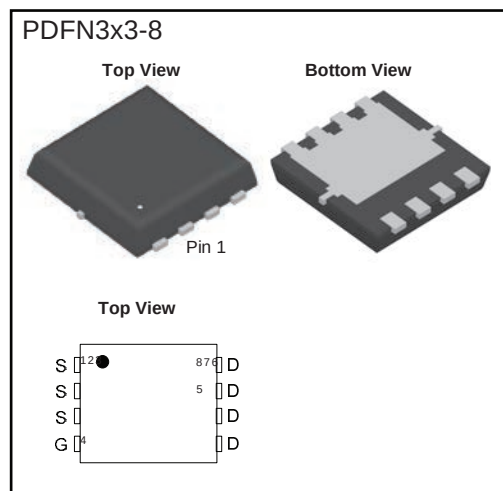
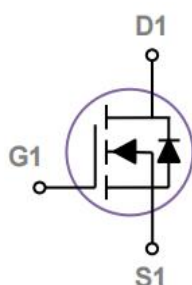


N-Channel MOSFET

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■ Features

- V_{DS} (V)= 30 V
- I_D = 60A
- $R_{DS(ON)}$ =4.5m Ω (typ.) @ V_{GS} =10V
- $R_{DS(ON)}$ =6.2m Ω (typ.) @ V_{GS} =4.5V



■ Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current-Continuous ^(Note 2)	$T_C=25^\circ\text{C}$	I_D	60	A
	$T_C=70^\circ\text{C}$		47	A
-Pulsed ^(Note 1, Note 2)		I_{DM}	240	A
Single Pulse Avalanche Energy ^(Note 3)		E_{AS}	105	mJ
Maximum Power Dissipation	$T_C=25^\circ\text{C}$	P_D	43	W
	$T_C=70^\circ\text{C}$		34	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	60	$^\circ\text{C/W}$
Thermal Resistance Junction-Case		$R_{\theta JC}$	2.8	$^\circ\text{C/W}$

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■ Electrical Characteristics (T_C=25 °C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _D =250uA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V , V _{GS} =0V			1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V , V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250uA	1	1.4	2.2	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V , I _D =15A		4.5	6.0	mΩ
		V _{GS} =4.5V , I _D =10A		6.2	8.0	mΩ
Forward Transconductance	g _{FS}	V _{GS} =10V , I _D =3A		9.5		S
DYNAMIC CHARACTERISTICS ^{Note4}						
Input Capacitance	C _{ISS}	V _{DS} =10V , V _{GS} =0 V , f =1.0MHz		1550		pF
Output Capacitance	C _{OSS}			260		pF
Reverse Transfer Capacitance	C _{RSS}			220		pF
Total Gate Charge	Q _g	V _{DS} =15V , I _D =10A , V _{GS} =10V		28		nC
Gate-Source Charge	Q _{gs}			4.8		nC
Gate-Drain Charge	Q _{gd}			5.5		nC
SWITCHING CHARACTERISTICS ^{Note4}						
Turn-On Delay Time	t _{D(ON)}	V _{DD} =15V , I _D =10A , V _{GS} =10V , R _{GEN} =3.5Ω		8.7		ns
Rise Time	tr			14.8		ns
Turn-Off Delay Time	t _{D(OFF)}			36.2		ns
Fall Time	tf			11		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage	V _{SD}	V _{GS} =0V , I _S =10A			1.0	V

Notes:

- 1、 Pulse Test Width < 300us,Duty Cycle< 2%
- 2、 Drain current limited by maximum junction temperature.
- 3、 Starting T_j=25°C ,L=0.1mH,V_{DD}=25V,V_{GS}=10V ,R_G=25Ω
- 4、 Guaranteed by design,not subject to production testing.

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Typical Performance Characteristics

