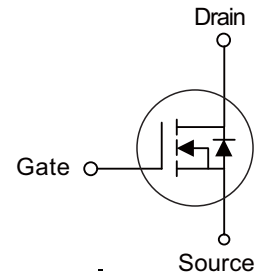


■ PRODUCT CHARACTERISTICS

$V_{DSS}$	60	V
$R_{DS(ON)-Typ@VGS=10V}$	23	m $\Omega$
$R_{DS(ON)-Typ@VGS=4.5V}$	30	m $\Omega$
$I_D$	30	A

Symbol



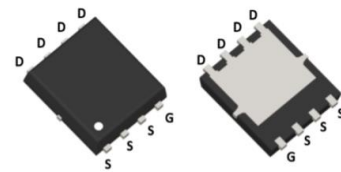
■ APPLICATIONS

- Portable Equipment and Battery Powered systems.
- Power Management in Notebook Computer

■ FEATURES

- Lower  $R_{DS(ON)}$  to Minimize Conduction Losses
- Reliable and Rugged
- ROHS Compliant & Halogen-Free
- 100% UIS and Rg Tested

PDFN5060-8L



■ ABSOLUTE MAXIMUM RATINGS ( $T_J=25^\circ\text{C}$  Unless Otherwise Noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	60	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current	Continuous	$I_D$	30	A
	Pulsed	$I_{DM}$	60	A
Avalanche Energy	Single Pulsed	$E_{AS}$	26.9	mJ
Peak Diode Recovery dv/dt		dv/dt	2.26	V/ns
Power Dissipation		$P_D$	25	W
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature Range		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

■ THERMAL CHARACTERISTICS

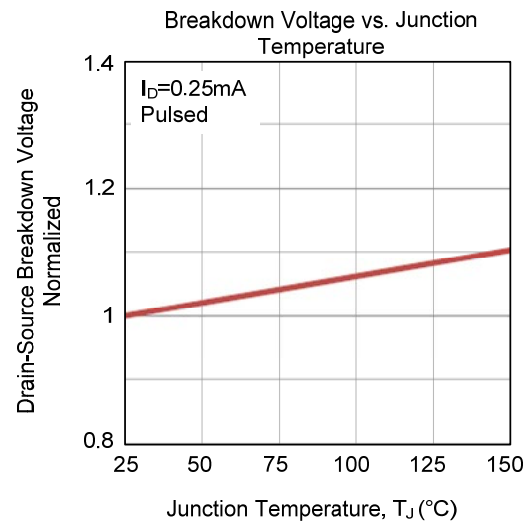
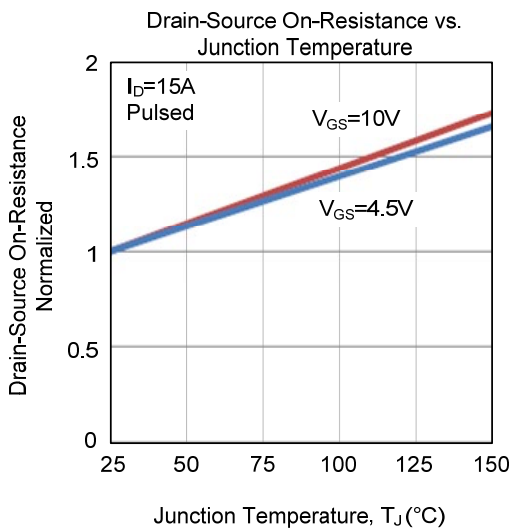
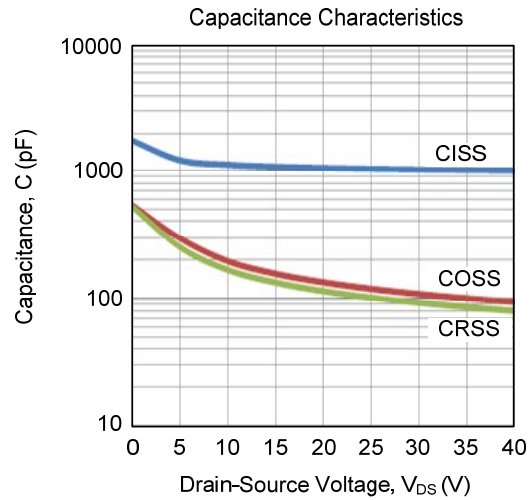
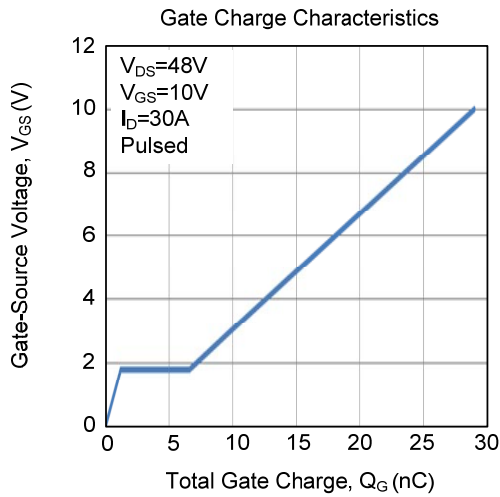
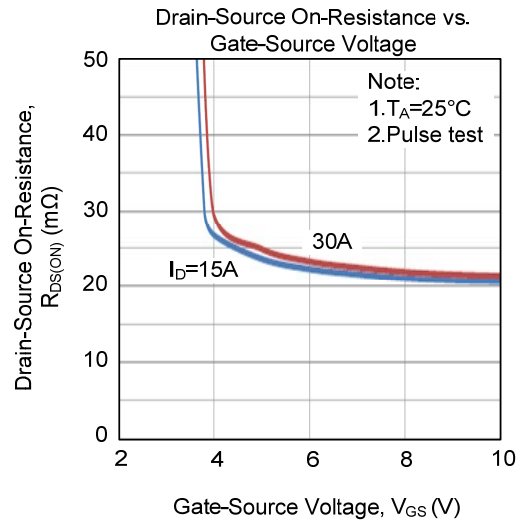
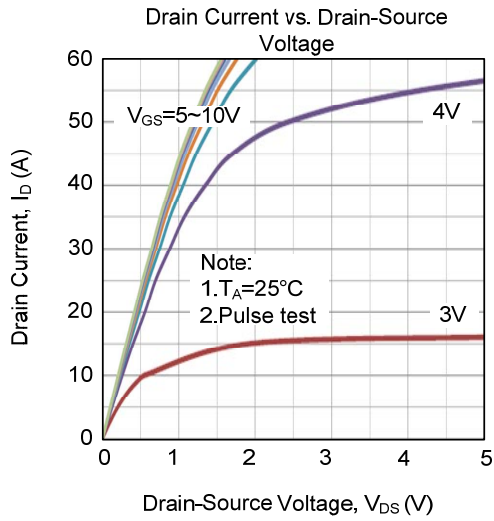
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	65	$^\circ\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	4.9	$^\circ\text{C}/\text{W}$



