

Product Summary

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

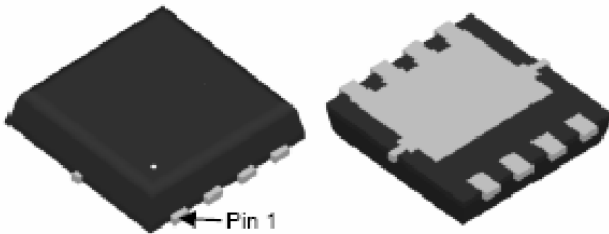
Feature

- High density cell design for ultra low Rdson
- Fully characterized Avalanche voltage and current
- Suffix "-Q1" for AEC-Q101

Application

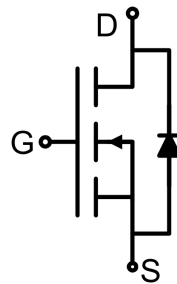
- High current load applications
- Load switching
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

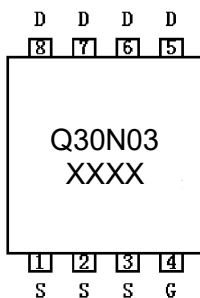


DFN3.3X3.3-8L

Circuit diagram



Marking



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

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

Electrical characteristics (T_A=25 °C, unless otherwise noted)

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 ¹⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 15A			10	mΩ
		V _{GS} = 4.5V, I _D = 15A			13	
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		950		pF
Output Capacitance	C _{oss}			204		
Reverse Transfer Capacitance	C _{rss}			121		
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 30A		28		nC
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			5		
Turn-on delay time	t _{d(on)}	V _{DD} = 20V, V _{GS} = 10V, I _D = 2A, R _{GEN} = 3Ω, R _L = 1Ω		8		nS
Turn-on rise time	t _r			15		
Turn-off delay time	t _{d(off)}			27		
Turn-off fall time	t _f			7		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I _S				30	A
Diode Forward voltage	V _{DS}	V _{GS} = 0V, I _S = 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

