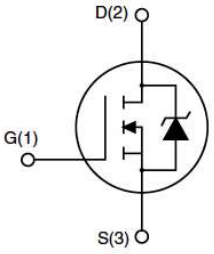
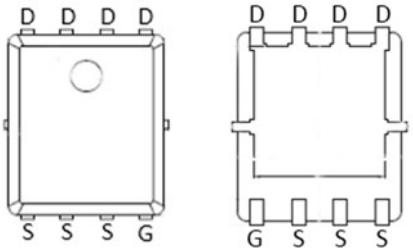
Feature

- 150V,60A
  $R_{DS(ON)}$ <18mΩ @V_{GS}=10V (TYP:15mΩ)
  $R_{DS(ON)}$ <22mΩ @V_{GS}=6V (TYP:18mΩ)
- 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

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G018N15G	APG018N15G	PDFN5X6	-	-	5000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±25	V
Continuous Drain Current (T_a =25℃)	I_D	60	A
Continuous Drain Current (T_a =100℃)	I_D	38.4	A
Pulsed Drain Currenr (1)	I_{DM}	120	A
Single Pulsed Avalanche Energy (2)	E_{AS}	580	mJ
Power Dissipation	P_D	140	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.89	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/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 =250μA	150	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =150V, V_{GS} = 0V	-	-	1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±25V, V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	-	4.0	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =10V, I_D =20A	-	15	18	mΩ
		V_{GS} =6V, I_D =10A	-	18	22	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =75V, V_{GS} =0V, f =1MHz	-	2881	-	pF
Output Capacitance	C_{oss}		-	207	-	
Reverse Transfer Capacitance	C_{rss}		-	23	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=75V, I_D=20A, V_{GS}=10V, R_G=4.5Ω	-	15	-	ns
Turn-on rise time	t_r		-	34	-	
Turn-off delay time	$t_{d(off)}$		-	30	-	
Turn-off fall time	t_f		-	26	-	
Total Gate Charge	Qg	VDS=75V, ID=20A, VGS=10V	-	30.5	-	nC
Gate-Source Charge	Qgs		-	16.1	-	
Gate-Drain Charge	Qgd		-	10.8	-	
Reverse Recovery Chrage	Qrr	I_F=20A,di/dt=100A/us		310		nC
Reverse Recovery Time	Trr	I_F=20A,di/dt=100A/us		86		ns
Source-Drain Diode characteristics						
Diode Forward voltage(3)	V_{DS}	V_{GS} =0V, I_S=40A	-	-	1.3	V
Diode Forward current(4)	I_S		-	-	60	A

Notes:

1. Repetitive Rating: pulse width limited by maximum junction temperature
2. EAS Condition:T_J=25℃,V_{DD}=50V,R_G=25Ω,L=0.5Mh
3. Pulse Test: pulse width≤300μs, duty cycle≤2%
4. Surface Mounted on FR4 Board,t≤10 sec