Fig.1 Continuous Drain Current vs. T_C

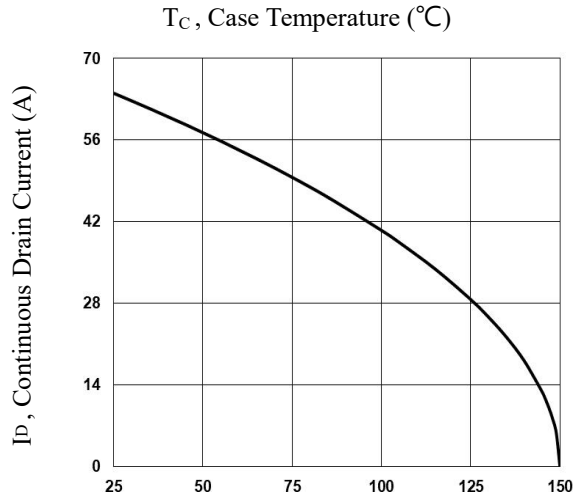


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

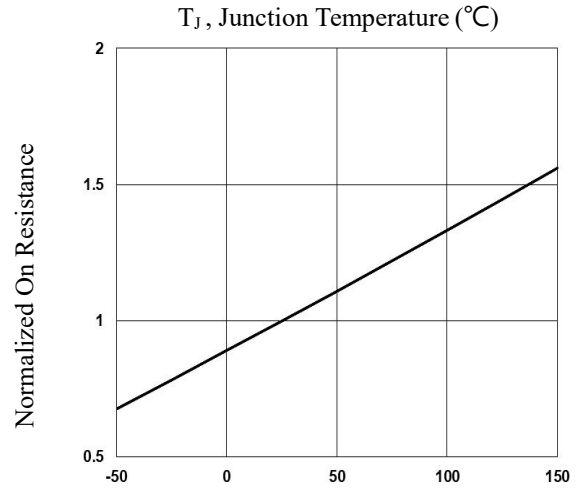


Fig.3 Normalized V_{th} vs. T_J

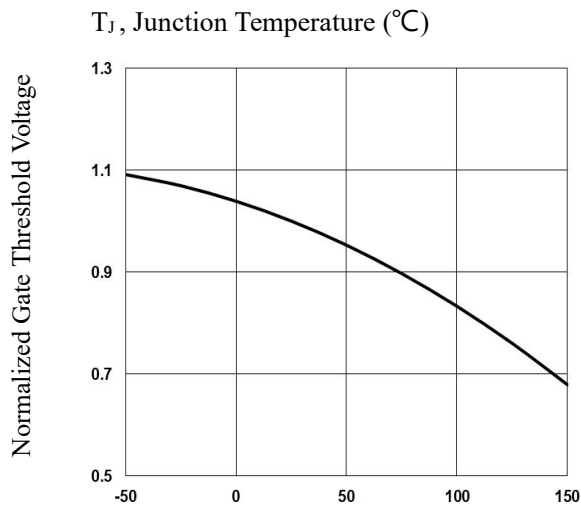


Fig.4 Gate Charge Waveform

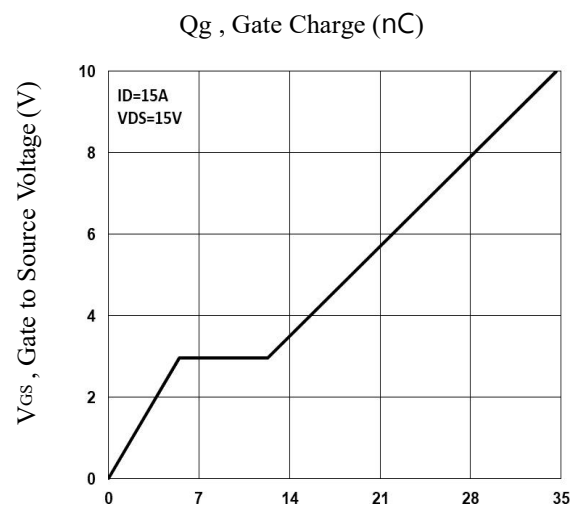


Fig.5 Normalized Transient Impedance

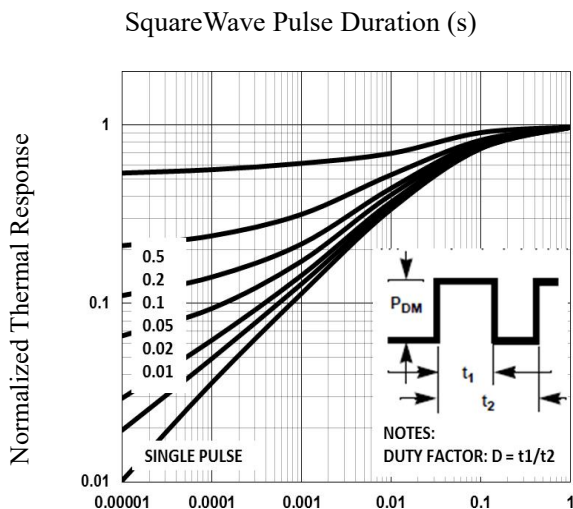
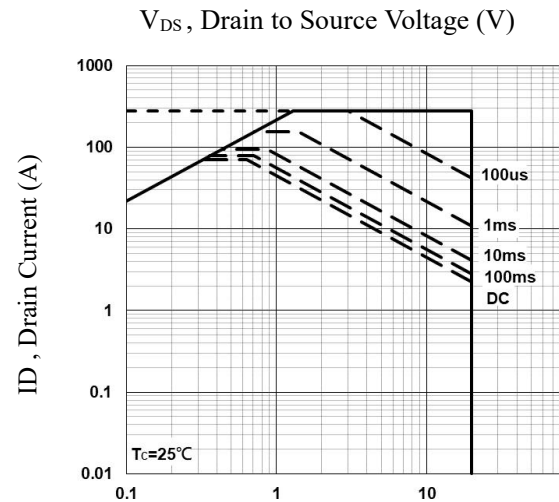


