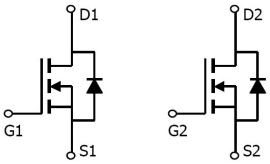
Feature

- 60V,62A
  $R_{DS(ON)}$ <8mΩ @V_{GS}=10V TYP:6.6 mΩ
  $R_{DS(ON)}$ <10mΩ @V_{GS}=4.5V TYP:8.4 mΩ
- 100% Unclamped Inductive Switching
- Lead free product is acquired
- Low Input Capacitance
- Optimized for DC/DC converters
- High Conversion Efficiency
- Ideal for High Frequency Switching and Synchronous Rectification



Schematic Diagram



Marking and pin assignment

Application

- DC/DC Converters
- Body Control Electronics
- Engine Management Systems

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G080N06GD	APG080N06GD	PDFN5X6-D	13 inch	-	5000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_a =25℃)	I_D	62	A
Continuous Drain Current (T_a =100℃)	I_D	42	A
Pulsed Drain Currenr (1)	I_{DM}	90	A
Singel Pulsed Avalanche Energy (4)	E_{AS}	140	mJ
Power Dissipation	P_D	47	W
Thermal Resistance from Junction to Case(3)	$R_{\theta JC}$	3.2	℃/W
Thermal Resistance from Junction to Ambient(3)	$R_{\theta JA}$	51	℃/W
Junction Temperature	T_J	175	℃
Storage Temperature	T_{STG}	-55~ +175	℃

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 =250uA	60	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =60V, V_{GS} = 0V	-	-	1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V,V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage(2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.7	2.5	V
Drain-source on-resistance(2)	$R_{DS(on)}$	V_{GS} =10V, I_D =20A	-	6.6	8	mΩ
		V_{GS} =4.5V, I_D =8A	-	8.4	10	
Gate Resistance	R_g	V_{DS} =V_{GS} =0V, f =1MHz	-	0.75	-	Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =30V, V_{GS} =0V, f =1MHz	-	2100	-	pF
Output Capacitance	C_{oss}		-	445	-	
Reverse Transfer Capacitance	C_{rss}		-	33	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=30V, I_D=20A V_{GS}=10V, R_G=3Ω	-	8	-	ns
Turn-on rise time	t_r		-	33	-	
Turn-off delay time	$t_{d(off)}$		-	22	-	
Turn-off fall time	t_f		-	50	-	
Total Gate Charge	Qg	VDS=30V, ID=20A, VGS=10V	-	41	-	nC
Gate-Source Charge	Qgs		-	6	-	
Gate-Drain Charge	Qgd		-	10	-	
Gate plateau voltage	$V_{plateau}$			3.1		V
Source-Drain Diode characteristics						
Diode Forward voltage(2)	V_{DS}	V_{GS} =0V, I_S=10A	-	-	1.2	V
Diode Forward current(3)	I_S		-	39	-	A
Reverse Recovery Chrage	Qrr	I_F=20A,di/dt=100A/us		18		uC
Reverse Recovery Time	Trr	I_F=20A,di/dt=100A/us		22		ns

Notes:

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. Pulse Test: pulse width≤300μs, duty cycle≤2%
3. Surface Mounted on FR4 Board,t≤10 sec
4. EAS Condition:T_J=25℃,V_{DD}=30V,R_G=25Ω,L=0.5mH

