

Product Summary

- $V_{DS} = 60V, I_D = 30A$
- $R_{DS(on)} < 16.5m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 19.5m\Omega @ V_{GS} = 4.5V$

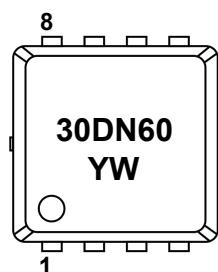
Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

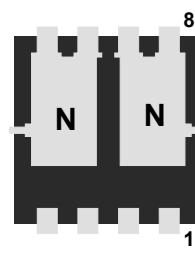
Application

- Load Switch
- Battery Protection
- Uninterruptible Power Supply

Marking Code



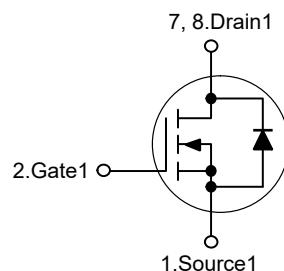
(Top View)



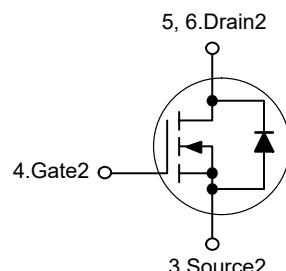
(Bottom View)

Pin	Description	Pin	Description
1	Source1	4	Gate2
2	Gate1	5,6	Drain2
3	Source2	7,8	Drain1

Schematic Diagram



N-Channel



N-Channel

Absolute Maximum Ratings

Ratings at 25°C case temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	30	A
Drain Current-Pulsed ^{Note1}	I_{DM}	140	A
Maximum Power Dissipation	P_D	42	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3	°C/W
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Electrical Characteristics(T₀=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note2}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.2	V
Drain-Source On-Resistance ^{Note2}	R _{DS(on)}	V _{GS} =10V, I _D =30A	--	--	16.5	mΩ
		V _{GS} =4.5V, I _D =20A	--	--	19.5	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	--	1990	--	pF
Output Capacitance	C _{oss}		--	135	--	pF
Reverse Transfer Capacitance	C _{rss}		--	115	--	pF
Total Gate Charge	Q _g	V _{DS} =30V, I _D =30A, V _{GS} =10V	--	45	--	nC
Gate-Source Charge	Q _{gs}		--	8	--	nC
Gate-Drain Charge	Q _{gd}		--	11	--	nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, I _D =30A, V _{GS} =10V, R _{GEN} =1.8Ω	--	11	--	nS
Turn-on Rise Time	t _r		--	79	--	nS
Turn-off Delay Time	t _{d(off)}		--	33	--	nS
Turn-off Fall Time	t _f		--	107	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note2}	V _{SD}	V _{GS} =0V, I _S =30A	--	--	1.2	V
Diode Forward Current	I _S		--	--	35	A

Note :

