

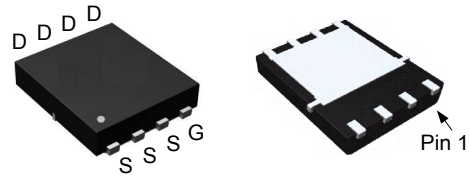
Features

- -30V/-68A,
 $R_{DS(ON)} = 7m\Omega(\text{typ.}) @ V_{GS} = -10V$
 $R_{DS(ON)} = 11m\Omega(\text{typ.}) @ V_{GS} = -4.5V$
- Reliable and Rugged
- Lead Free and Green Devices Available
 (RoHS Compliant)

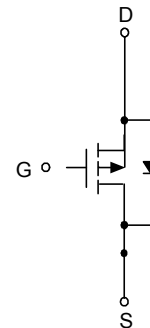
Applications

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

Pin Description



PDFN5*6-8L



P-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		-30	V
V _{GSS}	Gate-Source Voltage		±25	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
I _S	Diode Continuous Forward Current	T _C =25°C	-68	A
I _D	Continuous Drain Current	T _C =25°C	-68	
		T _C =100°C	-51	
I _{DM} ^a	Pulsed Drain Current	T _C =25°C	-204	
P _D	Maximum Power Dissipation	T _C =25°C	62.5	W
		T _C =100°C	25	
R _{θJC}	Thermal Resistance-Junction to Case	Steady State	2	°C/W
R _{θJA} ^c	Thermal Resistance-Junction to Ambient	t ≤ 10s	20	°C/W
		Steady State	55	
I _{AS} ^b	Avalanche Current, Single pulse	L=0.5mH	24	A
E _{AS} ^b	Avalanche Energy, Single pulse	L=0.5mH	144	mJ

Note a : Pulse width is limited by max. junction temperature.

Note b : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature $T_J=25^\circ\text{C}$).

Note c : Surface mounted on 1in^2 pad area.

