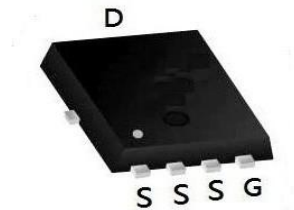
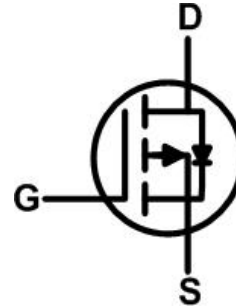
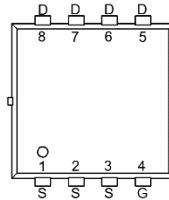


30V P-Channel MOSFET



PDFN 3*3-8L

Marking : RU30L30



Product Summary

- $V_{DS}=-30V, I_D=-35A$
- $R_{DS(ON)}=11.5m\Omega$ (TYP.) $V_{GS}=-10V, I_D=-10A$
- $R_{DS(ON)}=17.5m\Omega$ (TYP.) $V_{GS}=-4.5V, I_D=-5A$
- Fast Switching
- Low On-Resistance
- Halogen and Antimony Free, Rohs compliant

Applications

- Switch switching
- Power management in portable/desktop PCs

Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	-30	V
Gate-Source Voltage ($V_{GS}=0V$, static)	V_{GS}	± 25	V
Continuous Drain Current ($T_C=25^\circ C$)	I_D	-35	A
Continuous Drain Current ($T_C=100^\circ C$)		-26	A
Pulsed Drain Current	I_{DM}	-140	A
Avalanche Current ($L=0.3mH$)	I_{AS}	22.5	A
Avalanche Energy, Single Pulsed	E_{AS}	75	mJ
Maximum Power Dissipation ($T_C=25^\circ C$)	P_D	39	W
Maximum Power Dissipation ($T_C=100^\circ C$)		15	W
Operating, Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	μA
Gate -Source Leakage Current	I_{GSS}	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.1	-1.5	-1.9	V
Drain-Source On-stage Resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-10A$	-	11.5	17	m Ω
		$V_{GS}=-4.5V, I_D=-5A$	-	17.5	25	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	-	1380	-	pF
Output capacitance	C_{oss}		-	160	-	
Reverse transfer capacitance	C_{rss}		-	145	-	
Gate Resistance	R_g	$f=1MHz$	-	7	-	Ω
Total Gate Charge	Q_g	$V_{DS}=-15V$ $V_{GS}=-10V$	-	26.4	-	nC
Gate Source Charge	Q_{gs}		-	6	-	
Gate Drain Charge	Q_{gd}		-	4.3	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_L=1\Omega$ $R_G=3\Omega$	-	18	-	ns
Rise time	t_r		-	22	-	
Turn-off delay Time	$t_{d(off)}$		-	55	-	
Fall time	t_f		-	42	-	

Reverse Diode Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=-1A$	-	-0.75	-1	V
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=-10A$ $dI/dt=100A/\mu s$	-	32	-	ns
Reverse Recovery Charge	Q_{rr}		-	28	-	nC