■ Test circuits and waveforms

Figure A: Gate Charge Test Circuit & Waveforms

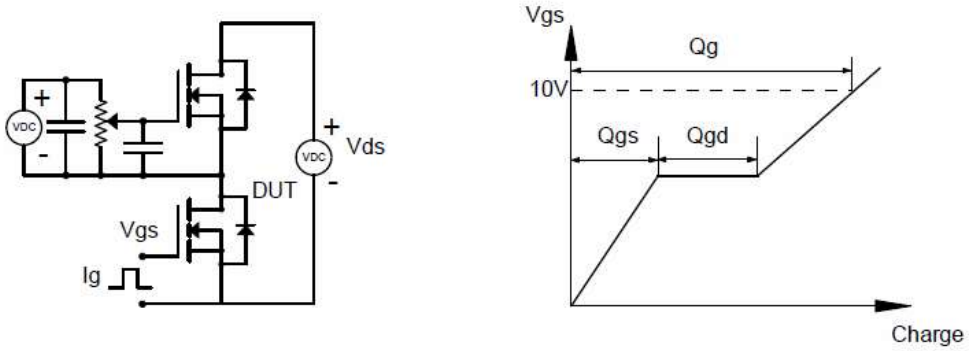


Figure B: Resistive Switching Test Circuit & Waveforms

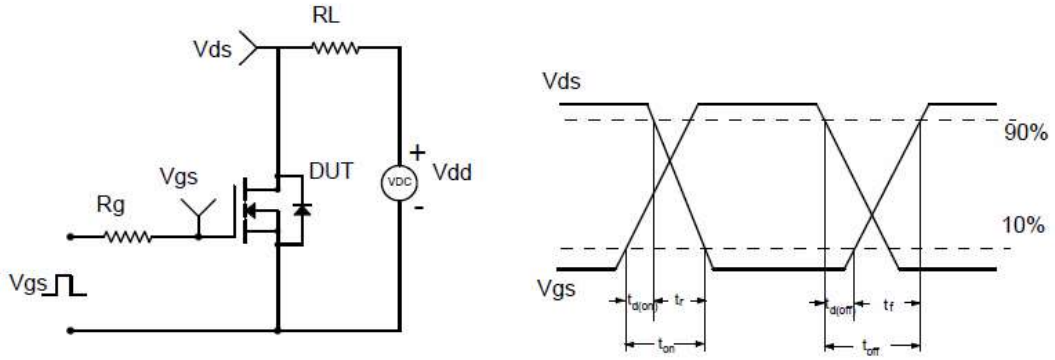


Figure C: Unclamped Inductive Switching (UIS) Test

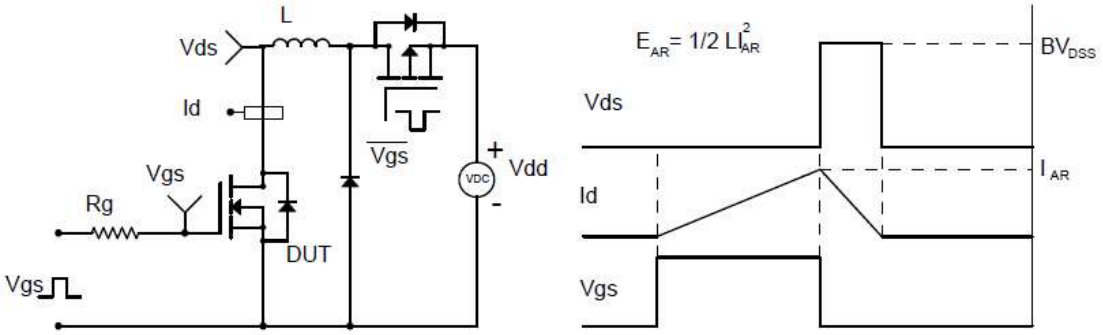
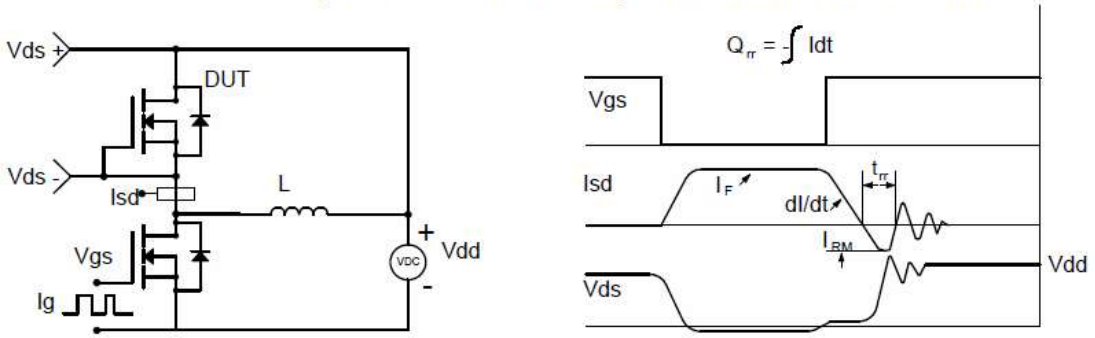
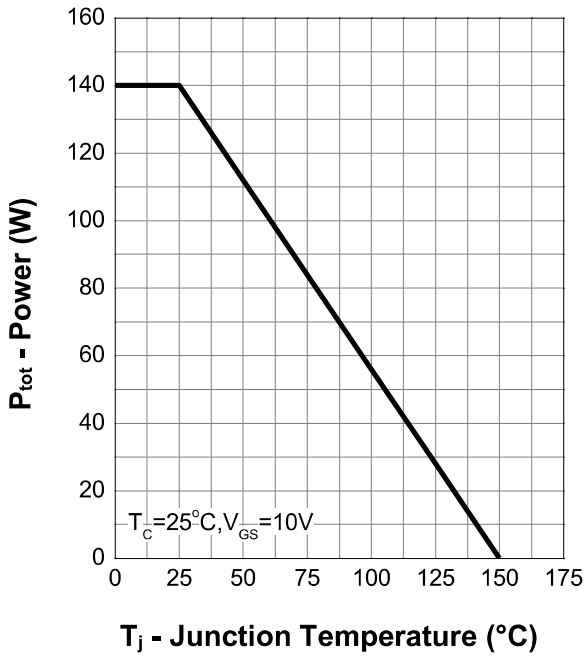