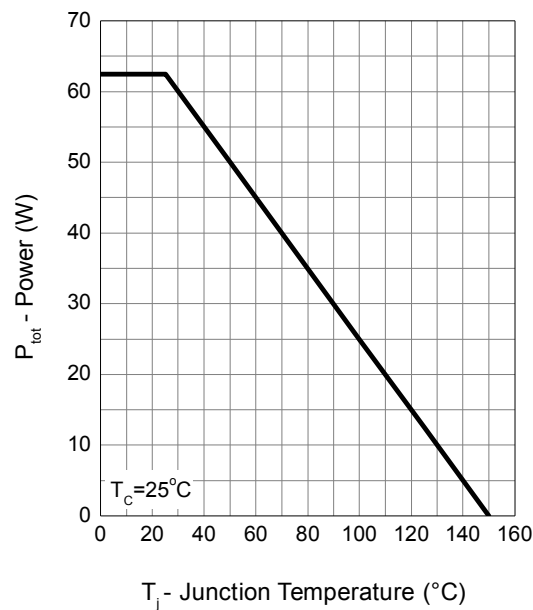
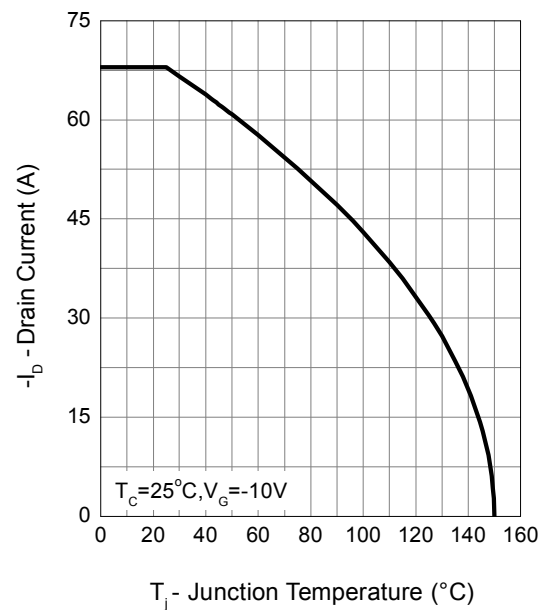
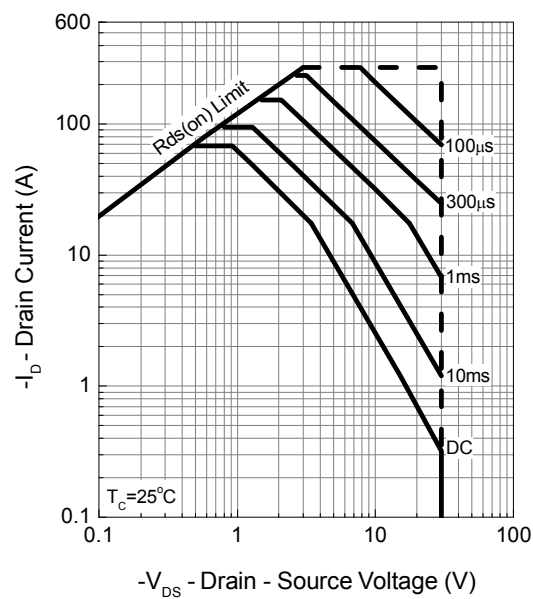
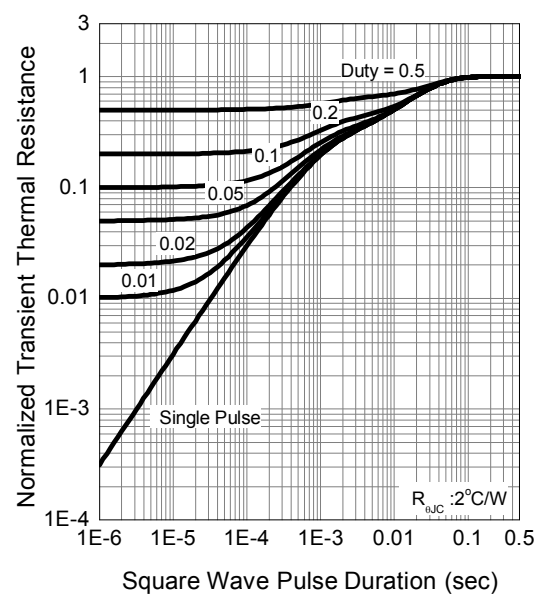
Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V	-	-	-1	μA
		T _J =85°C	-	-	-30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1.3	-1.8	-2.3	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^d	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-20A	-	7	9	mΩ
		V _{GS} =-4.5V, I _{DS} =-10A	-	11	15	
Diode Characteristics						
V _{SD} ^d	Diode Forward Voltage	I _{SD} =-1A, V _{GS} =0V	-	-0.7	-1	V
t _{rr} ^e	Reverse Recovery Time	I _{SD} =-20A, dI _{SD} /dt=100A/μs	-	16	-	ns
Q _{rr} ^e	Reverse Recovery Charge		-	5	-	nC
Dynamic Characteristics ^e						
R _g	Gate Resistance	V _{GS} =0V, V _{DS} =0V,F=1MHz	-	8	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V, Frequency=1.0MHz	-	2180	-	pF
C _{oss}	Output Capacitance		-	460	-	
C _{rss}	Reverse Transfer Capacitance		-	360	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-15V, R _L =15Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	12	-	ns
t _r	Turn-on Rise Time		-	12	-	
t _{d(OFF)}	Turn-off Delay Time		-	109	-	
t _f	Turn-off Fall Time		-	68	-	
Gate Charge Characteristics ^e						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _{DS} =-20A	-	47	-	nC
Q _{gs}	Gate-Source Charge		-	3	-	
Q _{gd}	Gate-Drain Charge		-	15	-	

