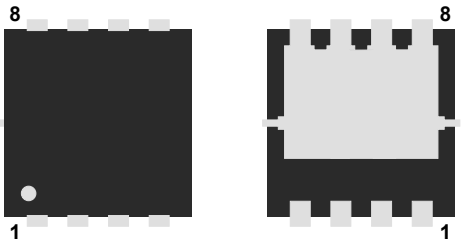
TN80N30DL

N-Channel Enhancement Mode Power MOSFET

Product Summary

- V_{DS}= 30V,I_D= 80A
- $R_{DS(on)}$< 4mΩ @V_{GS}= 10V
- $R_{DS(on)}$< 6.2mΩ @V_{GS}= 4.5V

PDFN3x3-8L



Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

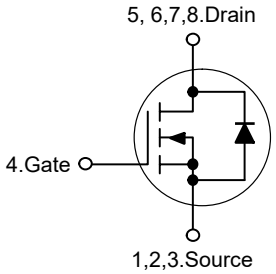
Features

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

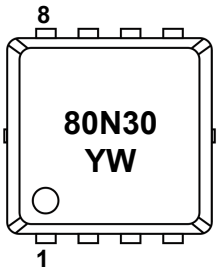
Application

- Load Switching
- Battery Protection
- Uninterruptible Power Supply

Schematic Diagram



Marking Code



Absolute Maximum Ratings

Ratings at 25℃ case temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	T_C=25°C	I_D	80	A
	T_C=100°C		38	
Drain Current-Pulsed Note1		I_{DM}	240	A
Single Pulsed Avalanche Energy Note2		E_{AS}	121	mJ
Maximum Power Dissipation		P_D	39	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3.2	°C/W
Thermal Resistance, Junction-to-Ambient Note3	$R_{\theta JA}$	41	

Electrical Characteristics

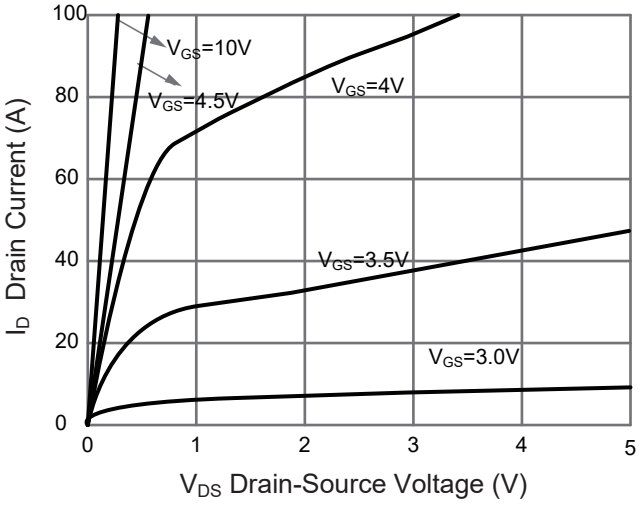
(T_C=25℃ unless otherwise specified)

