capability



Current Capability

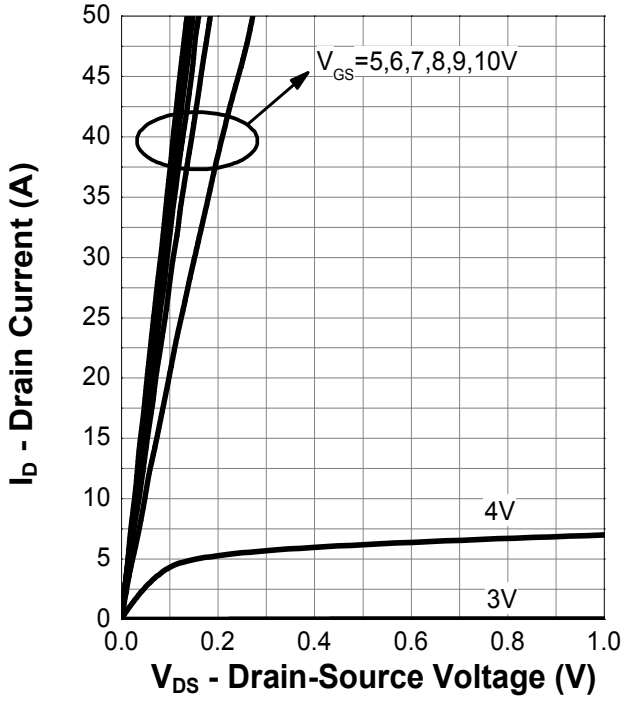




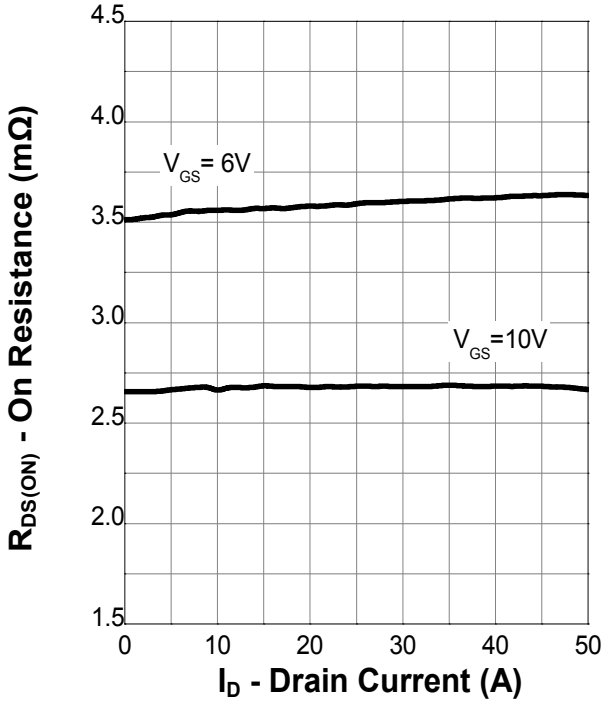


Typical Characteristics (cont.)