■ Test circuits and waveforms

Figure A: Gate Charge Test Circuit & Waveforms

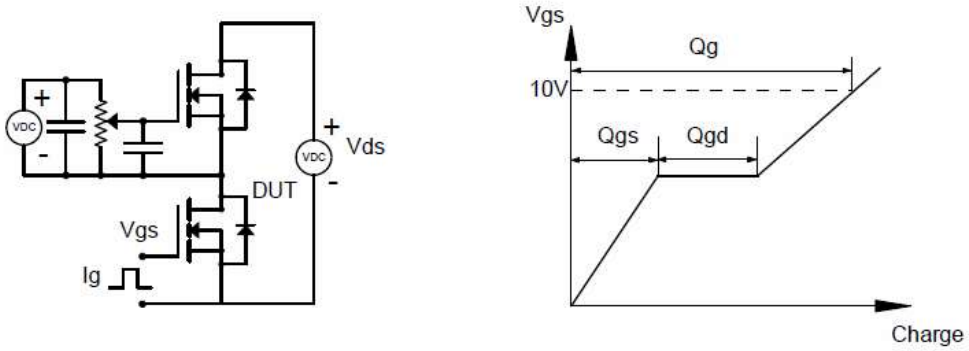


Figure B: Resistive Switching Test Circuit & Waveforms

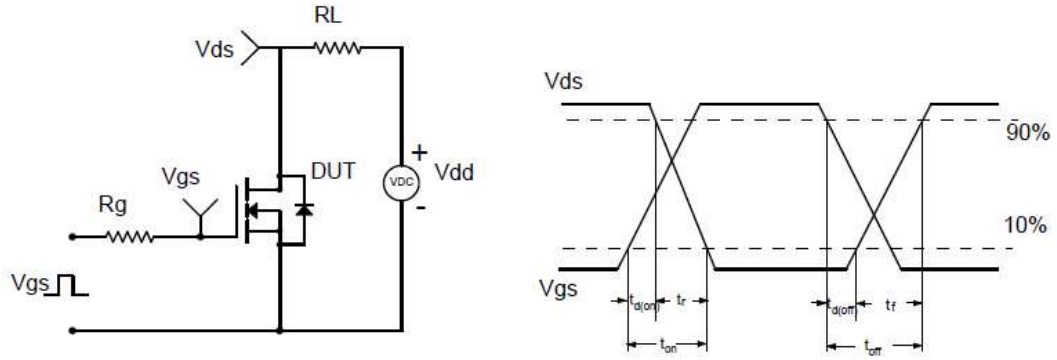


Figure C: Unclamped Inductive Switching (UIS) Test

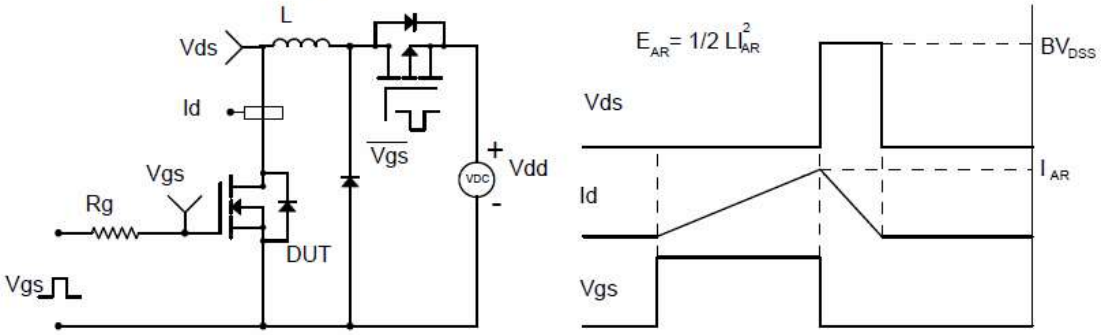
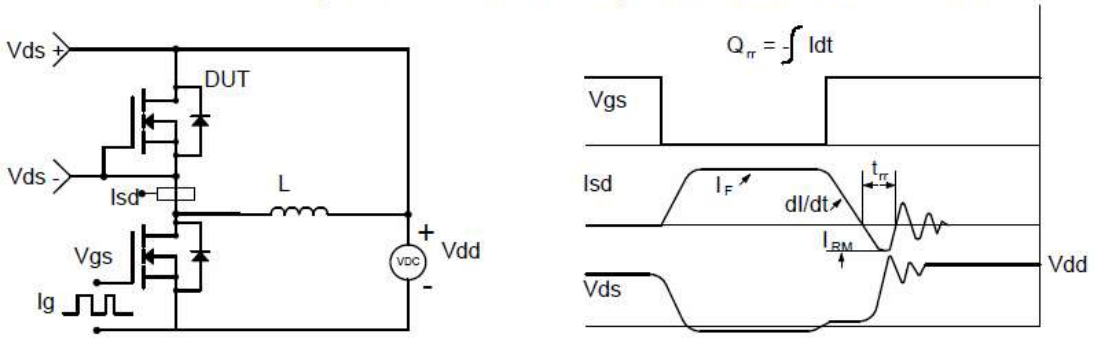