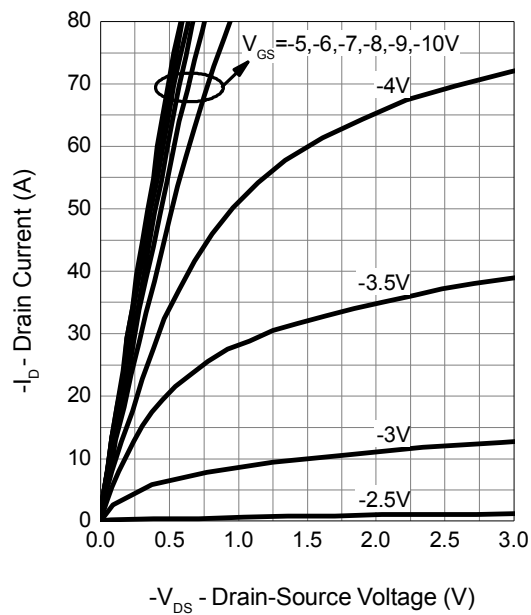
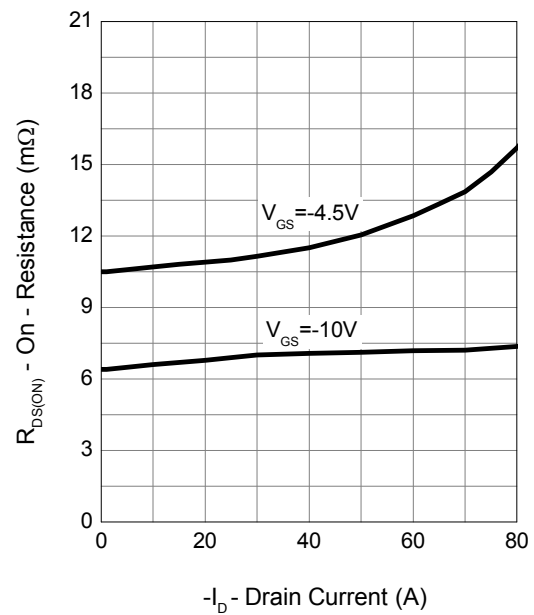
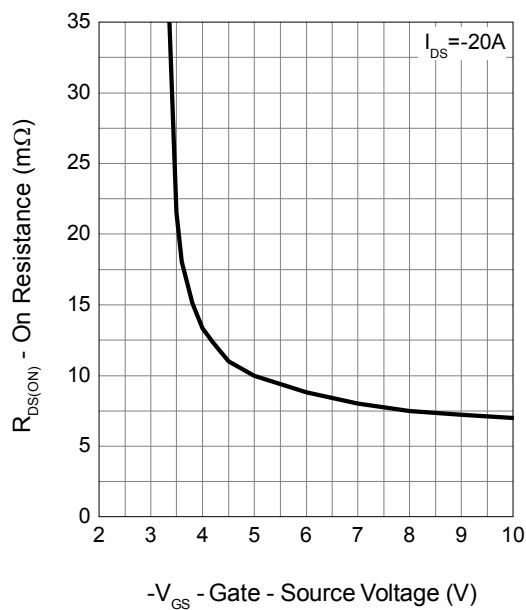
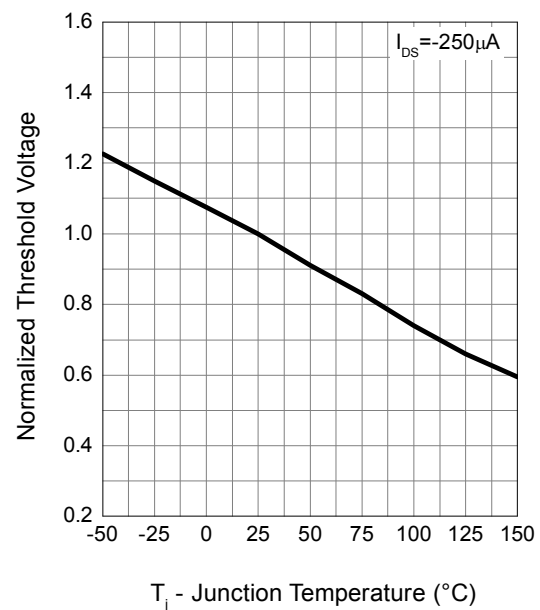
Note d : Pulse test ; pulse width≤300μs, duty cycle≤2%.

Note e : Guaranteed by design, not subject to production testing.

