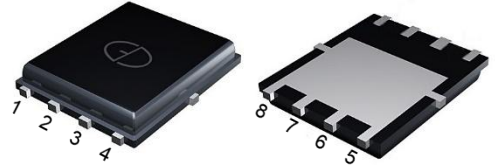


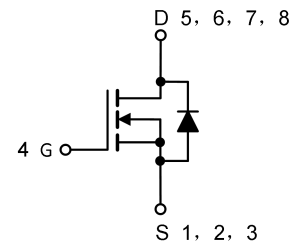
N-Channel 60V (D-S) Power MOSFET

Features

- 100% Avalanche Tested
- Extremely Low Losses with Low FOM $R_{ds(on)} \cdot Q_g$
- Halogen Free, Pb-Free
- RoHS Compliant



PDFN5060



Applications

- DC-DC
- Motors, lamps
- Power switching

Absolute Maximum Ratings ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain Source Voltage	V_{DS}	60	V
Gate Source Voltage	V_{GS}	± 20	V
Drain Current, Continuous $V_{GS}=10\text{V}$ (Note 1)	I_D	33	A
$T_C=25^\circ\text{C}$			
Drain Current, Pulsed (Note 2)	I_{DM}	108	A
Single Avalanche Energy @ $L=0.3\text{mH}$	E_{AS}	84	mJ
Power Dissipation (Note 3)	P_D	39	W
$T_C=25^\circ\text{C}$			
Operating Junction/ Storage Temperature Range	T_J / T_{STG}	-55 to +150	$^\circ\text{C}$

Note 1: Calculated continuous current based on maximum allowable junction temperature.

Note 2: Repetitive rating; pulse width limited by max. junction temperature.

Thermal Characteristics

Parameter	Symbol	Max	Unit
Thermal Resistance Junction to Case (Note 3)	R_{thJC}	3.2	$^\circ\text{C/W}$

Note 3: The power dissipation P_D is based on max. junction temperature, using junction-to-case thermal resistance.

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	--	--	1.0	uA
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _{DS} =250uA	1.0	--	3.0	V
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
Drain-Source On-state Resistance	R _{DS(on)}	V _{GS} =10V, I _D =30A	--	11	17	mΩ
		V _{GS} =4.5V, I _D =20A	--	14	25	
Total Gate Charge	Q _g	I _D = 30A, V _{DS} =30V, V _{GS} = 10V	--	49	--	nC
Gate-Source Charge	Q _{gs}		--	5.8	--	
Gate-Drain Charge	Q _{gd}		--	14	--	
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =30V, I _D =30A, R _G =1.8Ω	--	9	--	ns
Turn-on Rise Time	t _r		--	23	--	
Turn-off Delay Time	t _{d(off)}		--	36	--	
Turn-off Fall Time	t _f		--	6	--	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f=1MHz	--	1895	--	pF
Output Capacitance	C _{oss}		--	102	--	
Reverse Transfer Capacitance	C _{rss}		--	90	--	

Reverse Diode Characteristics (T _J =25°C unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Continuous Source Current (Body Diode)	I _S	T _C =25°C	--	--	33	A
Pulsed Source Current (Body Diode)	I _{SM}		--	--	108	
Diode Forward Voltage	V _{SD}	I _S =30A, V _{GS} =0V	--	--	1.2	V
Reverse Recovery Time	T _{rr}	I _F =30A, di/dt = 100 A/μs	--	26	--	ns
Reverse Recovery Charge	Q _{rr}		--	37	--	nC

Typical Characteristics Curves ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 - Typical Output Characteristics

