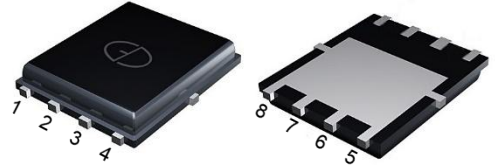


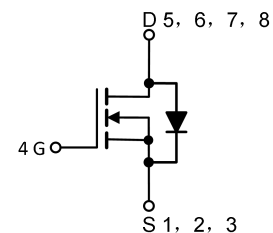
P-Channel -30V (D-S) Power MOSFET

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}	-30	V
Gate Source Voltage	V_{GS}	± 20	V
Drain Current, Continuous $V_{GS}=-10\text{V}$ (Note 1)	I_D	-26	A
$T_C=25^\circ\text{C}$			
Drain Current, Pulsed (Note 2)	I_{DM}	-130	A
Power Dissipation (Note 3)	P_D	69	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}	1.8	$^\circ\text{C/W}$

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

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$	--	--	1.0	μA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_{DS}=-250\mu A$	-1	--	-3	V
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-8A$	--	10	14	m Ω
		$V_{GS}=-4.5V, I_D=-4A$	--	15	19	
Total Gate Charge	Q_g	$I_D = -20A, V_{DS}=-15V, V_{GS} = -10V$	--	50	--	nC
Gate-Source Charge	Q_{gs}		--	7	--	
Gate-Drain Charge	Q_{gd}		--	10	--	
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-10V, V_{DD}=-10V, I_D=-20A, R_G=3\Omega$	--	17.6	--	ns
Turn-on Rise Time	t_r		--	34.1	--	
Turn-off Delay Time	$t_{d(off)}$		--	24.9	--	
Turn-off Fall Time	t_f		--	19.8	--	
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=-20V, f=1MHz$	--	2020	--	pF
Output Capacitance	C_{oss}		--	242	--	
Reverse Transfer Capacitance	C_{rss}		--	229	--	

Reverse Diode Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Current, Continuous	I_{SD}	$T_C=25^\circ\text{C}$	--	--	-26	A
Pulsed Source Current	I_{SP}		--	--	-130	A
Diode Forward Voltage	V_{SD}	$I_F=-20A, V_{GS}=0V$	--	--	-1.2	V

