

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
30V	10mΩ@10V	30A
	13mΩ@4.5V	

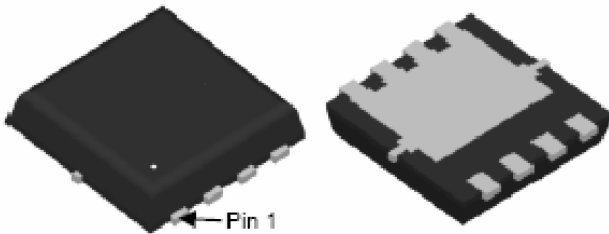
### Feature

- High density cell design for ultra low Rdson
- Fully characterized Avalanche voltage and current

### Application

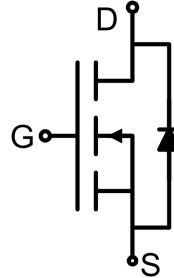
- High current load applications
- Load switching
- Hard switched and high frequency circuits
- Uninterruptible power supply

### Package

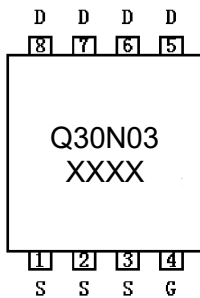


DFN3.3X3.3-8L

### Circuit diagram



### Marking



### Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	30	A
Pulsed Drain Current	I <sub>DM</sub>	115	A
Power Dissipation	P <sub>D</sub>	21	W
Thermal Resistance, Junction-to-Case	R <sub>θJC</sub>	7.1	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

### Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1		2.5	V
Drain-source on-resistance <sup>1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 15A			10	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 15A			13	
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1MHz		950		pF
Output Capacitance	C <sub>oss</sub>			204		
Reverse Transfer Capacitance	C <sub>rss</sub>			121		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 30A		28		nC
Gate-Source Charge	Q <sub>gs</sub>			7		
Gate-Drain Charge	Q <sub>gd</sub>			5		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = 20V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 2A, R <sub>GEN</sub> = 3Ω, R <sub>L</sub> = 1Ω		8		nS
Turn-on rise time	t <sub>r</sub>			15		
Turn-off delay time	t <sub>d(off)</sub>			27		
Turn-off fall time	t <sub>f</sub>			7		
<b>Source-Drain Diode characteristics</b>						
Diode Forward Current <sup>1)</sup>	I <sub>S</sub>				30	A
Diode Forward voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 15A			1.2	V

Notes:

- 1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤ 2%.
- 2) Guaranteed by design, not subject to production testing.