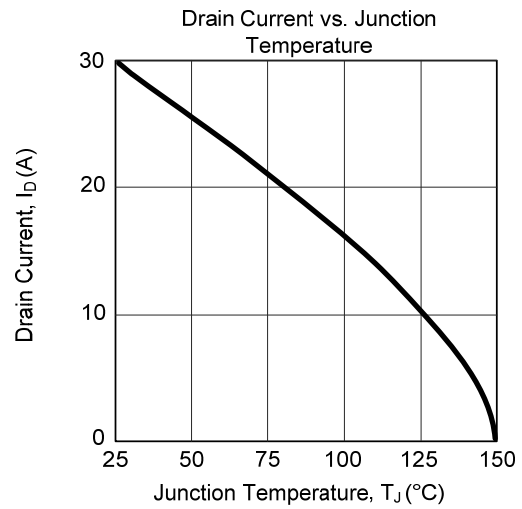
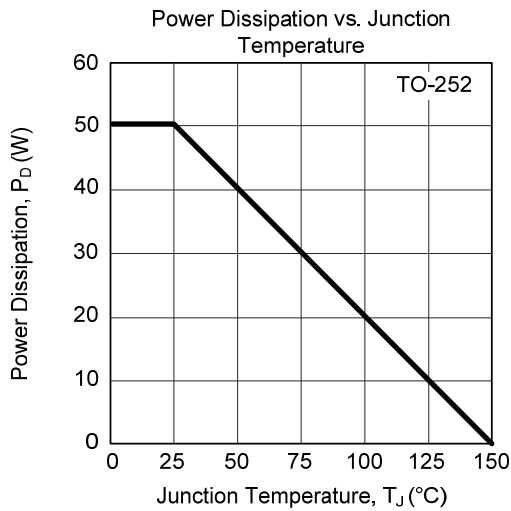
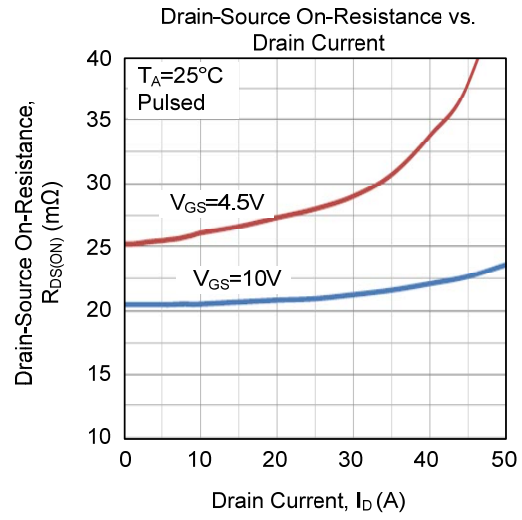
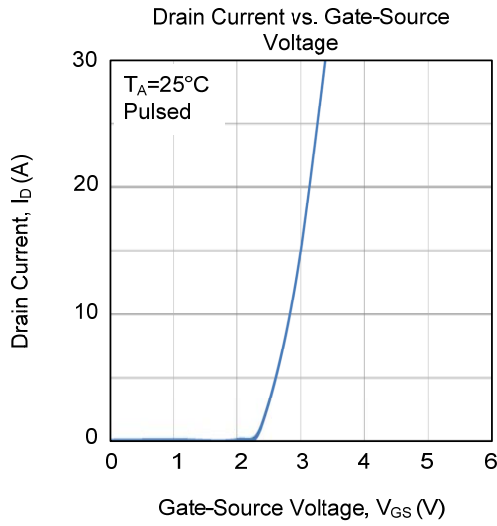
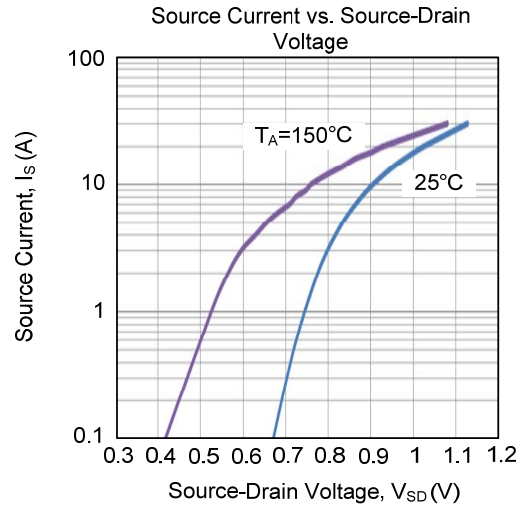
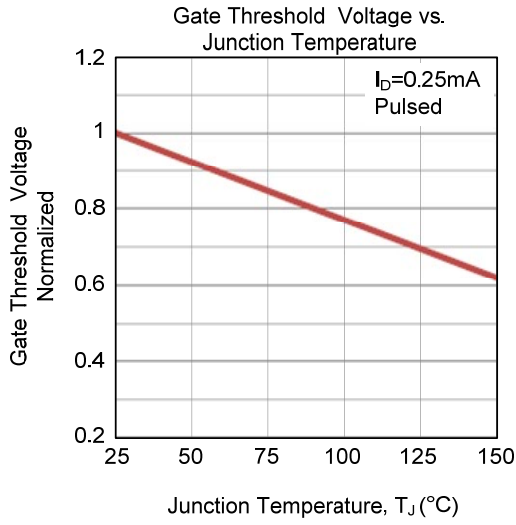
■ ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V	60			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
Gate-Source Leakage Current	Forward	I <sub>GSS</sub>			+100	nA
	Reverse					
		V <sub>GS</sub> =-20V, V <sub>DS</sub> =0V			-100	nA
On characteristics						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0		3.0	V
Static Drain-Source On-State Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =15A			30	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =15A			40	mΩ
Dynamic characteristics						
Input Capacitance	C <sub>ISS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V, f=1.0MHz		1020		pF
Output Capacitance	C <sub>OSS</sub>			118		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			101		pF
Switching characteristics						
Total Gate Charge	Q <sub>G</sub>	V <sub>DS</sub> =48V, V <sub>GS</sub> =10V, I <sub>D</sub> =30A, I <sub>G</sub> =1mA (Note 1, 2)		29		nC
Gate to Source Charge	Q <sub>GS</sub>			1.2		nC
Gate to Drain Charge	Q <sub>GD</sub>			5.4		nC
Turn-on Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> =30V, V <sub>GS</sub> =10V, I <sub>D</sub> =30A, R <sub>G</sub> =3Ω (Note 1, 2)		4.8		ns
Rise Time	t <sub>R</sub>			16.6		ns
Turn-off Delay Time	t <sub>D(OFF)</sub>			28		ns
Fall-Time	t <sub>F</sub>			19		ns
Source-drain diode ratings and characteristics						
Maximum Body-Diode Continuous Current	I <sub>S</sub>				30	A
Maximum Body-Diode Pulsed Current	I <sub>SM</sub>				60	A
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =30A, V <sub>GS</sub> =0V			1.4	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>S</sub> =30A, V <sub>GS</sub> =0V,		32		ns
Reverse Recovery Charge	Q <sub>rr</sub>	di <sub>F</sub> /dt =100A/μs		58		nC