Figure D: Diode Recovery Test Circuit & Waveforms

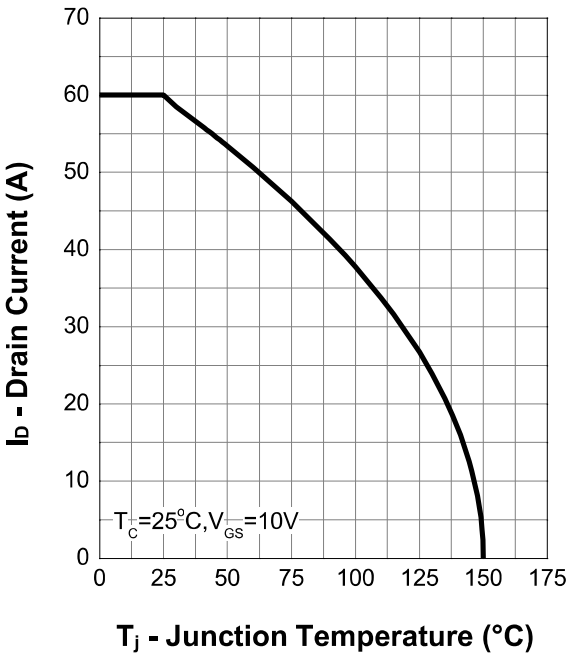


Typical Characteristics (Cont.)