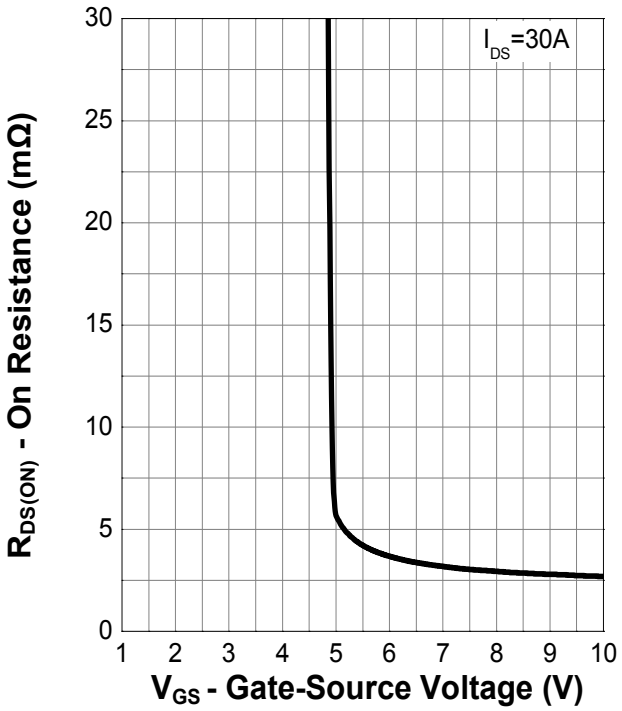
Output Characteristics



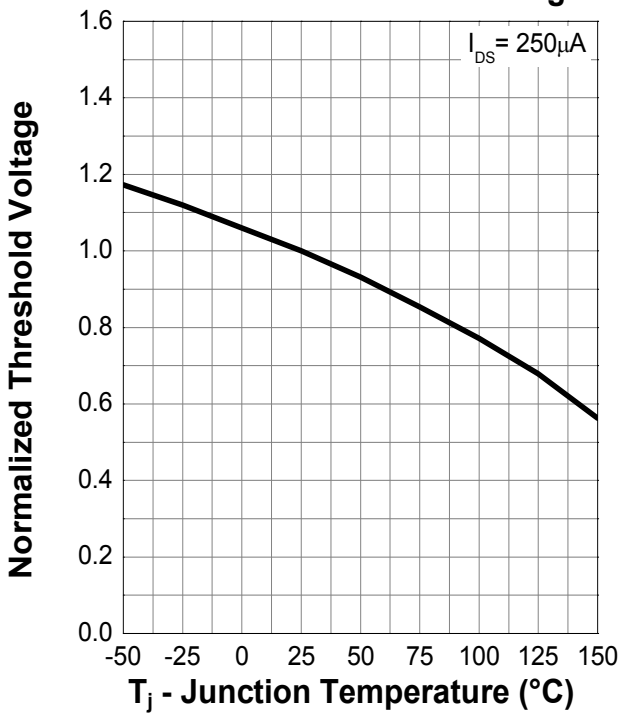
On Resistance



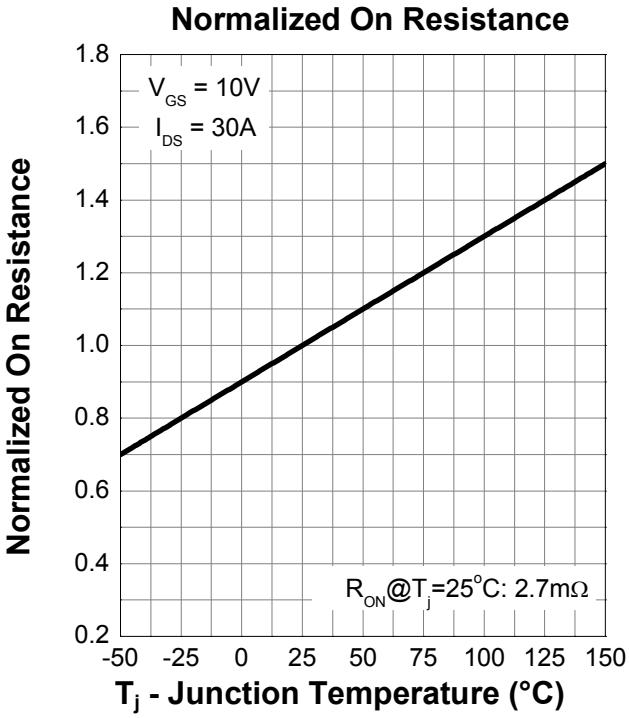
Transfer Characteristics

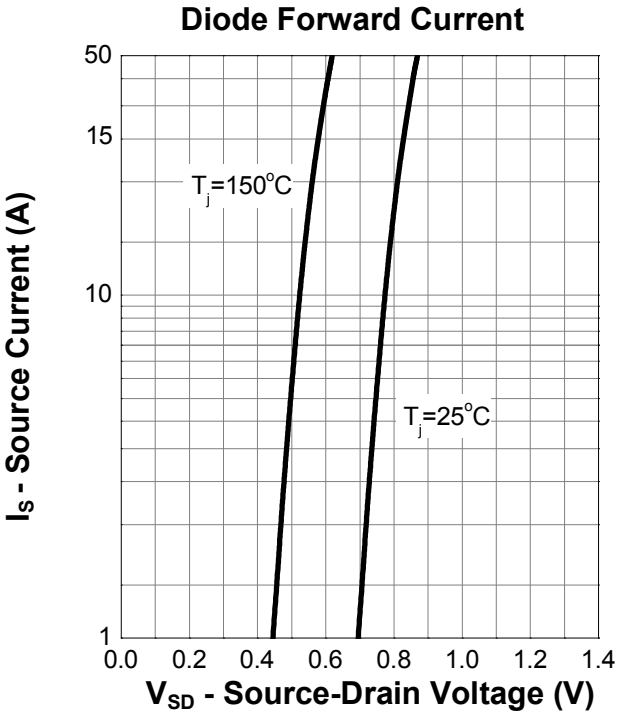


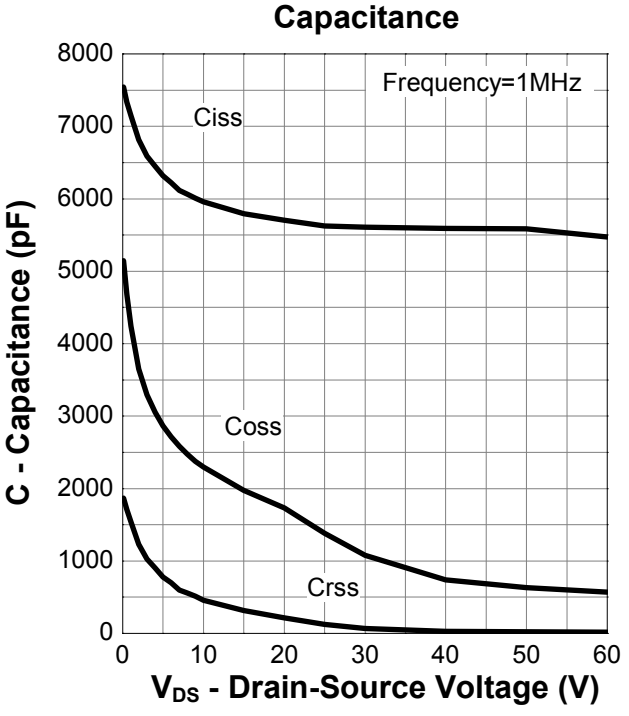
Normalized Threshold Voltage

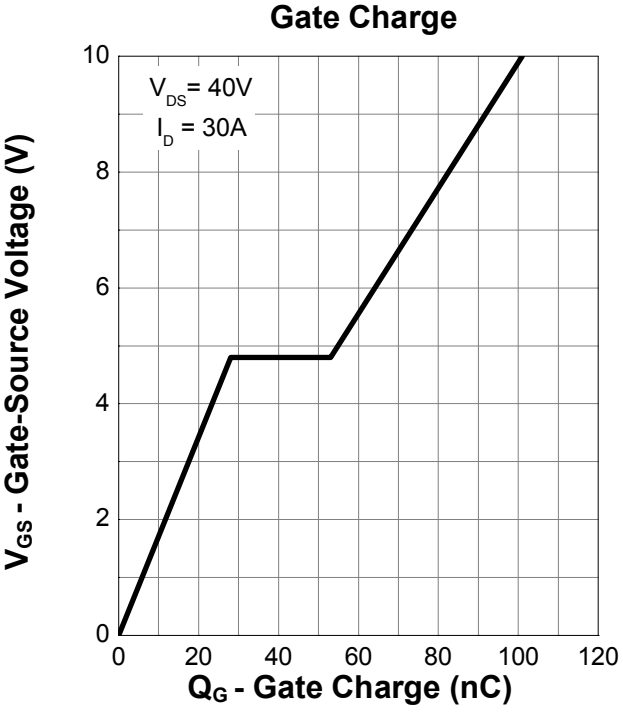