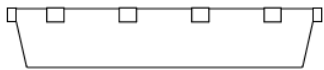
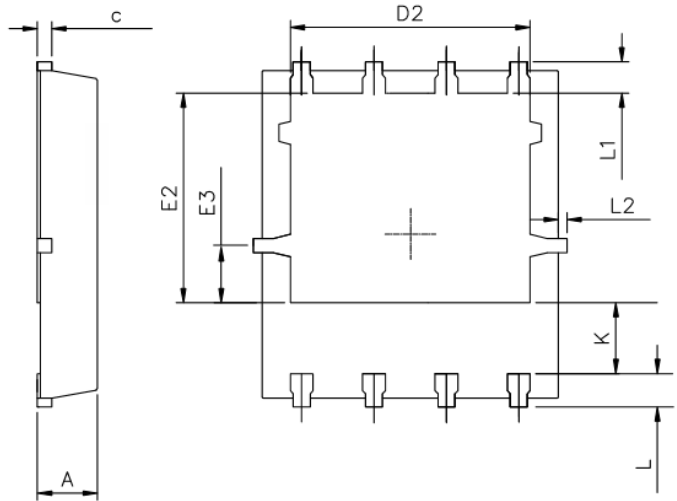
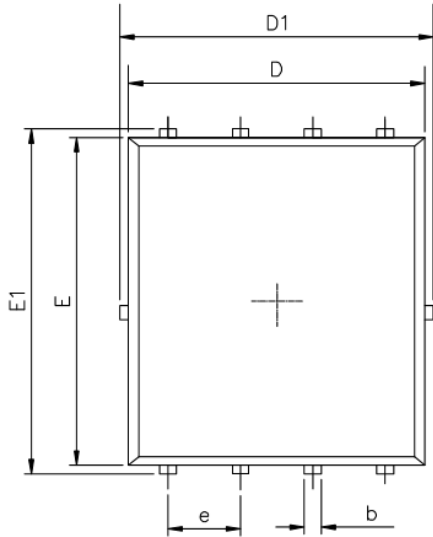
■ TYPICAL CHARACTERISTICS