Typical Characteristics

Figure 1. On-Regin Characteristics

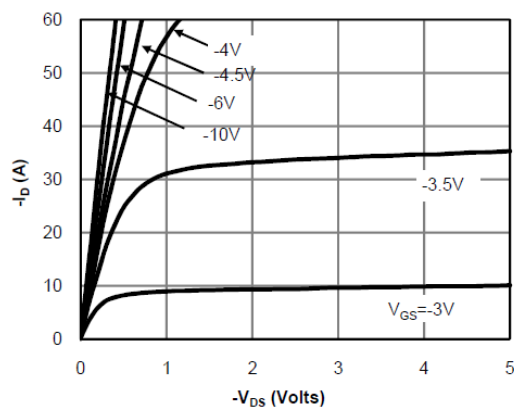


Figure 2. Transfer Characteristics

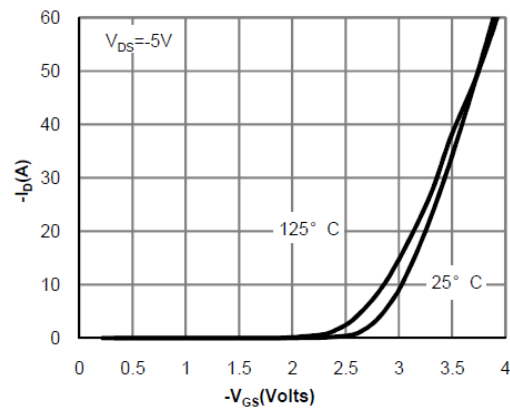


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

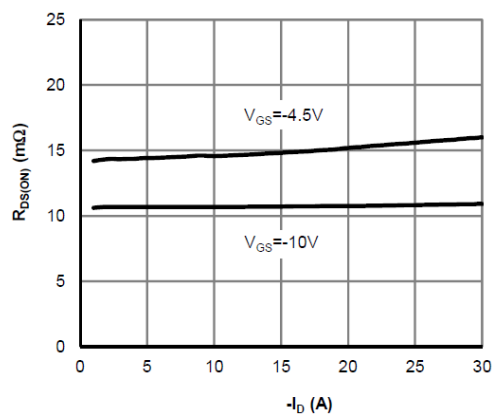


Figure 4. On-Resistance vs. Junction Temperature

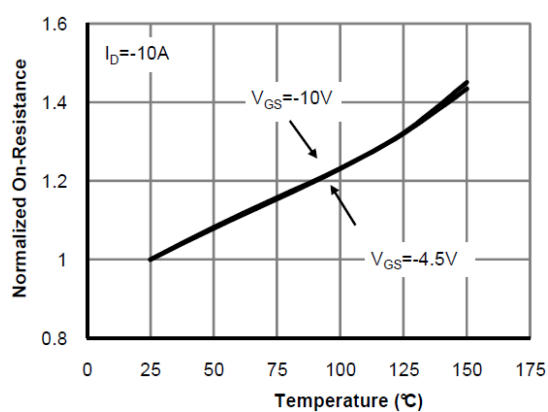


Figure 5. On-Resistance vs. Gate-Source Voltage

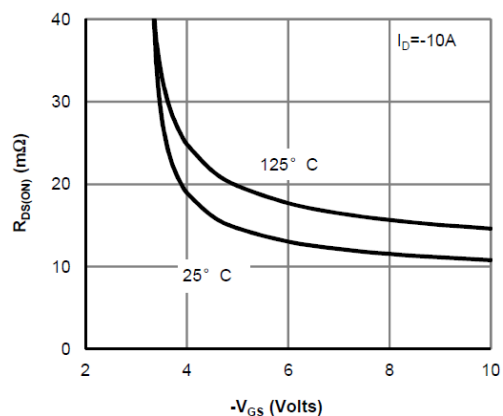


Figure 6. Body-Diode Characteristics

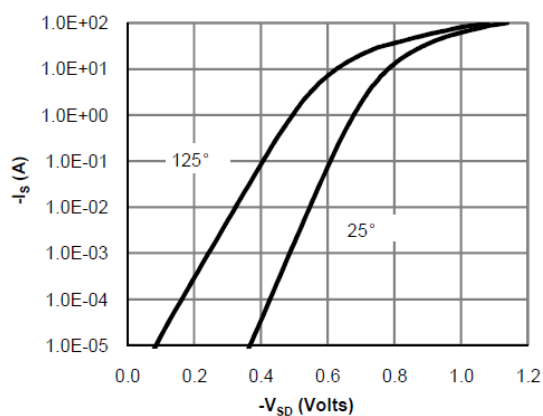


Figure 7. Gate-Charge Characteristics

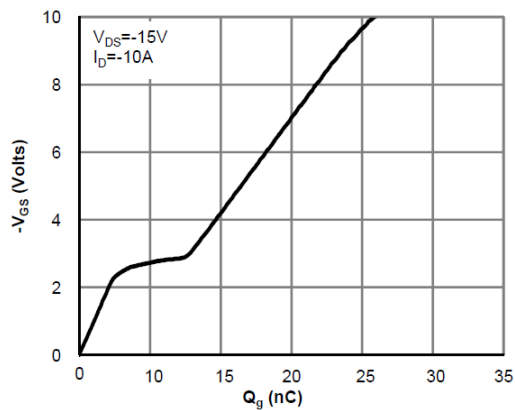


Figure 8. Capacitance Characteristics

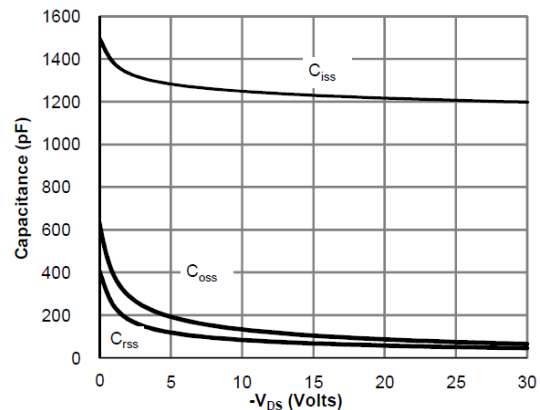


Figure 9. Maximum Forward Biased Safe Operating Area

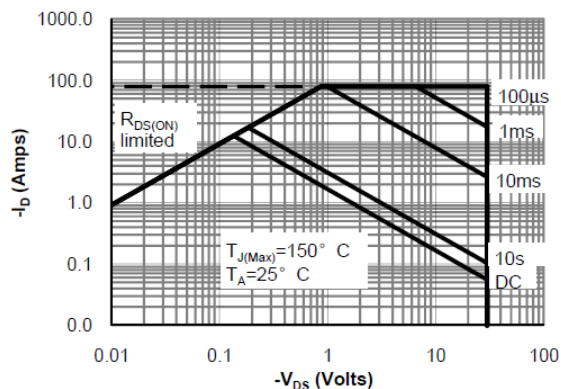