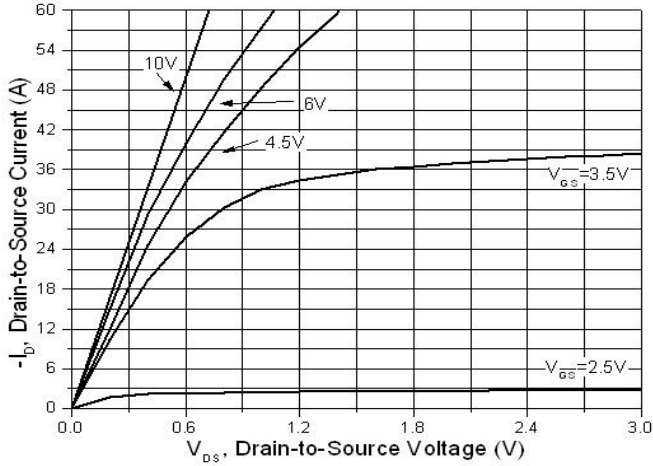


Fig.2 - Transfer Characteristics

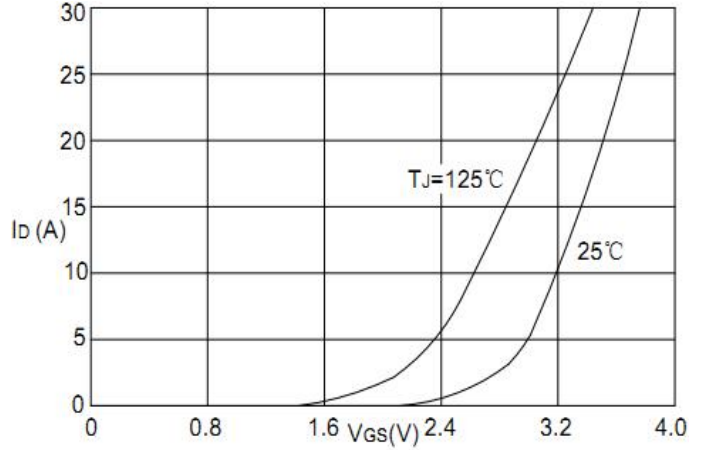


Fig.3 - Gate Charge Characteristics

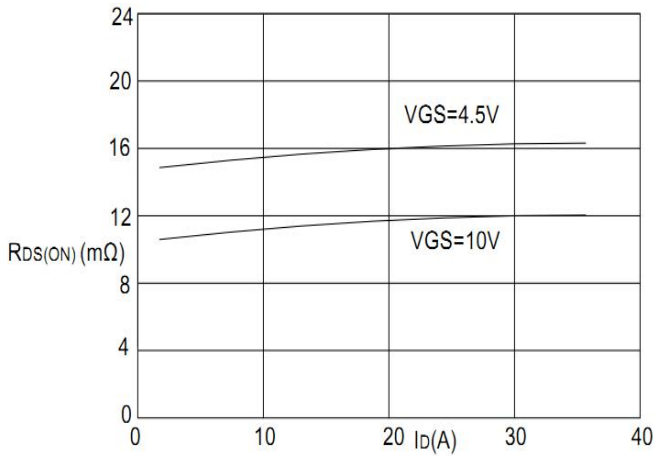


Fig.4 - Body Diode Characteristics

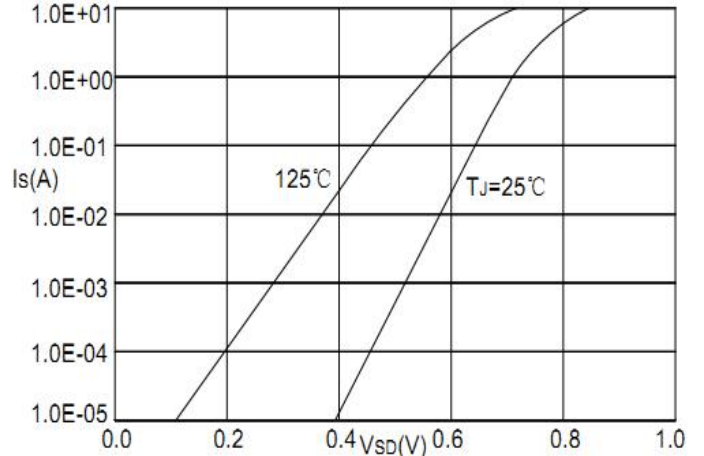


Fig.5 - Gate Charge

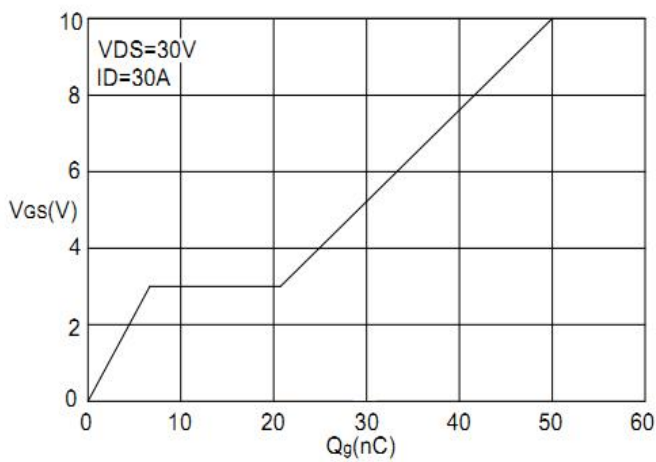
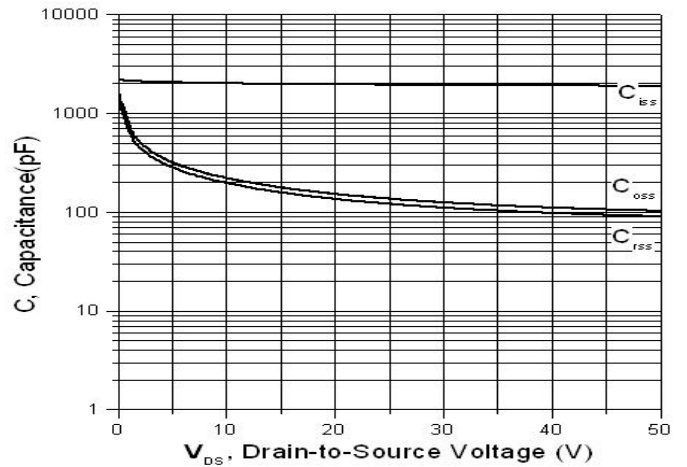


Fig.6 - Capacitance



Typical Characteristics Curves ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Fig.7 - Safe Operating Area