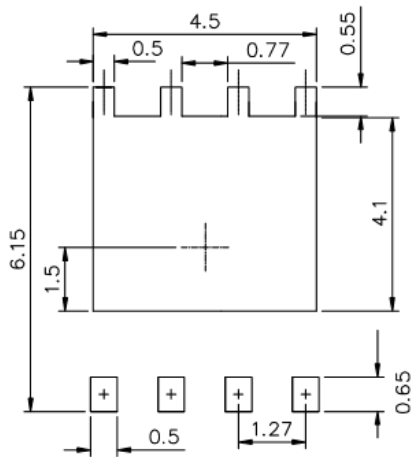
■ TYPICAL CHARACTERISTICS(Cont.)



■ PDFN5060-8L Package Mechanical Data



RECOMMENDED LAND PATTERN



UNIT:mm

	MIN	NOM	MAX
A	0.90	1.00	1.10
b	0.25	0.35	0.50
c	0.10	0.20	0.30
D	4.80	5.00	5.30
D1	4.90	5.10	5.50
D2	3.92	4.02	4.20
E	5.65	5.75	5.85
E1	5.90	6.05	6.20
E2	3.325	3.525	3.775
E3	0.80	0.90	1.00
e		1.27	
L	0.40	0.55	0.70
L1		0.65	
L2	0.00		0.15
K	1.00	1.30	1.50

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