Figure D: Diode Recovery Test Circuit & Waveforms



Typical Performance Characteristics

Fig.1 Power Dissipation Derating Curve

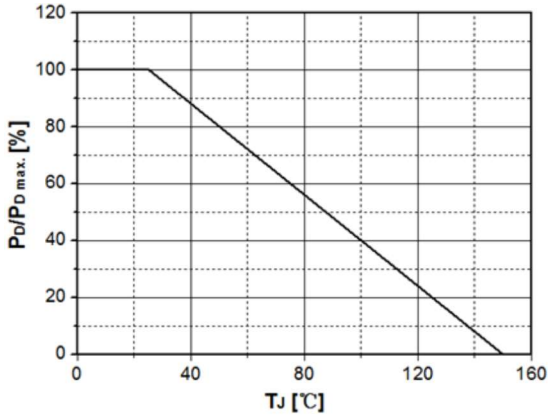


Fig.2 Avalanche Energy Derating Curve vs. Junction Temperature

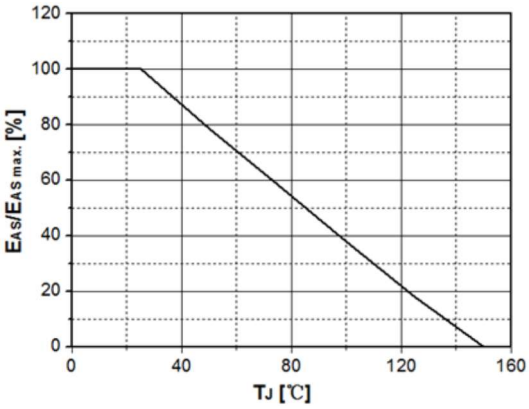


Fig.3 Typical Output Characteristics

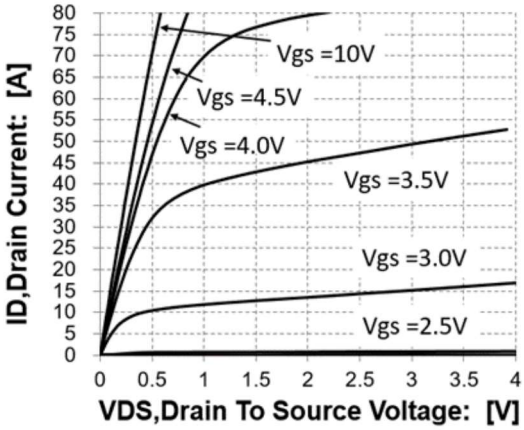


Fig.4 Typical Capacitance vs. Drain Source Voltage

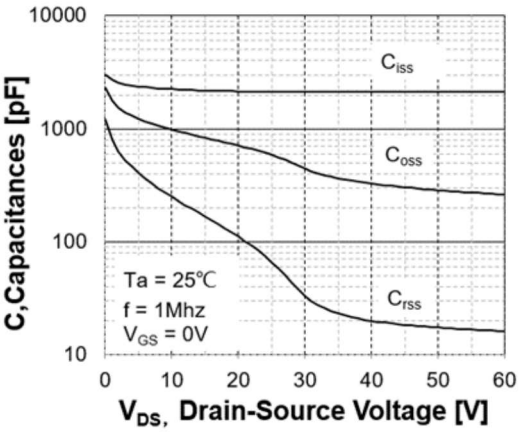


Fig.5 Dynamic Input Characteristics

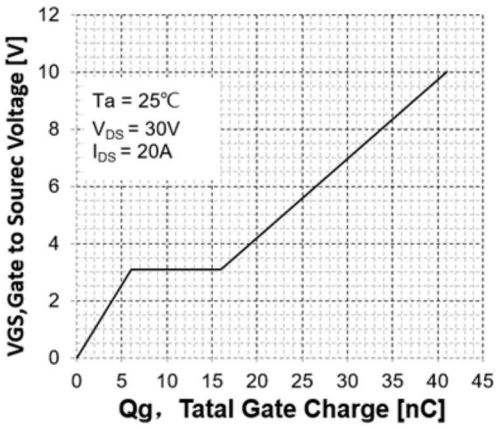
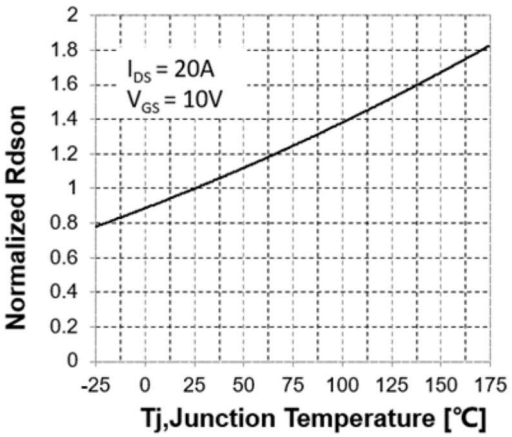