Fig.6 Maximum Safe Operation Area



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Figure 7a. Switching Test Circuit

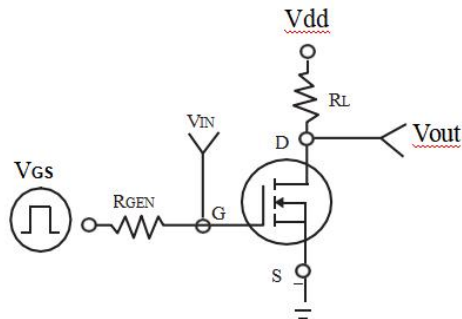


Figure 7b. Switching Waveforms

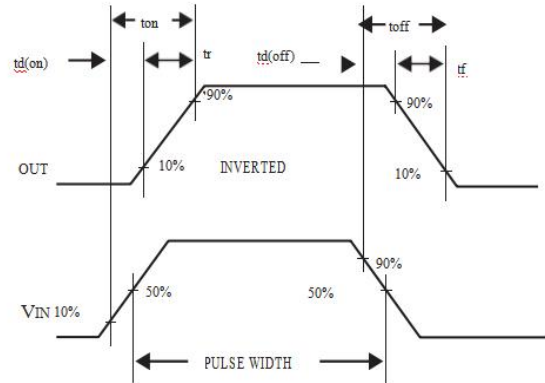


Figure 8 a.Unclamped Inductive Test Circuit

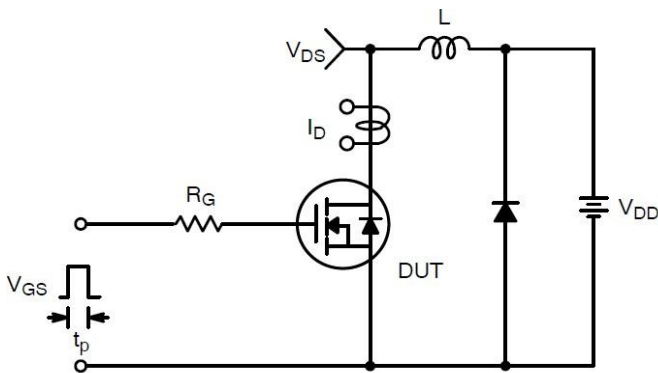
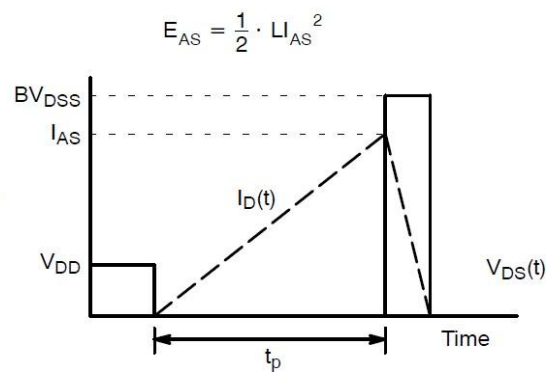


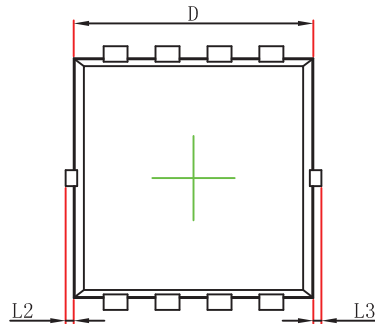
Figure 8 b.Unclamped Inductive Waveforms



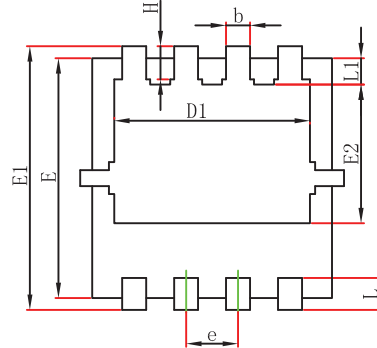
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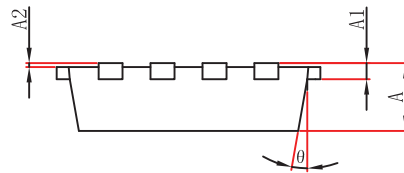
PDFN3x3-8 Package Outline Dimensions



Top View



Bottom View



Side View

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	3.050	3.250	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°