



## Features

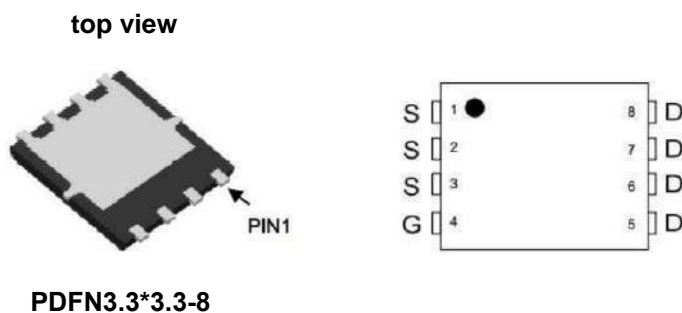
- Low RDS(ON)
- High Current capability
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

## Application

- Notebook AC-in load switch
- Battery protection charge/discharge

## Product Summary

$V_{DS}$	-30	V
$R_{DS(on),TYP}@ V_{GS}=10\text{ V}$	8.2	m $\Omega$
$I_D$	-35	A



## Absolute Maximum Ratings (T<sub>J</sub>=25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
$V_{DSS}$	Drain-Source Voltage		-30	V
$V_{GSS}$	Gate-Source Voltage		±20	
$T_J$	Maximum Junction Temperature		150	°C
$T_{STG}$	Storage Temperature Range		-55 to 150	°C
$I_S$	Diode Continuous Forward Current		-35	A
$I_{DM}^{①}$	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	-140	A
$I_D$	Continuous Drain Current	$T_c=25^\circ\text{C}$	-35	A
		$T_c=100^\circ\text{C}$	-19	
$P_D$	Maximum Power Dissipation		$T_c=25^\circ\text{C}$	W

## Thermal Characteristics

Symbol	Parameter		Rating	Unit
$R_{\theta JC}$	Thermal Resistance-Junction to Case	Steady State	3.6	°C/W
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	Steady State	37	°C/W

Note ① : Max. current is limited by bonding wire

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C

Note ③ : Surface Mounted on 1in<sup>2</sup> FR-4 board with 1oz.

**Electrical Characteristics** ( $T_J=25^{\circ}\text{C}$  Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Electrical Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=-27V, V_{GS}=0V$	-	-	-1	$\mu A$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.4	-2.5	V
$I_{GSS}$	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
$R_{DS(ON)}^{④}$	Drain-Source On-state Resistance	$V_{GS}=-10V, I_D=-10A$	-	8.2	10	m $\Omega$
		$V_{GS}=-4.5V, I_D=-8A$	-	11.3	15	
gfs	Forward Transconductance	$V_{DS}=-10V, I_D=-8A$	-	6.8	-	S
<b>Dynamic Characteristics</b> <sup>⑤</sup>						
$R_G$	Gate Resistance	$V_{GS}=0V, V_{DS}=0V,$ $F=1MHz$	-	10	-	$\Omega$
$C_{iss}$	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=-15V,$ $Freq.=1MHz$	-	1445	-	pF
$C_{oss}$	Output Capacitance		-	172	-	
$C_{rss}$	Reverse Transfer Capacitance		-	105	-	
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=-15V,$ $I_D=-1A,$ $V_{GS}=-4.5V,$ $R_{GEN}=2.7\Omega$	-	15.8	-	nS
$t_r$	Turn-on Rise Time		-	28.8	-	
$t_{d(OFF)}$	Turn-off Delay Time		-	46.9	-	
$t_f$	Turn-off Fall Time		-	12.3	-	
$Q_g$	Total Gate Charge	$V_{DS}=-25V, V_{GS}=-4.5V,$ $I_D=-13A$	-	32	-	nC
$Q_g$	Total Gate Charge	$V_{DS}=-15V,$ $V_{GS}=-10V, I_D=-10A$	-	43	-	
$Q_{gs}$	Gate-Source Charge		-	8.4	-	
$Q_{gd}$	Gate-Drain Charge		-	14	-	
<b>Source-Drain Characteristics</b>						
$V_{SD}^{④}$	Diode Forward Voltage	$I_S=-3A, V_{GS}=0V$	-	-0.8	-1.0	V
$t_{rr}$	Reverse Recovery Time	$I_F=-20A, V_{GS}=0,$ $dI_F/dt=100A/\mu s$	-	19.2	-	nS
$Q_{rr}$	Reverse Recovery Charge		-	0.8	-	nC

 Note ④ : Pulse test (pulse width $\leq 300\mu s$ , duty cycle $\leq 2\%$ ).

Note ⑤ : Guaranteed by design, not subject to production testing.