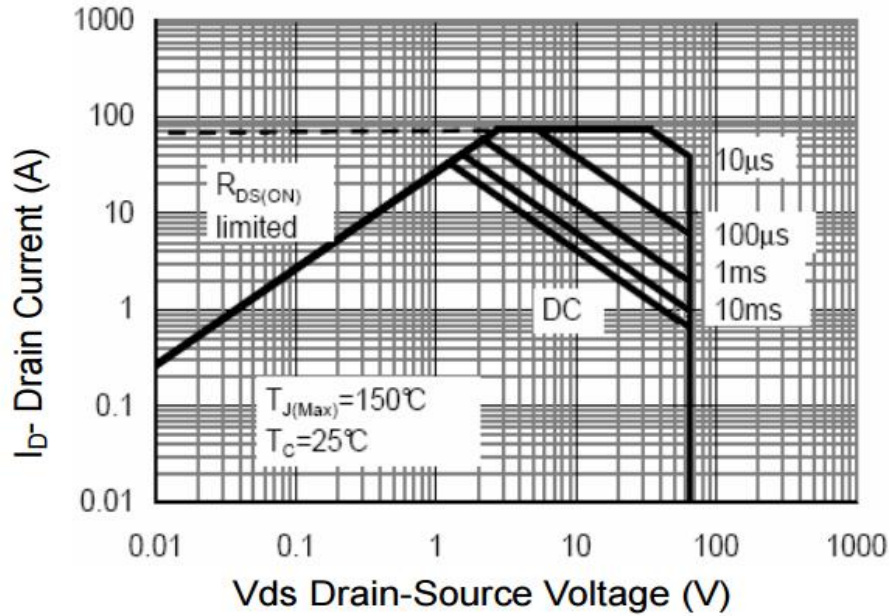
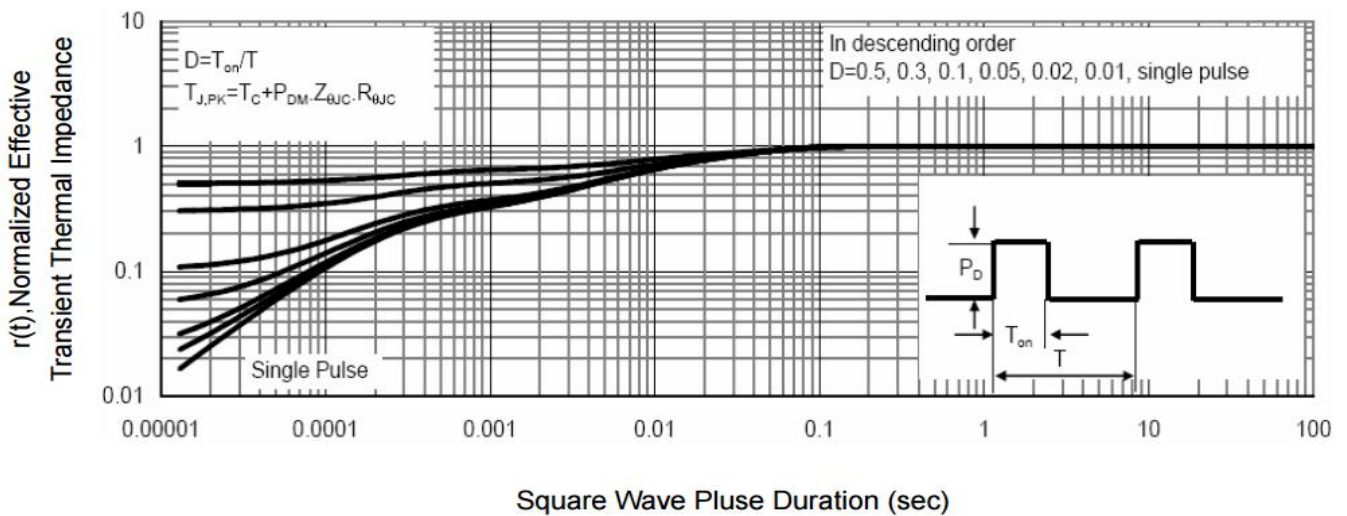