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

Fig.1 - Typical Output Characteristics

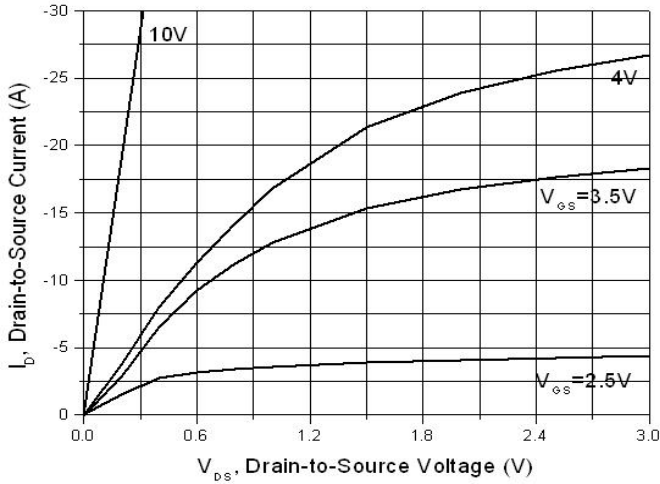


Fig.2 - Normalized $V_{GS(th)}$ vs. Junction Temperature

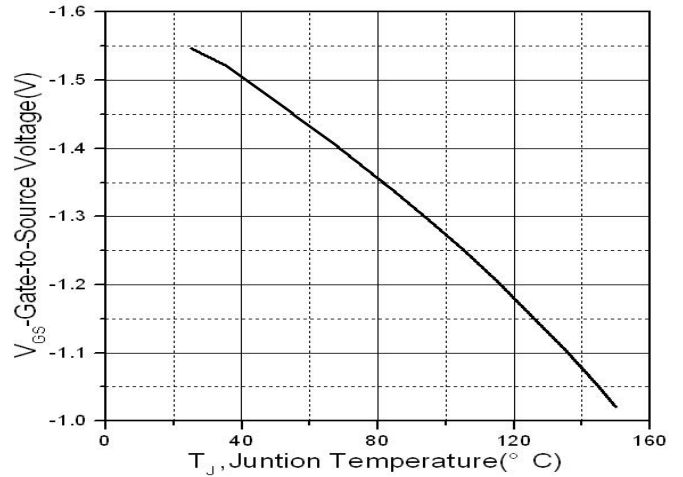


Fig.3 - Normalized On-Resistance vs. Junction Temperature

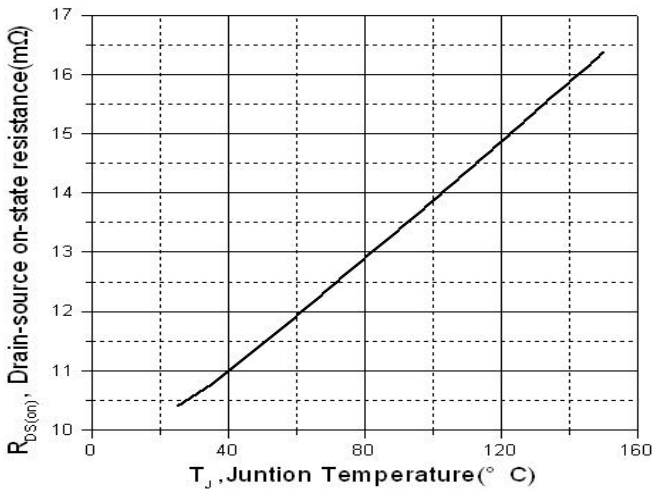


Fig.4 - Drain-to-Source Breakdown Voltage vs. Junction Temperature

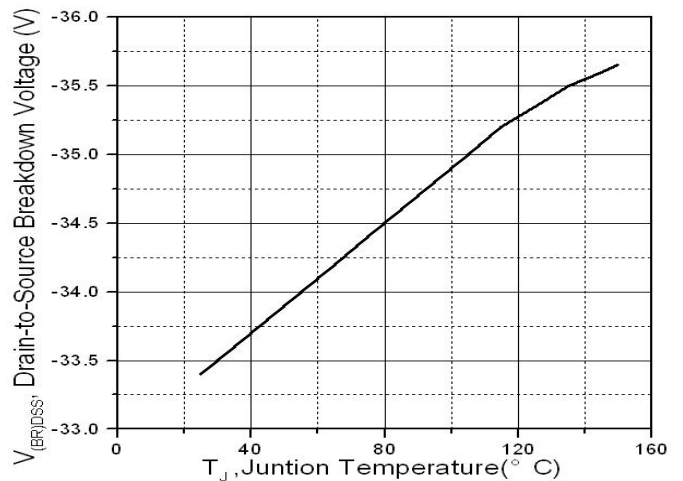
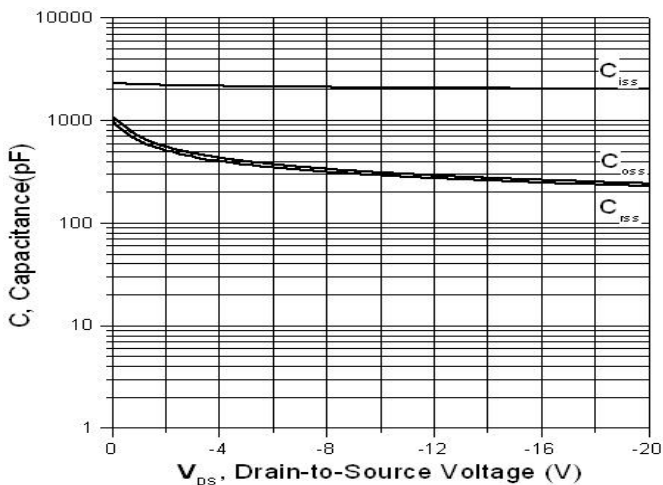
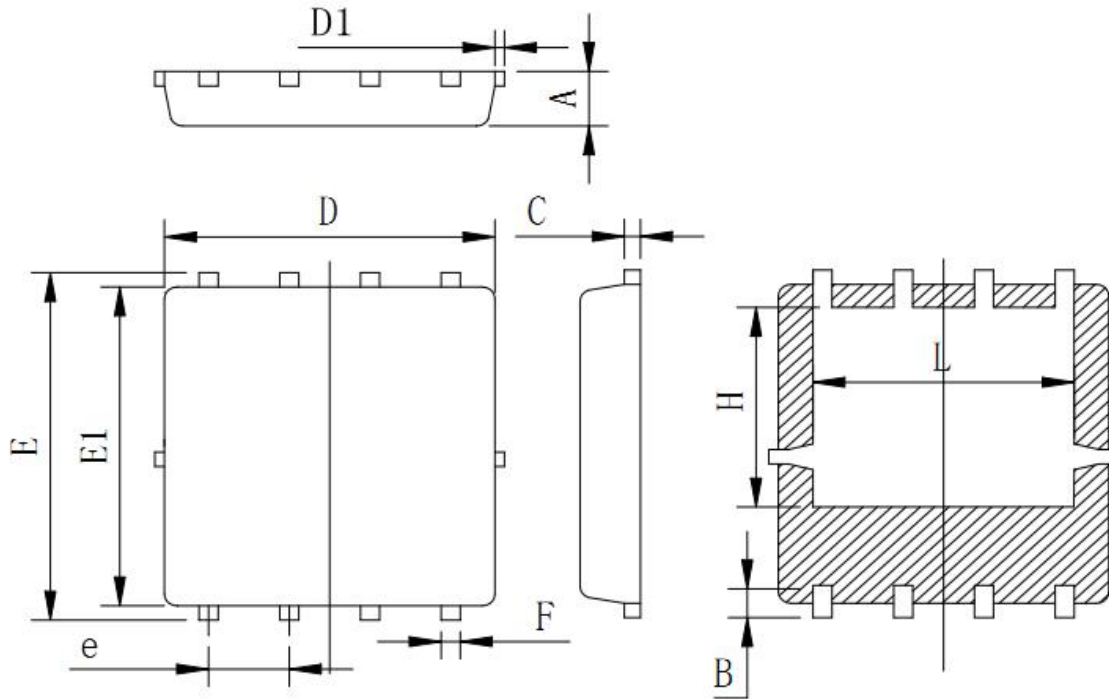