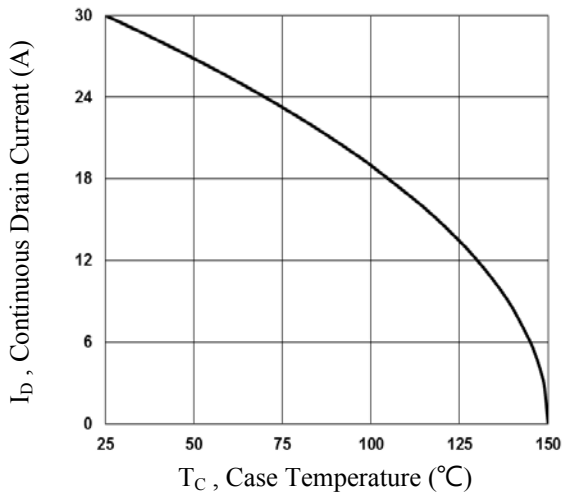


Fig.1 Continuous Drain Current vs.  $T_C$

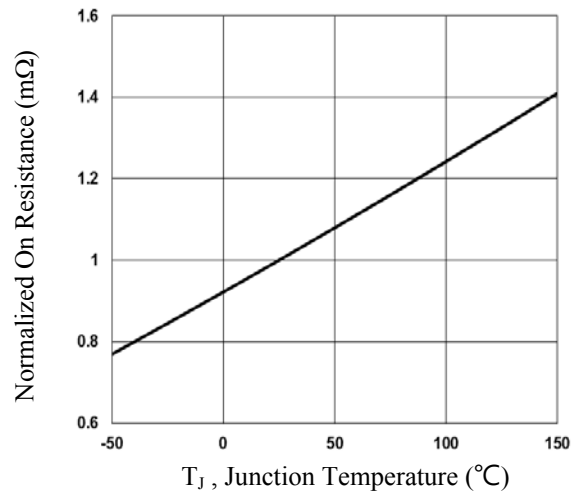


Fig.2 Normalized  $R_{DS(on)}$  vs.  $T_J$

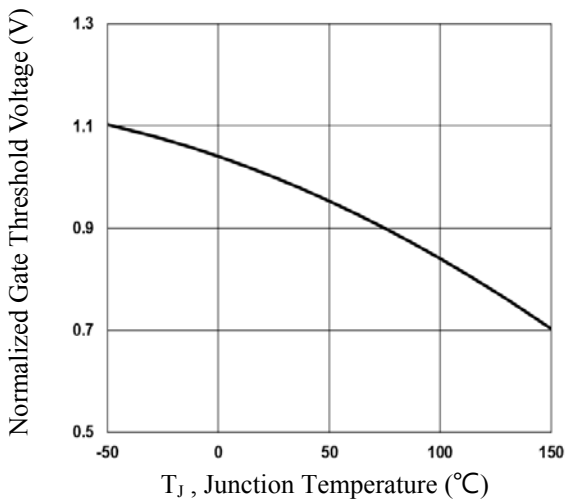


Fig.3 Normalized  $V_{th}$  vs.  $T_J$

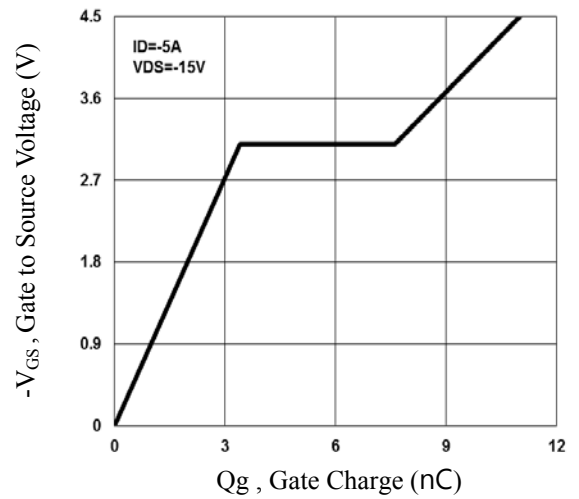


Fig.4 Gate Charge Waveform

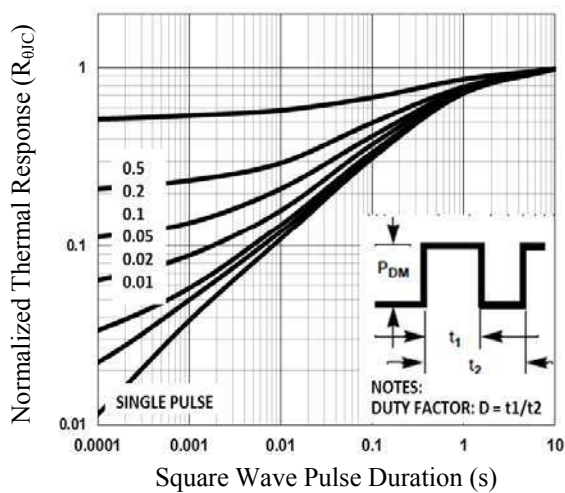


Fig.5 Normalized Transient Impedance

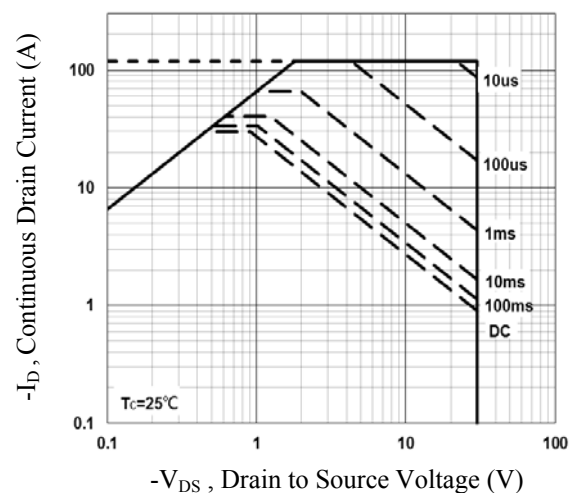


Fig.6 Maximum Safe Operation Area

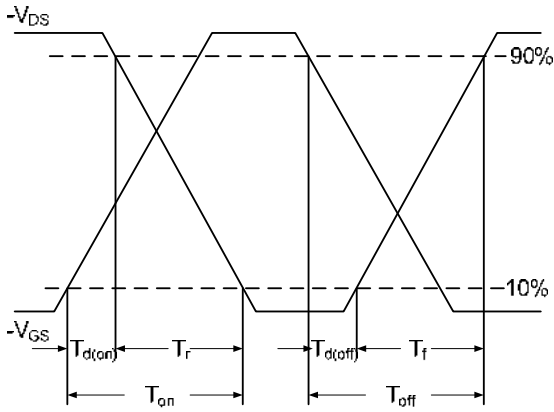


Fig.7 Switching Time Waveform

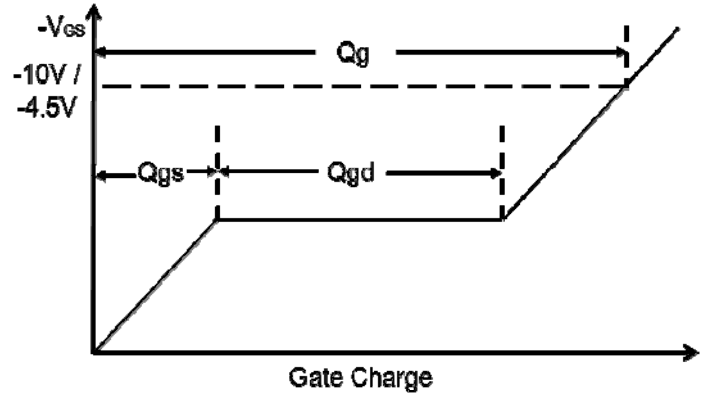