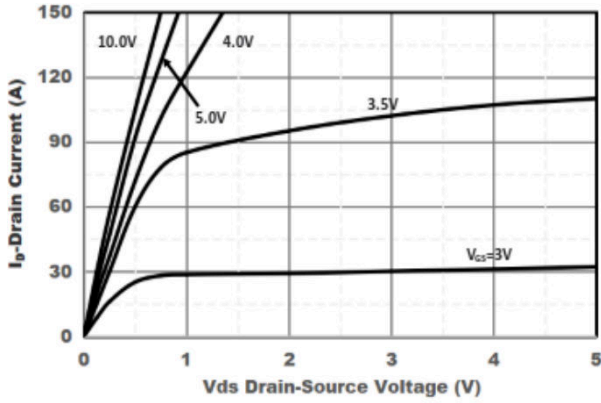


Figure1. Output Characteristics

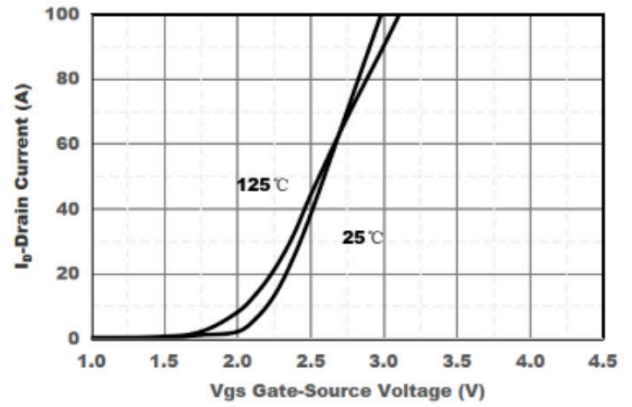


Figure2. Transfer Characteristics

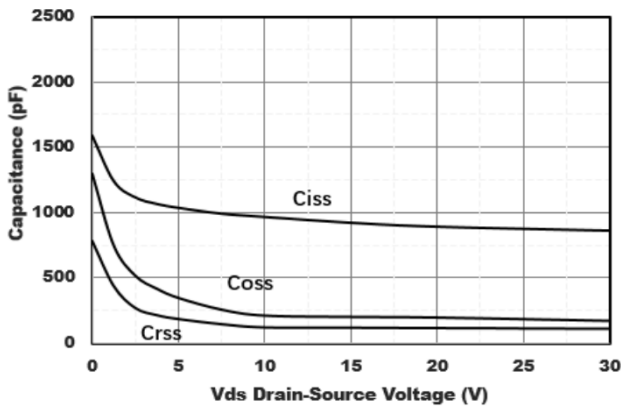


Figure3. Capacitance Characteristics

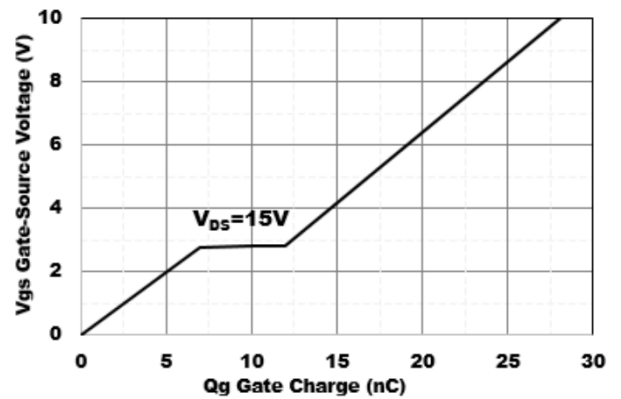


Figure4. Gate Charge

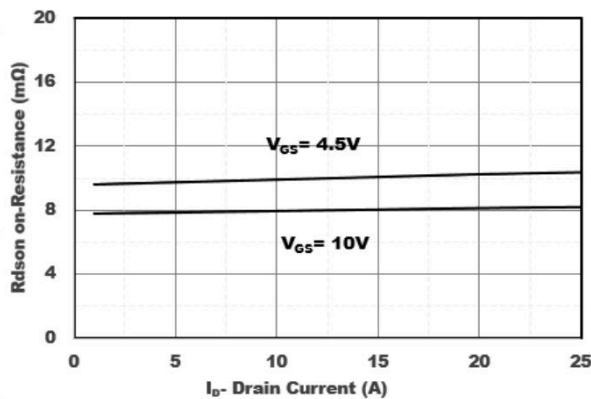