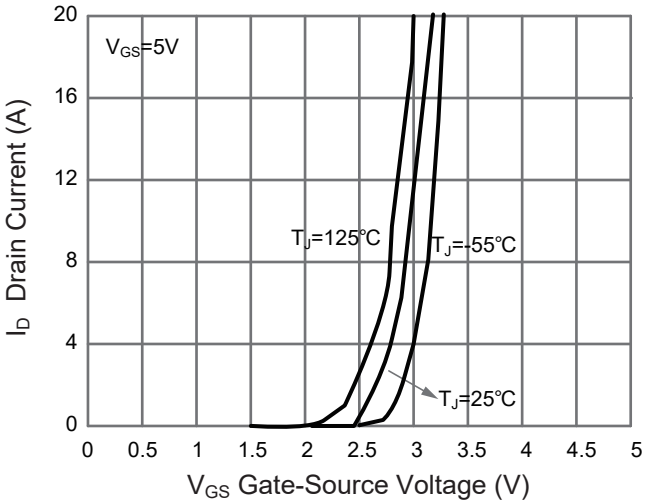
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1	--	2.5	V
Drain-Source On-Resistance Note4	$R_{DS(on)}$	V_{GS}=10V,I_D=30A	--	--	4	mΩ
		V_{GS}=4.5V,I_D=20A	--	--	6.2	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V,f=1MHz	--	3089	--	pF
Output Capacitance	C_{oss}		--	372	--	pF
Reverse Transfer Capacitance	C_{rss}		--	302	--	pF
Total Gate Charge	Q_g	V_{DS}=15V,I_D=30A, V_{GS}=10V	--	58	--	nC
Gate-Source Charge	Q_{gs}		--	12	--	nC
Gate-Drain Charge	Q_{gd}		--	13	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=30A, V_{GS}=10V, R_{GEN}=3Ω	--	11	--	nS
Turn-on Rise Time	t_r		--	29	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	47	--	nS
Turn-off Fall Time	t_f		--	18	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=30A	--	--	1.2	V
Diode Forward Current	I_S		--	--	80	A
Body Diode Reverse Recovery Time	trr	I_F = 30A, di/dt = 100A/us	--	16	--	ns
Body Diode Reverse Recovery Charge	Qrr		--	7	--	nC

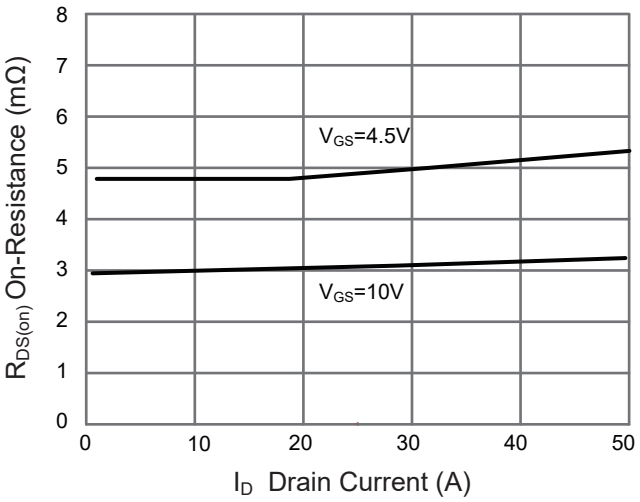
Note :

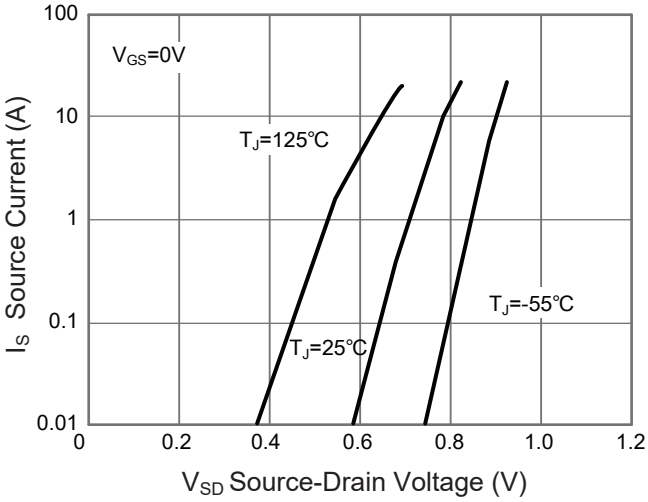
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. E_{AS} condition: Starting T_J=25°C, V_{DD}=15V, V_G=10V, R_G=25ohm,L=0.5mH, I_{AS}=22A.
3. Surface mounted on a 1inch^2 pad of 2OZ copper FR4 PCB.
4. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