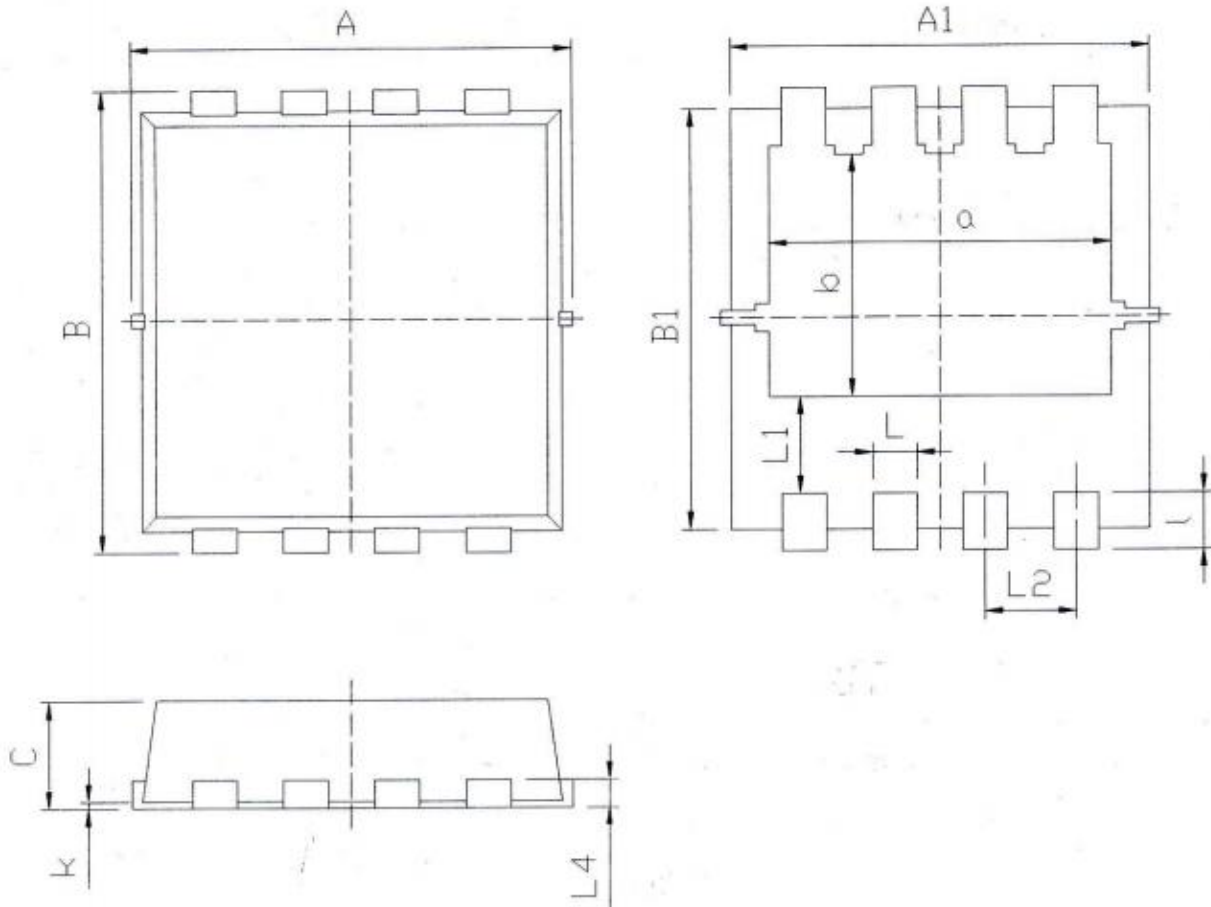