Figure5. Drain-Source on Resistance

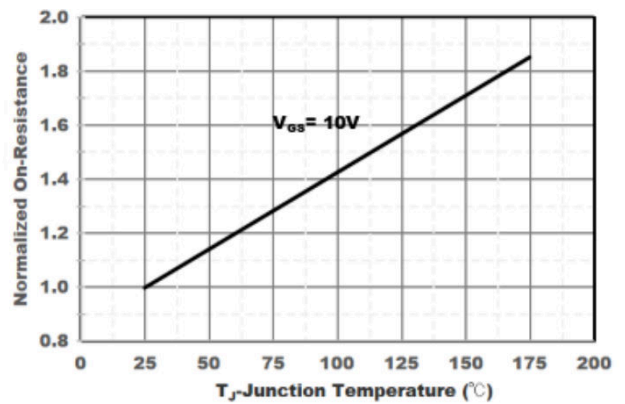


Figure6. Drain-Source on Resistance

Typical Characteristics

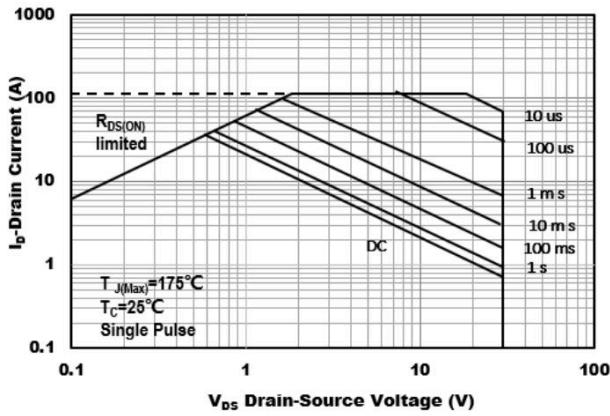


Figure7. Safe Operation Area

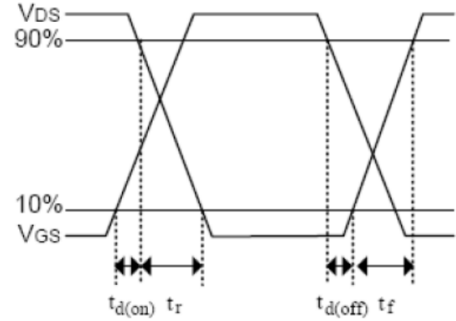
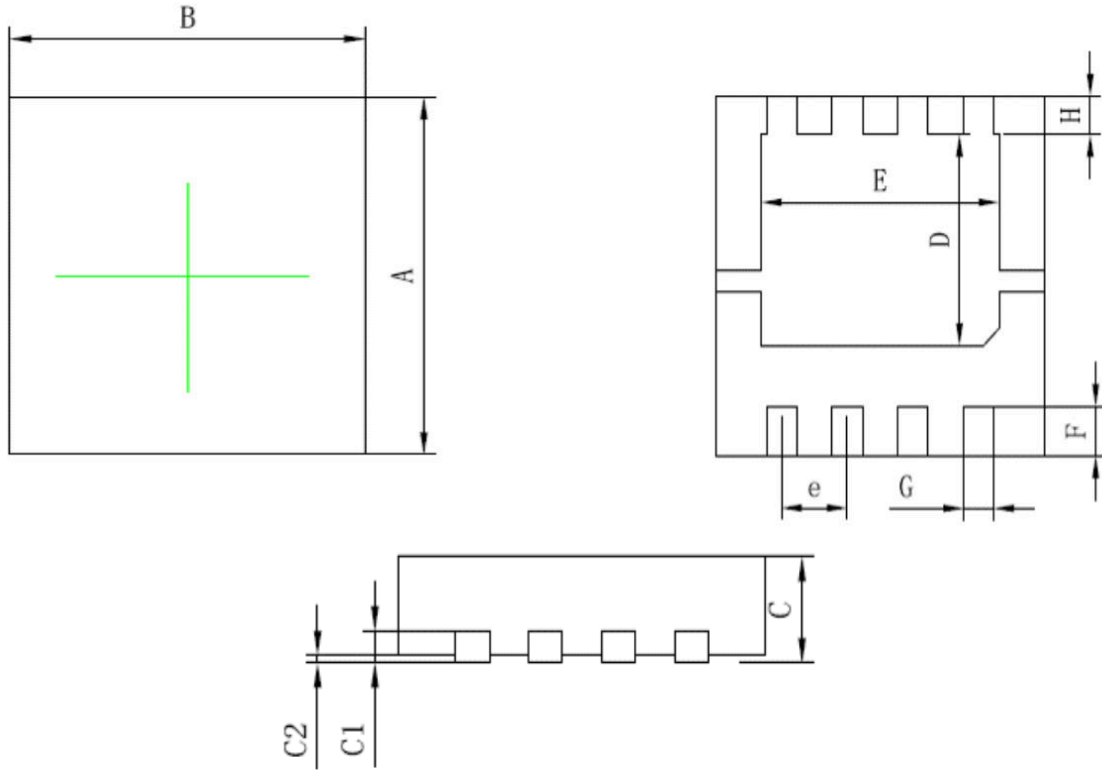


Figure8. Switching wave

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