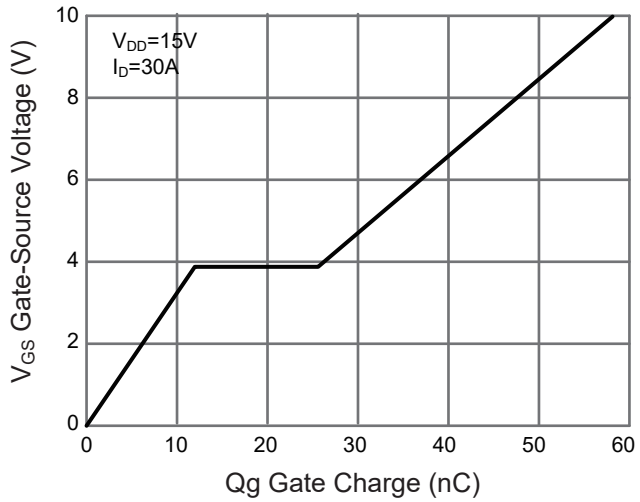
Typical Characteristic Curves

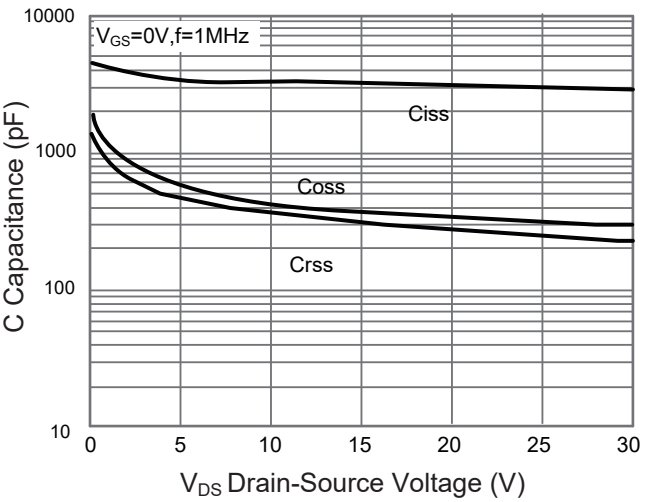


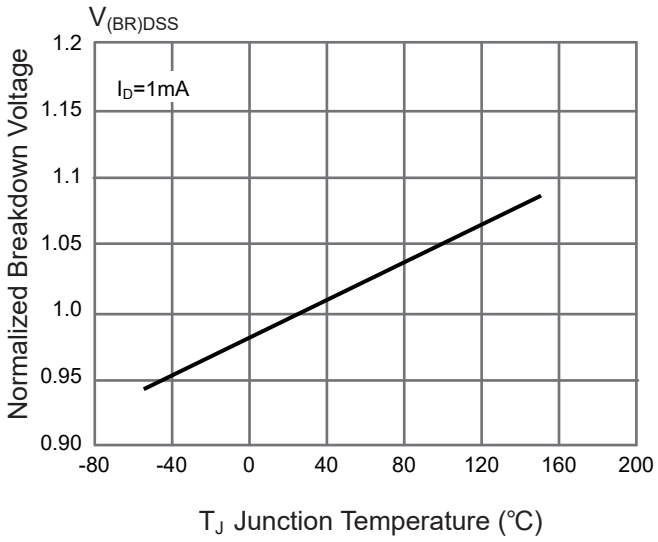


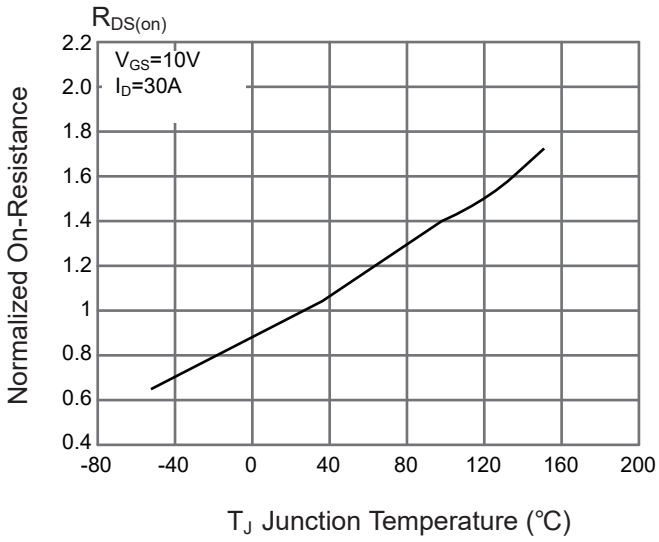


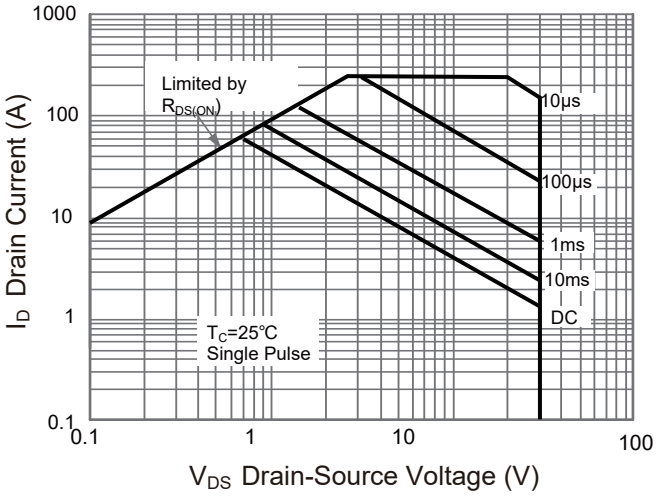