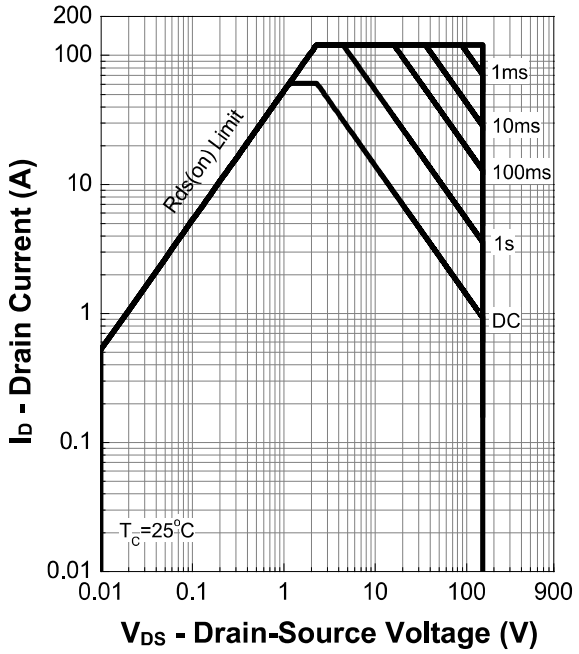
Power Capability



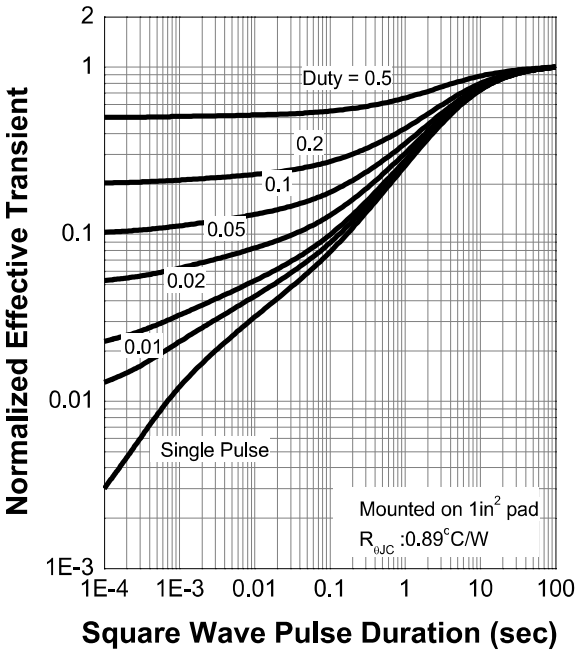
Current Capability



Safe Operatic Area

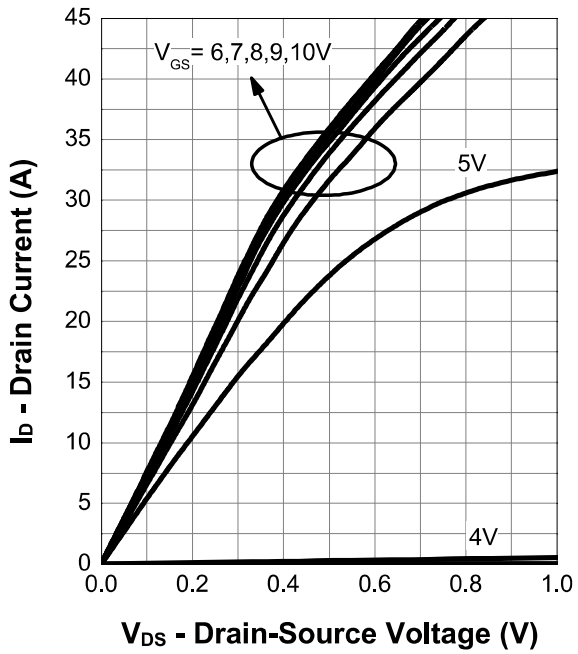


Transient Thermal Impedance

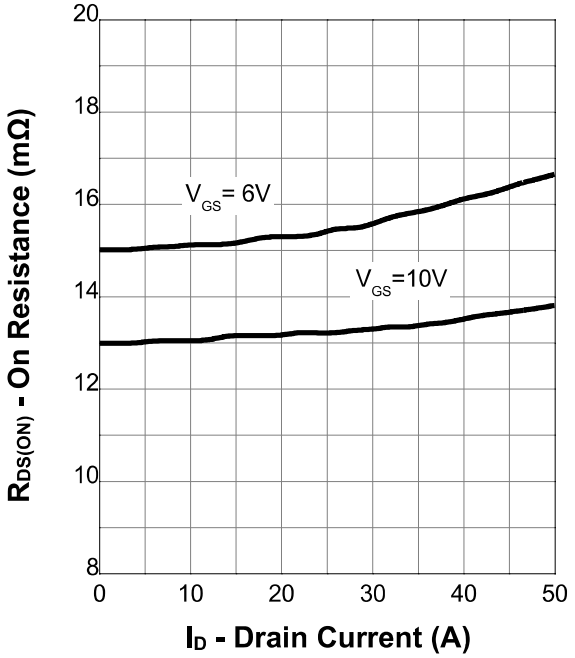


Typical Characteristics (Cont.)