Fig.6 On-Resistance Variation vs. Junction Temperature



Typical Performance Characteristics

Fig.7 Breakdown Voltage
vs. Junction Temperature

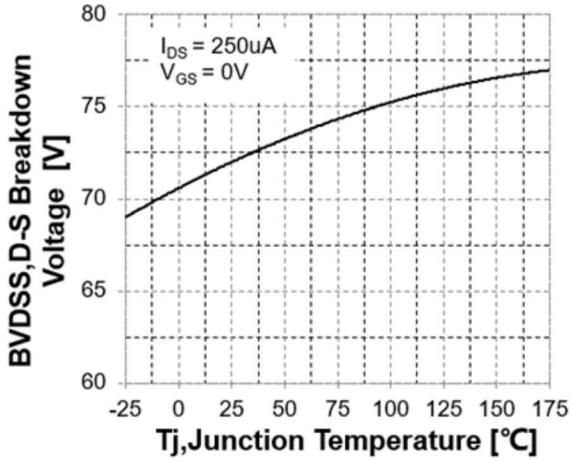


Fig. 8 Gate Threshold Voltage
vs. Junction Temperature

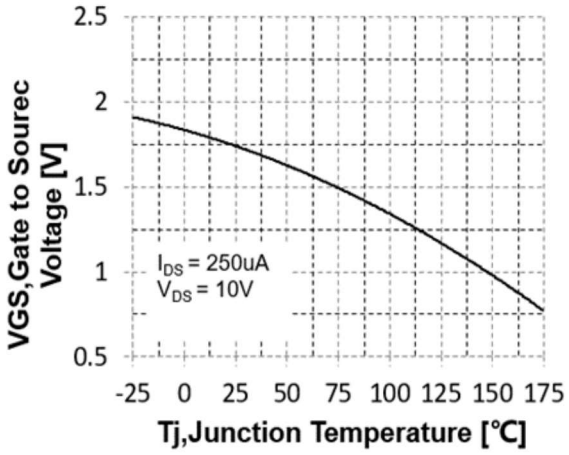


Fig.9 Maximum Drain Current
vs. Case Temperature

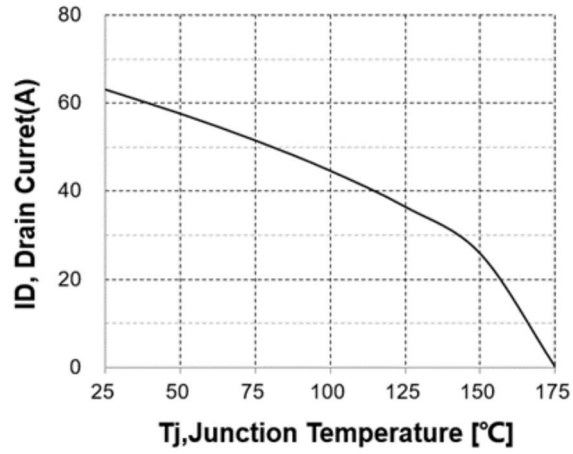
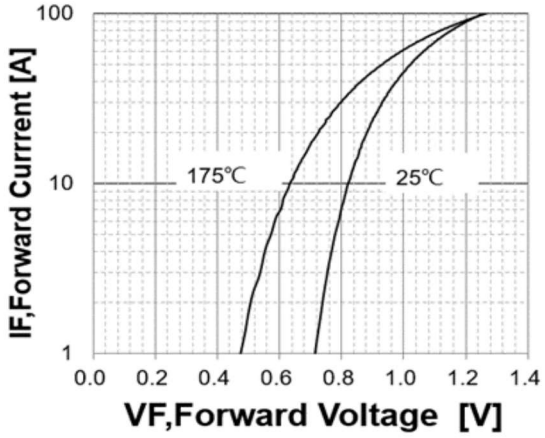