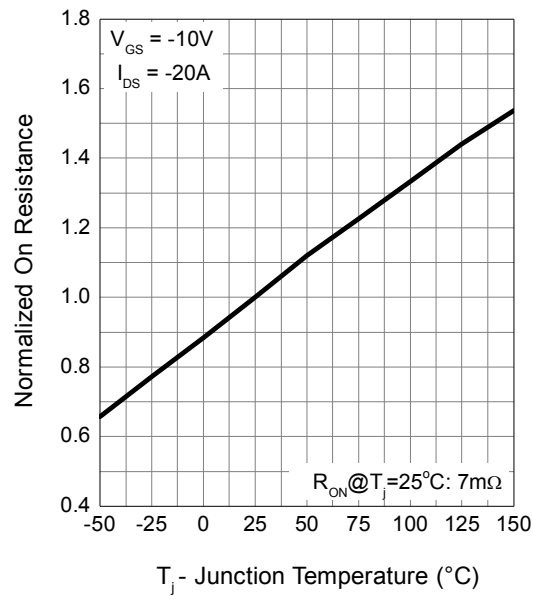
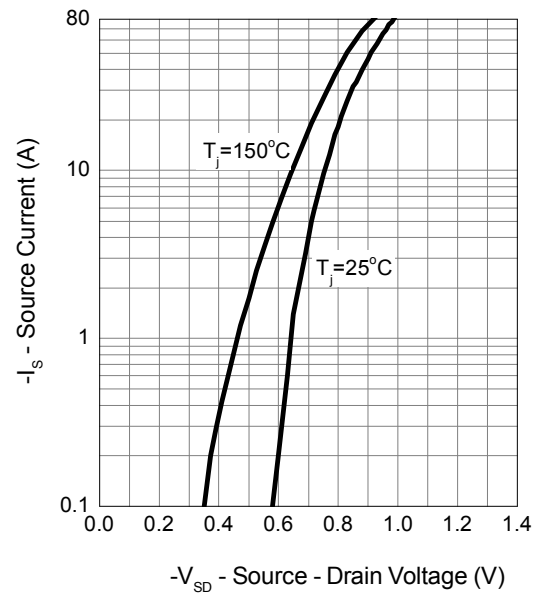
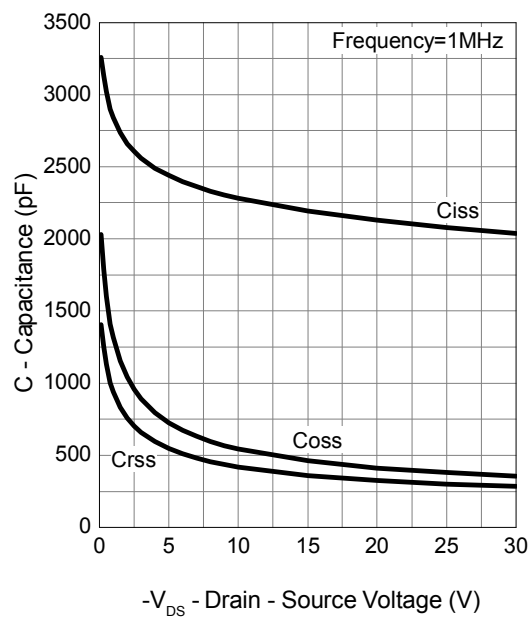
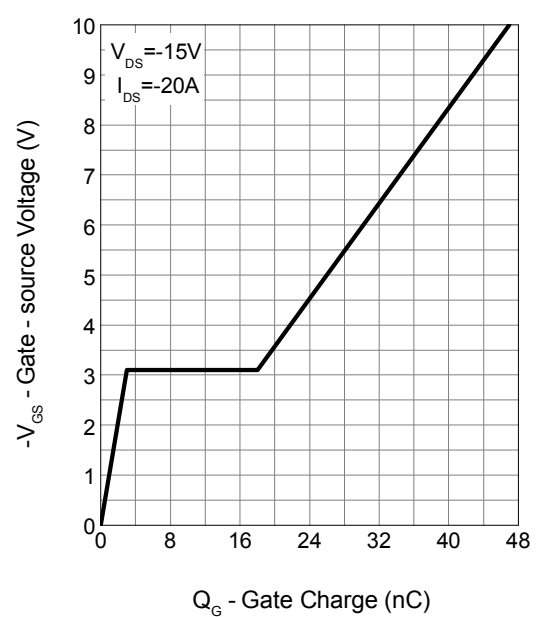
Typical Operating Characteristics

Power Dissipation

Drain Current

Safe Operation Area

Thermal Transient Impedance


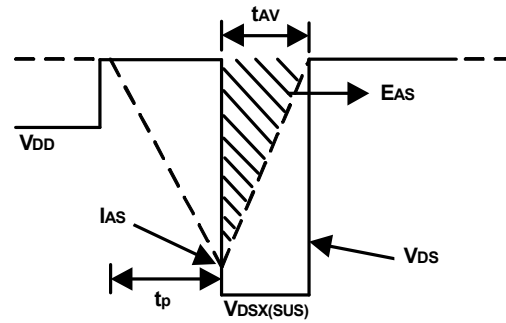
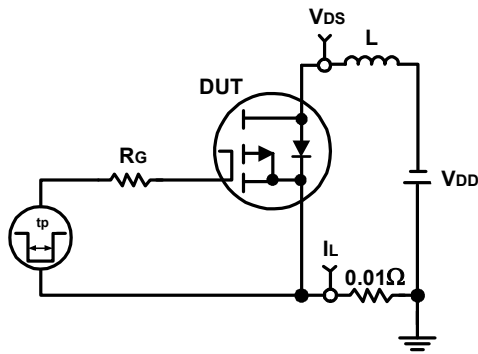
Typical Operating Characteristics (Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


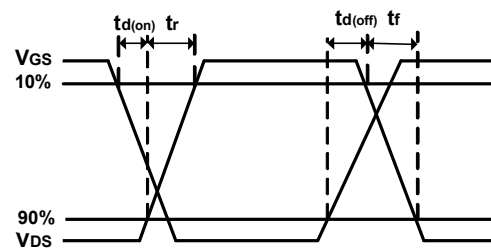
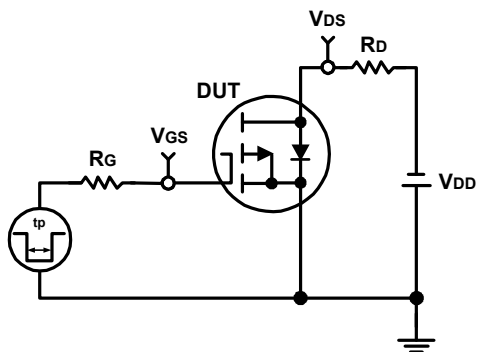
Typical Operating Characteristics (Cont.)

Drain-Source On Resistance

Source-Drain

Capacitance

Gate Charge


Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



PDFN5*6-8L OUTLINE