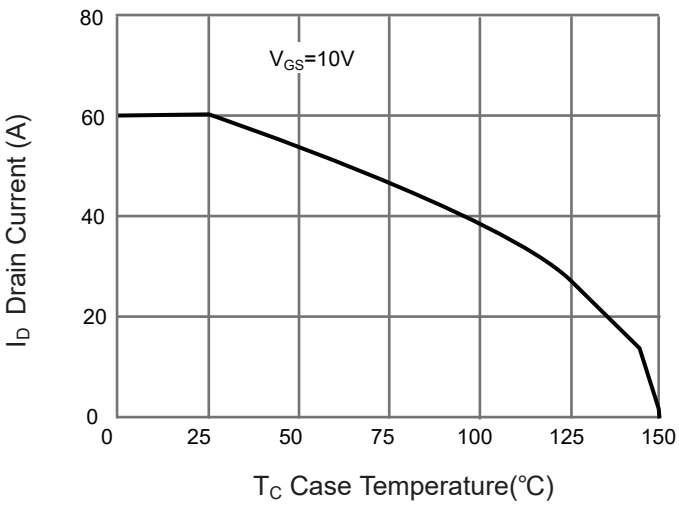


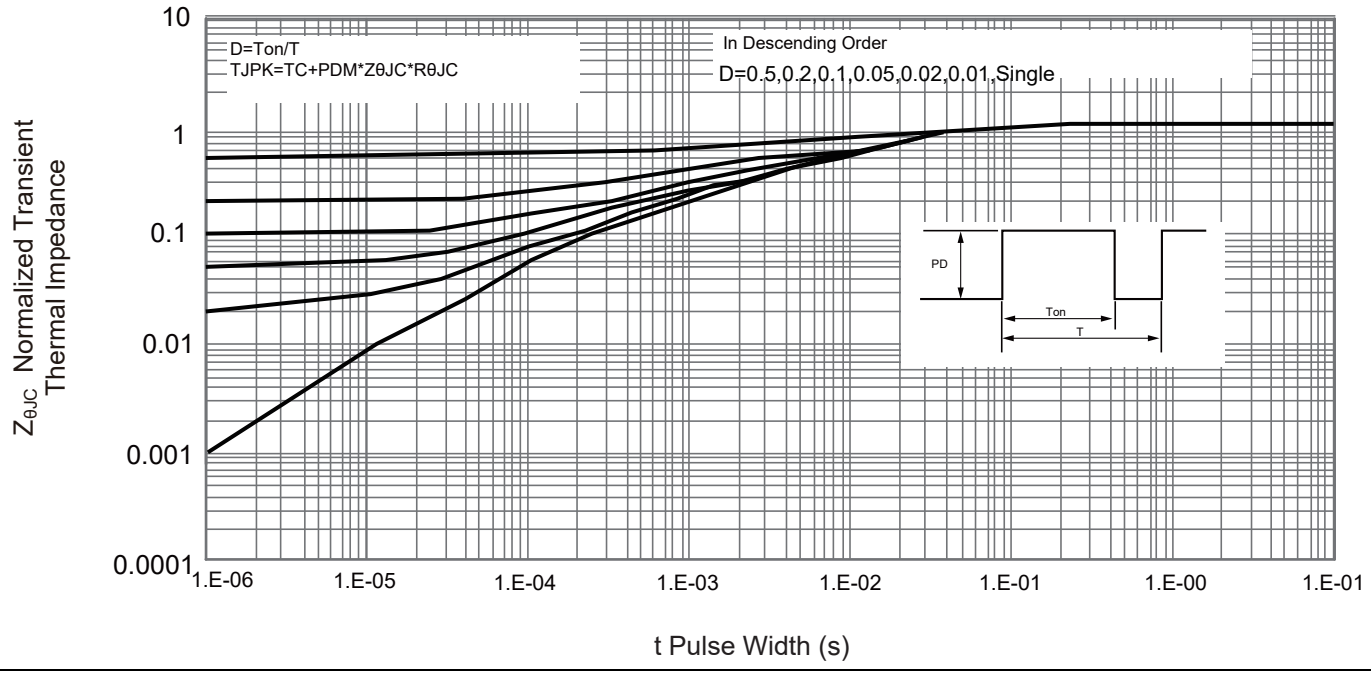






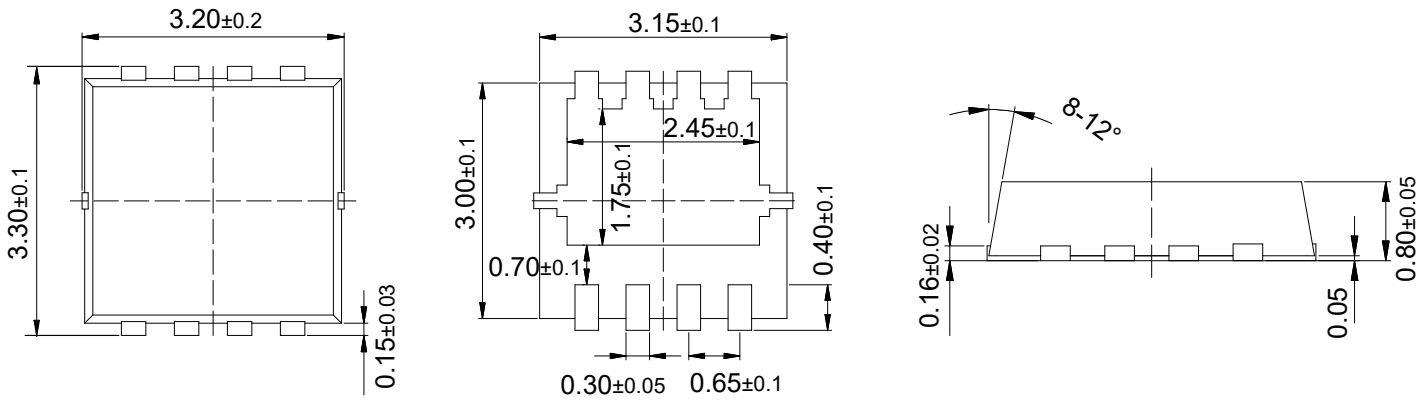






Package Outline

PDFN3x3-8L Dimensions in mm



Ordering Information

Device	Package	Shipping
TN80N30DL	PDFN3x3-8L	5,000PCS/Reel&13inches

Contact Information

TANI website: **http://www.tanisemi.com** Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.

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