Fig.10 Body Diode Forward Voltage
vs. Reverse Drain Current



Typical Performance Characteristics

Fig.11 Safe Operating Area

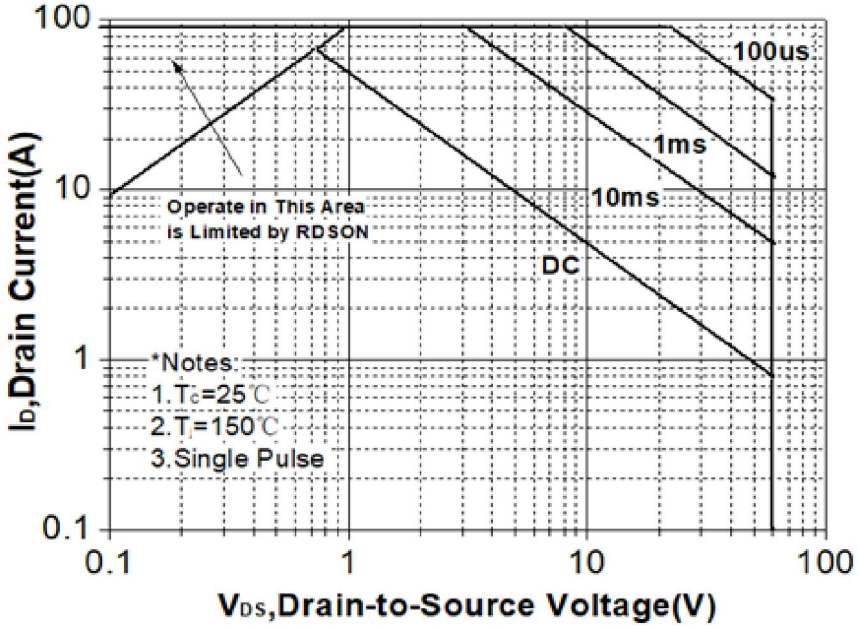
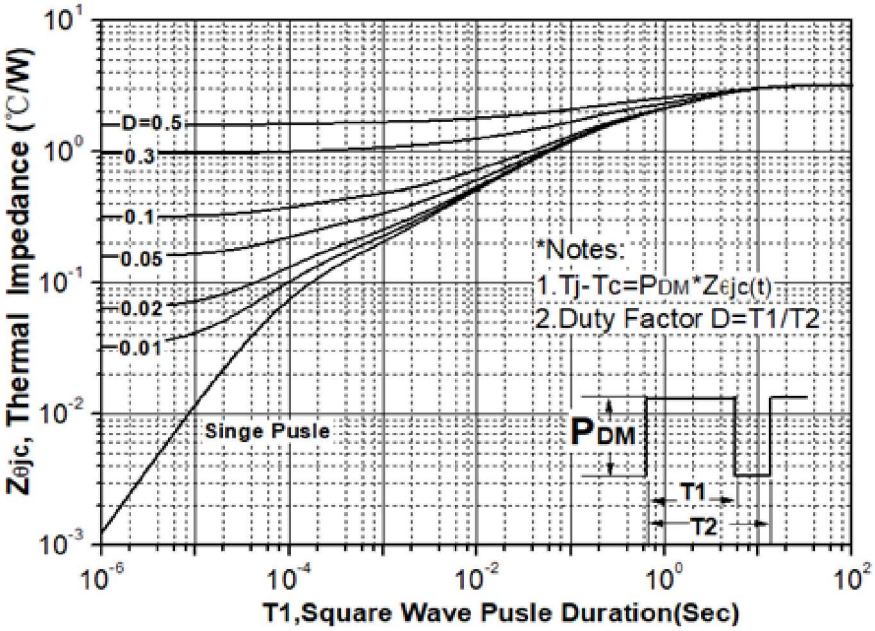
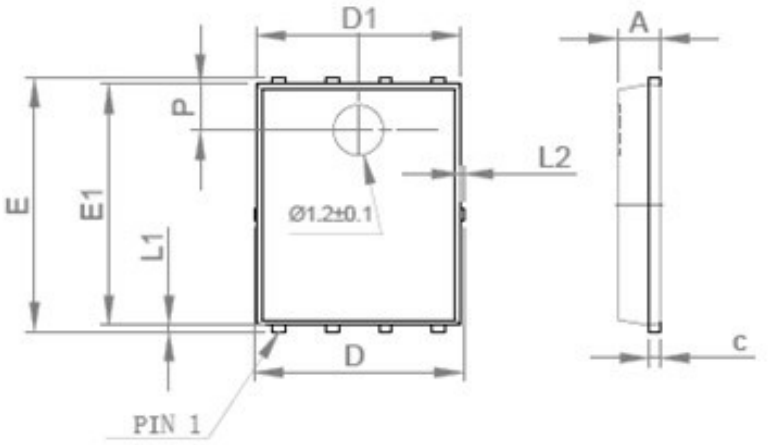
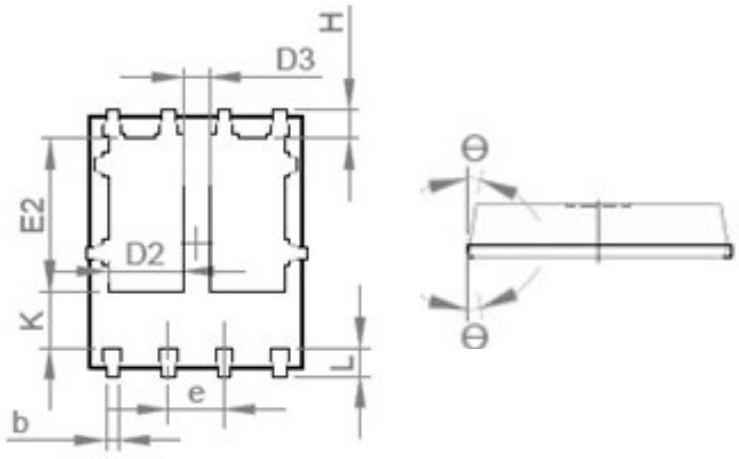


Fig. 12 Transient Thermal Response Curve



Package Dimensions





COMMON DIMENSIONS

(UNITS OF MEASURE = MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.30	0.35
c	0.21	0.25	0.34
D	–	–	5.10
D1	4.80	4.90	5.00
D2	1.605	1.705	1.805
D3	0.55	0.60	0.65
e	1.27 BSC		
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.375	3.475	4.475
H	0.55	0.65	0.75
K	1.20	–	–
L	0.60	0.65	0.70
L1	0.05	0.15	0.25
L2	–	–	0.12
θ	8°	10°	12°
P	1.00	1.10	1.20