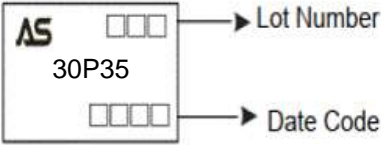
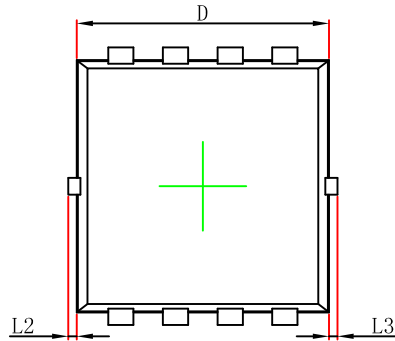


Fig.8 Gate Charge Waveform

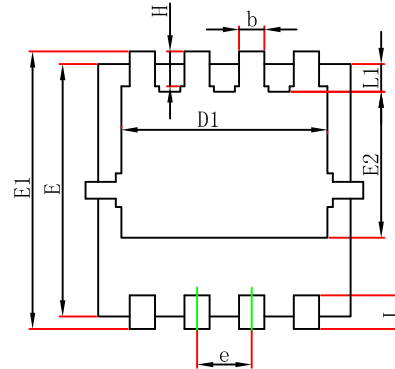
## Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM30P35E-R	30P35	PDFN3.3*3.3-8	Tape&Reel	5000/Reel

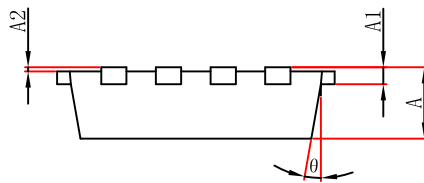
PACKAGE	MARKING
PDFN3.3*3.3-8	 <p>AS    □□□ → Lot Number 30P35 □□□□ → Date Code</p>

**PDFN 3.3\*3.3 -8 (P0.65T0.80) PACKAGE OUTLINE DIMENSIONS**


Top View  
[顶视图]



Bottom View  
[背视图]



Side View  
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

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