## Typical Characteristics

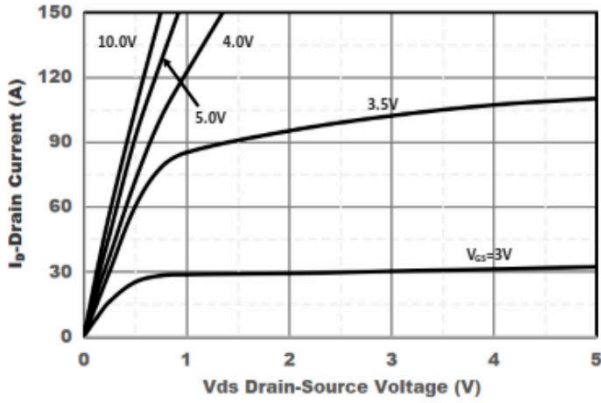


Figure1. Output Characteristics

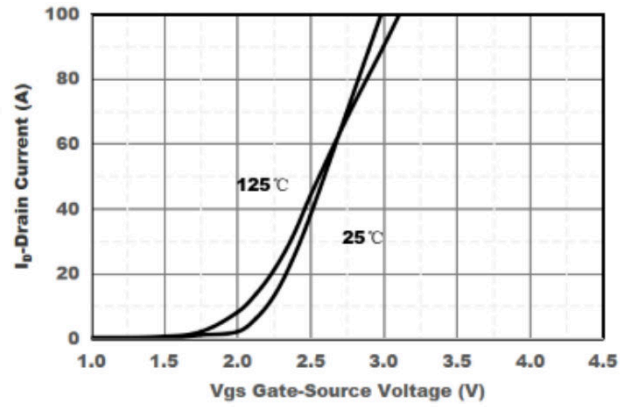


Figure2. Transfer Characteristics

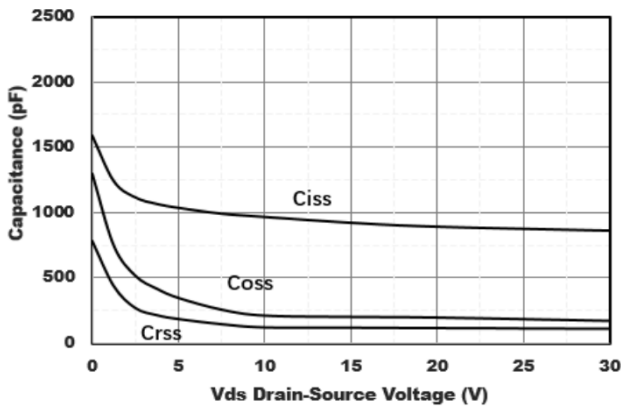


Figure3. Capacitance Characteristics

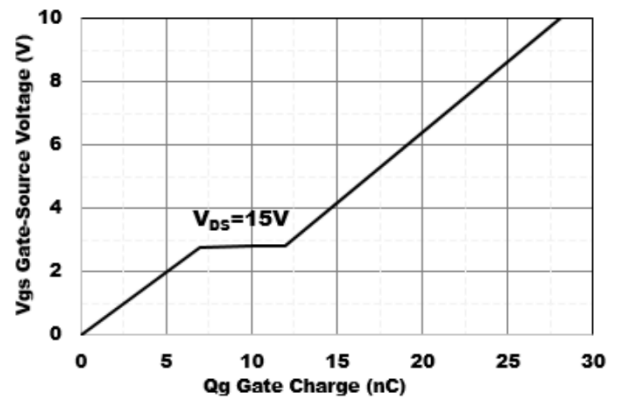


Figure4. Gate Charge

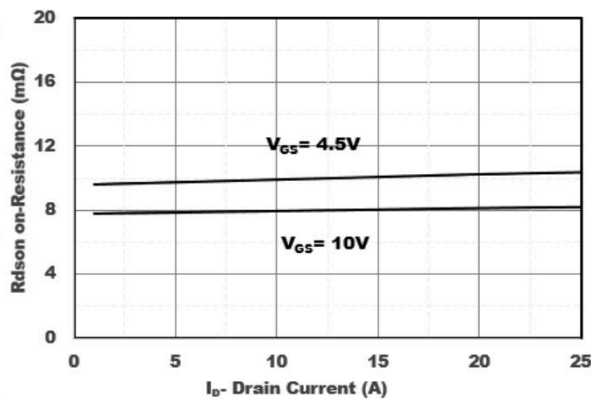


Figure5. Drain-Source on Resistance

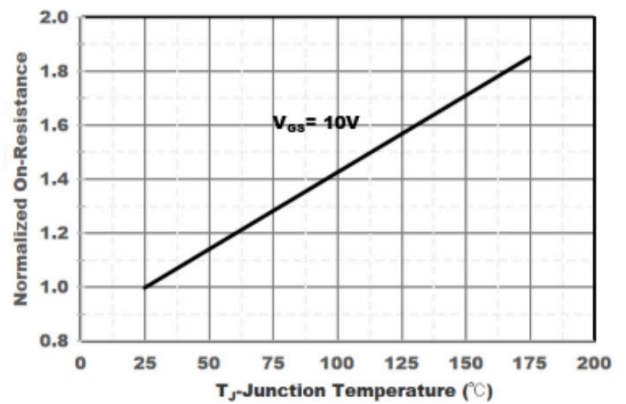


Figure6. Drain-Source on Resistance