Figure 10. Single Pulse Power Rating Junction-to-Ambient

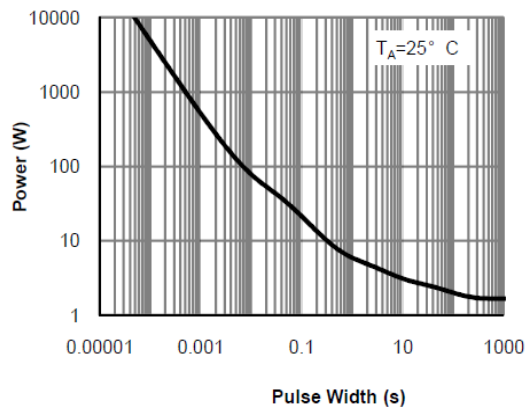
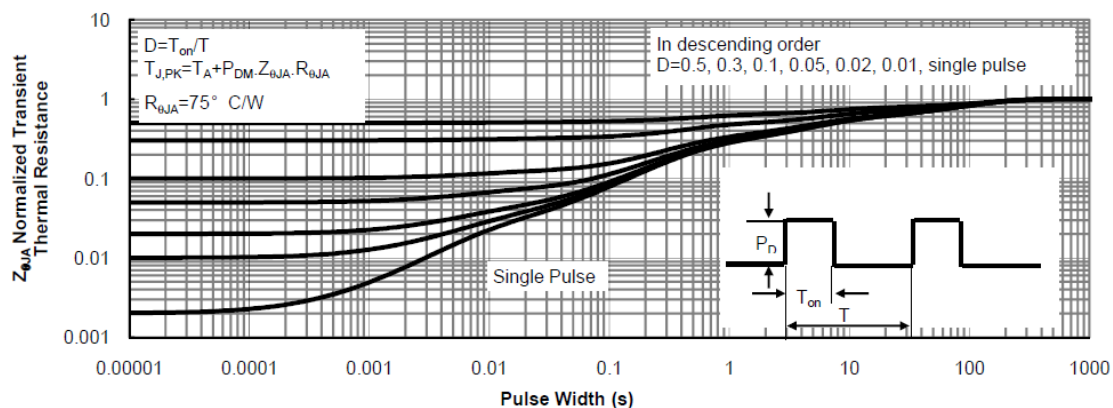
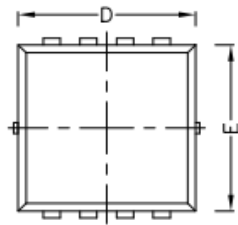


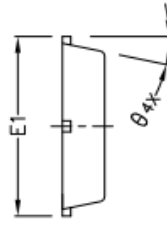
Figure 11. Normalized Maximum Transient Thermal Impedance



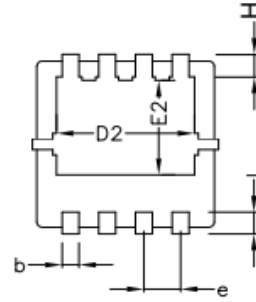
PDFN 3*3-8L Package Outline Dimensions



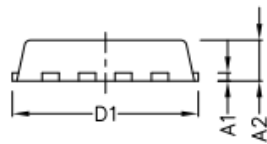
TOP VIEW



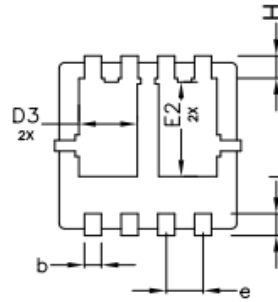
SIDE VIEW



BOTTOM VIEW
OPTION 1



SIDE VIEW



BOTTOM VIEW
OPTION 2

COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A1	0.152 BSC		
A2	0.700	0.800	0.900
b	0.250	—	0.400
D	3.050	3.150	3.250
D1	3.200	3.300	3.400
D2	2.350	2.450	2.550
D3	0.935	1.035	1.135
E1	3.200	3.300	3.400
E	2.900	3.000	3.100
E2	1.635	1.735	1.835
e	0.650 REF		
L	0.300	0.400	0.500
H	0.250	—	0.630
θ	12° TYPE		