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%

Test Circuit

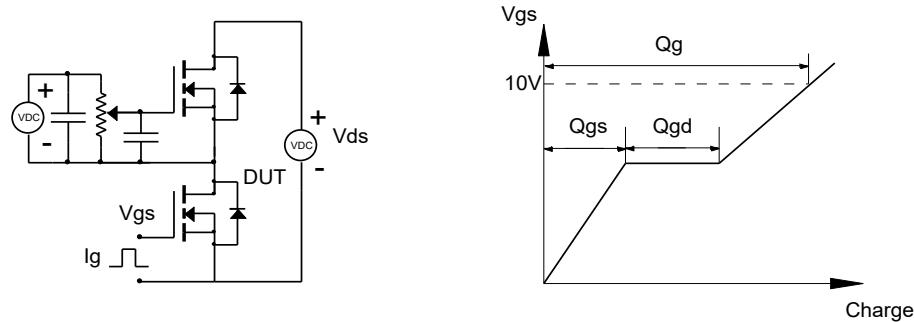


Figure 1: Gate Charge Test Circuit & Waveform

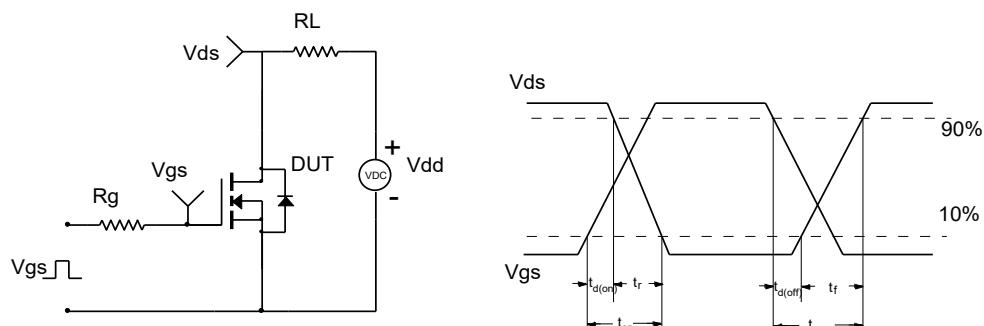


Figure 2: Resistive Switching Test Circuit & Waveform

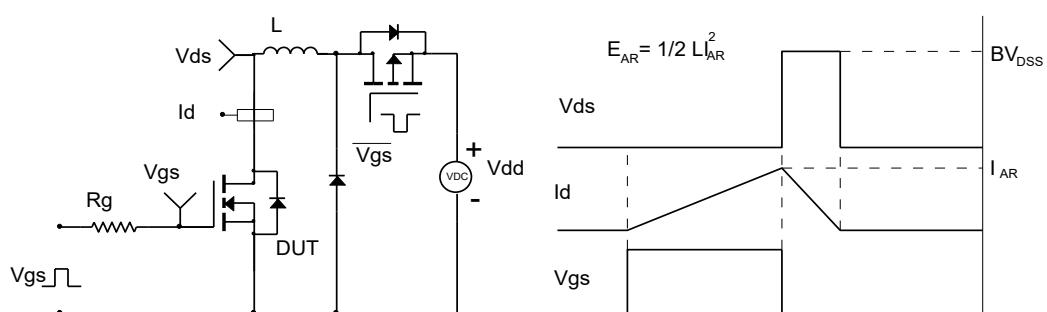


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

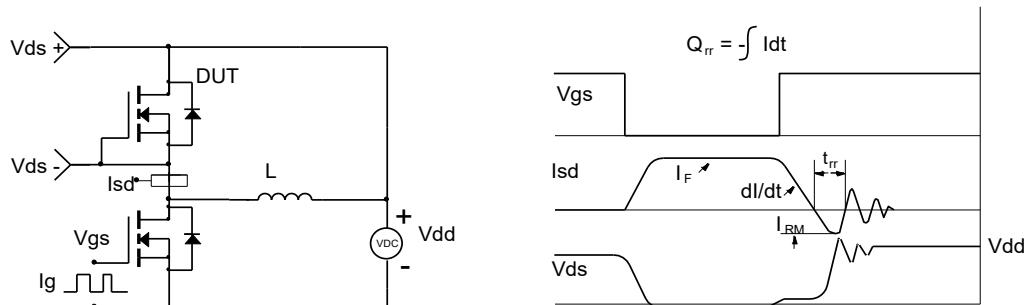
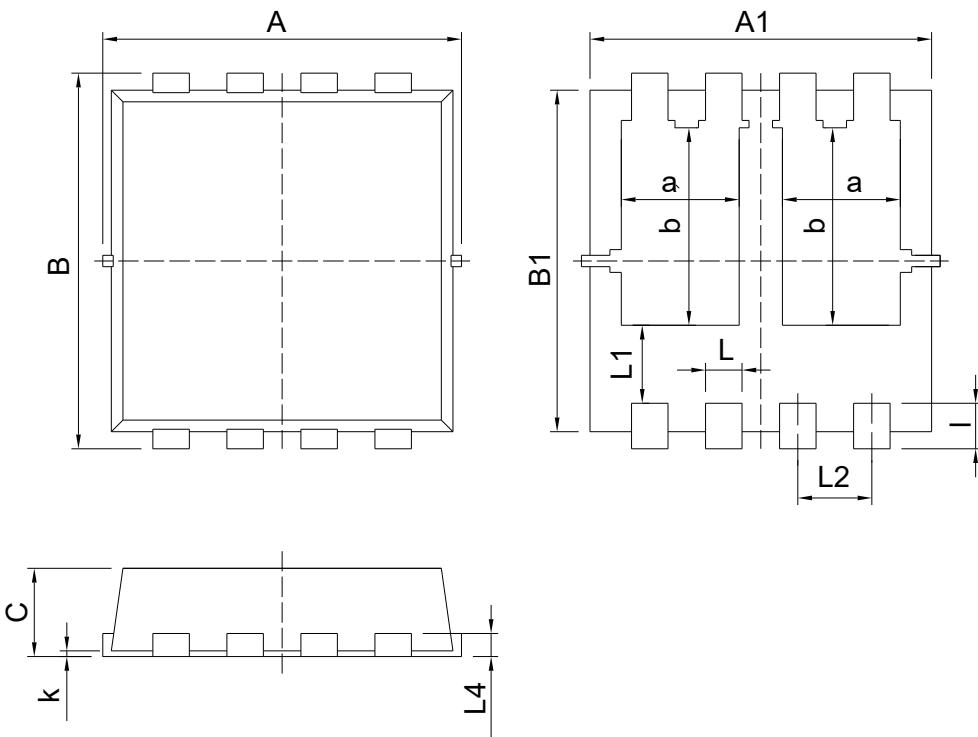


Figure 4: Diode Recovery Test Circuit & Waveform

Package Outline

PDFN3x3A-8L

Dimensions in mm



Symbol	Dimensions		Symbol	Dimensions	
	Min.	Max.		Min.	Max.
A	3.2	3.4	L2	0.55	0.75
A1	3.1	3.2	L4	0.14	0.20
B	3.2	3.4	a	0.935	1.135
B1	2.95	3.05	b	1.635	1.835
C	0.75	0.85	k	0.0	0.05
L	0.25	0.35	l	0.3	0.5
L1	-	0.75			

Contact Information

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For additional information, please contact your local Sales Representative.



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