## Typical Characteristics

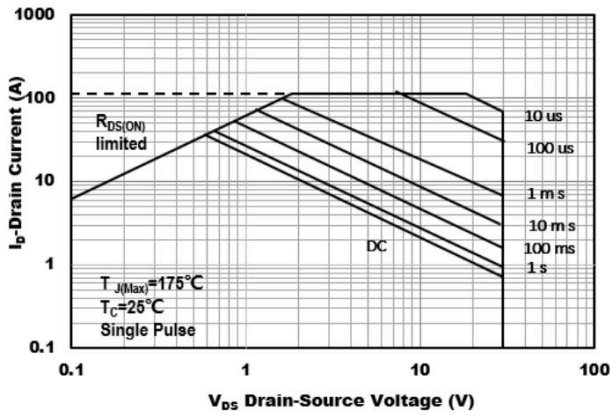


Figure7. Safe Operation Area

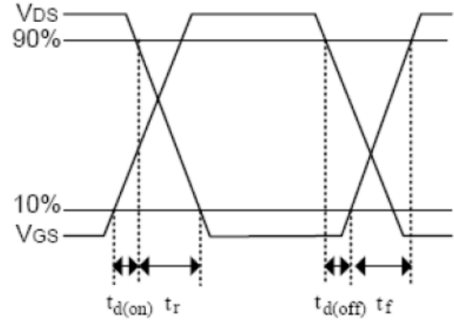
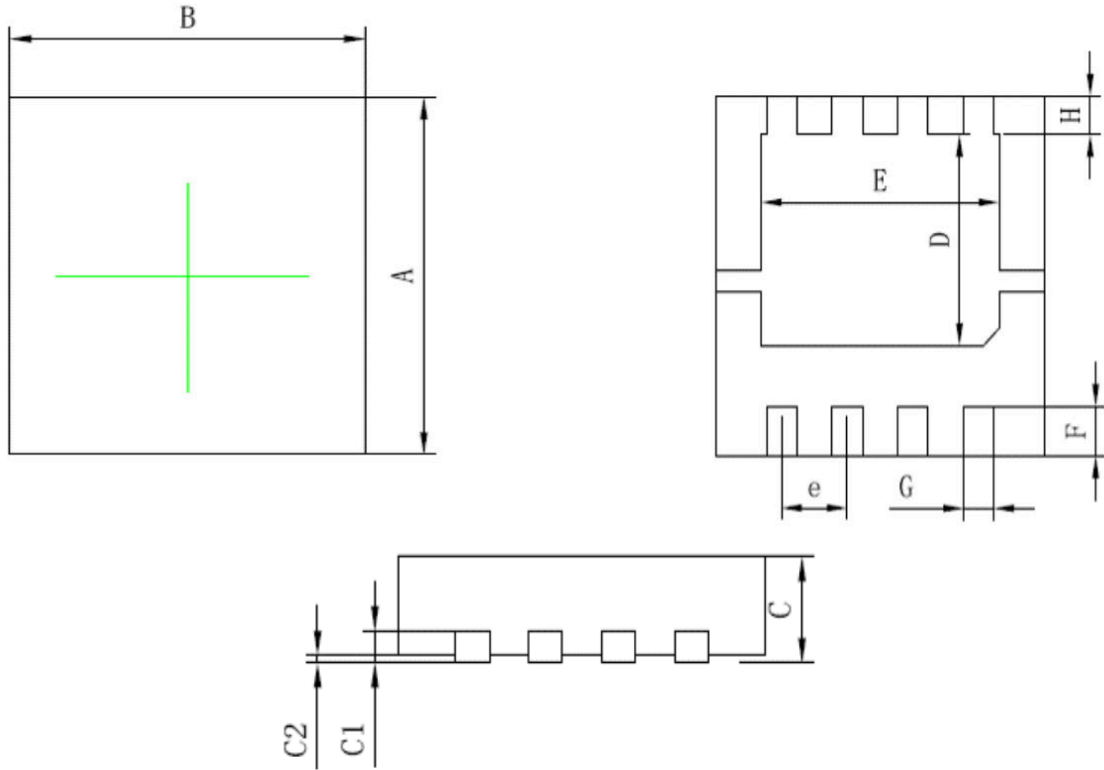


Figure8. Switching wave

### DFN3.3X3.3-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.200	3.300	0.126	0.130
B	3.200	3.300	0.126	0.130
C	0.750	0.850	0.030	0.033
C1	0.180	0.220	0.007	0.009
C2	0.05 Max		0.002 Max	
D	1.800	2.000	0.071	0.079
E	2.200	2.500	0.087	0.098
F	0.400	0.500	0.016	0.020
G	0.250	0.350	0.010	0.014
H	0.300	0.400	0.012	0.016
e	0.600	0.700	0.024	0.028