Fig.8 - Normalized Maximum Transient Thermal Impedance



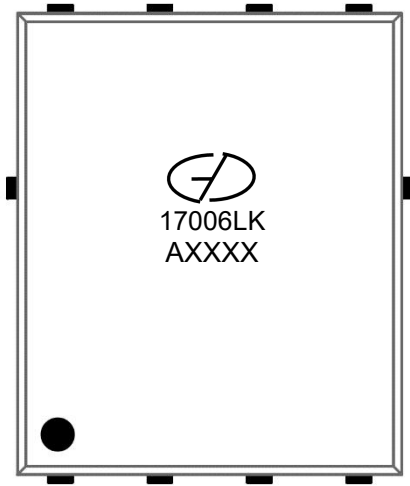
Package Outline Dimensions (Unit: millimeters)

PDFN5060



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	3.20	3.30	3.40
A1	3.10	3.15	3.20
B	3.20	3.30	3.40
B1	2.95	3.00	3.05
C	0.75	0.80	0.85
L	0.25	0.30	0.35
L1	-	-	0.75
L2	0.55	0.65	0.75
L4	0.14	0.15	0.20
a	2.35	2.45	2.55
b	1.635	1.735	1.835
k	0.00	-	0.05
l	0.30	0.40	0.50

Marking Outline



Part Name: AGMN17006LK

1. Logo Mark: 
2. P/N Mark: 17006LK
3. Date Code: AXXXX
4. Pin 1#: ●

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