Typical Characteristics (cont.)

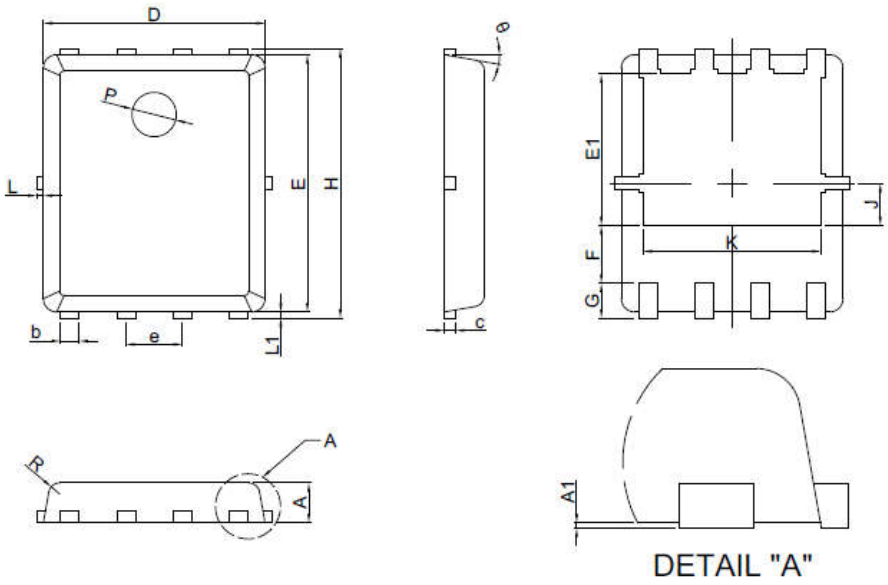








PDFN5X6 Package Dimensions



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	0.80	1.00
A1	0.00	0.05
b	0.35	0.49
c	0.254REF	
D	4.90	5.10
F	1.40REF	
E	5.70	5.90
e	1.27BSC	
H	5.95	6.20
L1	0.10	0.18
G	0.60REF	
K	4.00REF	
L	-	0.15
J	0.95BSC	
P	1.00REF	
E1	3.40REF	
θ	6°	14°
R	0.25REF	