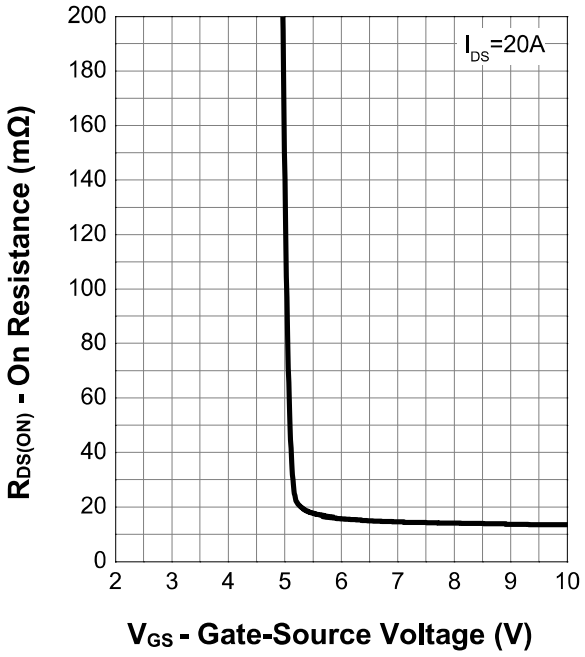
Output Characteristics



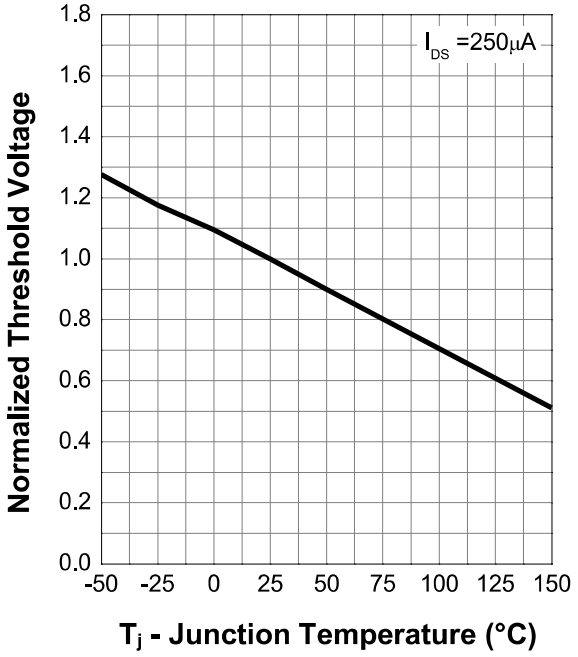
On Resistance



Transfer Characteristics

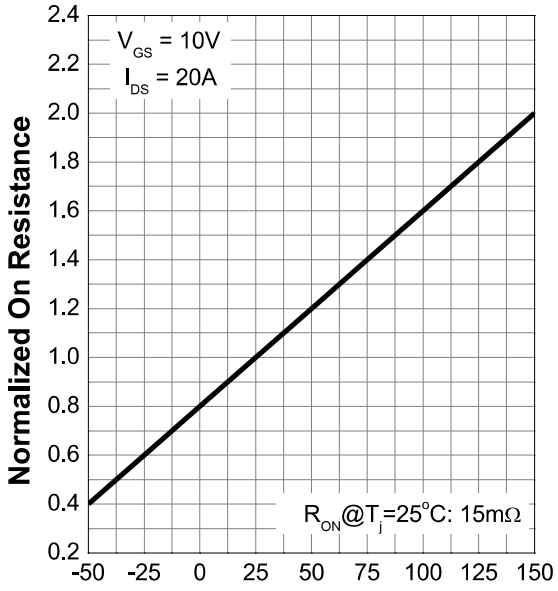


Normalized Threshold Voltage



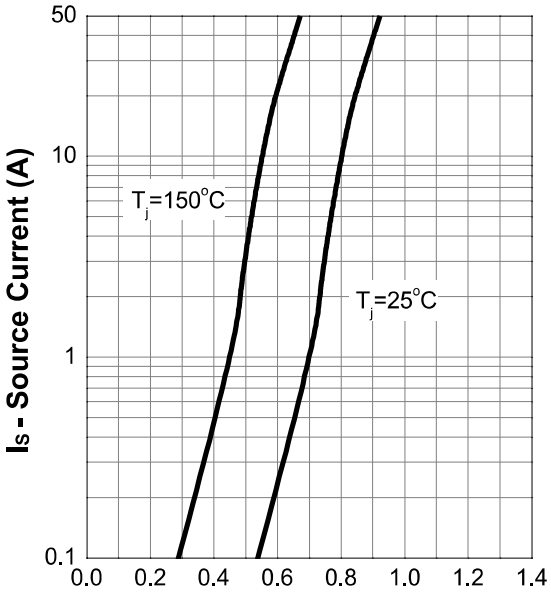
Typical Characteristics (Cont.)