Fig.5 - Capacitance Characteristics



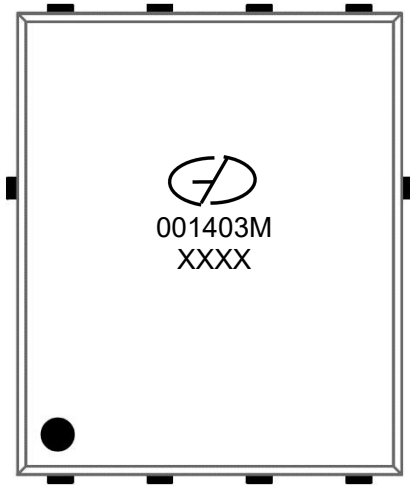
Package Outline Dimensions (Unit: millimeters)

PDFN5060



Symbol	Min	Typ	Max
A	0.90	0.95	1.00
B	0.48	0.58	0.68
C	0.20	0.254	0.30
D	5.00	5.20	5.40
D1			0.15
E	5.90	6.05	6.20
E1	5.40	5.55	5.70
e	1.22	1.27	1.32
F	0.25	0.30	0.35
H	3.27	3.47	3.67
L	3.80	4.00	4.20

Marking Outline



Part Name: GMP01403M

1. Logo Mark: 
2. P/N Mark: 001403M
3. Date Code: XXXX
4. Pin 1#: ●

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