Normalized On Resistance



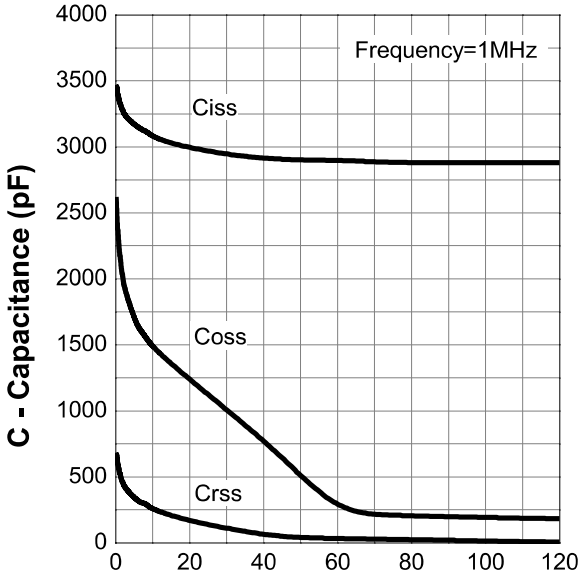
T_j - Junction Temperature (°C)

Diode Forward Current



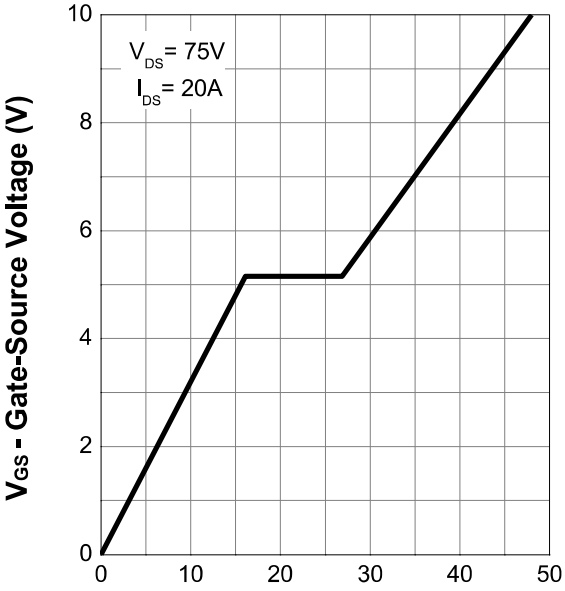
V_{SD} - Source-Drain Voltage (V)

Capacitance



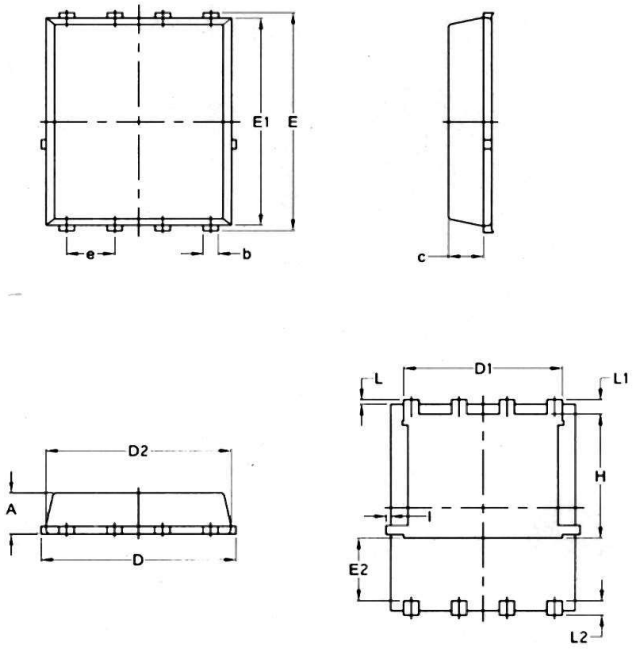
V_{DS} - Drain-Source Voltage (V)

Gate Charge



Q_G - Gate Charge (nC)

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