

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	9mΩ@4.5V	10A
	12mΩ@2.5V	
	15mΩ@1.8V	

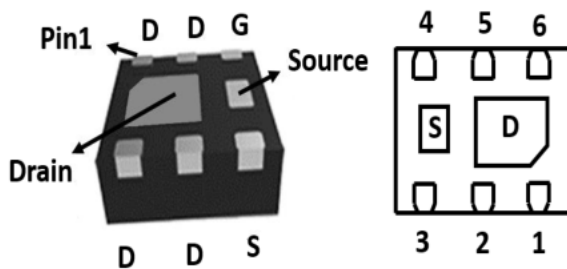
Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance
- High Speed switching

Application

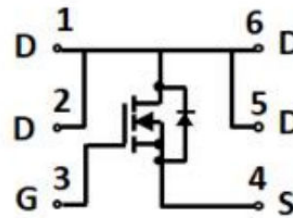
- Battery protectio
- Load switch
- Power management

Package

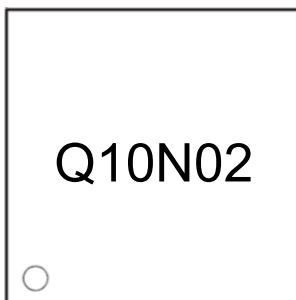


DFN2*2-6L

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±10	V
Continuous Drain Current	I _D	10	A
Pulsed Drain Current	I _{DM}	32	A
Power Dissipation	P _D	2.2	W
Thermal Resistance, Junction-to-Case	R _{θJC}	57	°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	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.45		1.0	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} = 4.5V, I _D = 10A		7.8	9	mΩ
		V _{GS} = 2.5V, I _D = 6.5A		9.5	12	
		V _{GS} = 1.8V, I _D = 4.0A		11	15	
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		1700		pF
Output Capacitance	C _{oss}			305		
Reverse Transfer Capacitance	C _{rss}			145		
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 10A		29		nC
Gate-Source Charge	Q _{gs}			6		
Gate-Drain Charge	Q _{gd}			7		
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 4.5V, I _D = 10A R _{GEN} = 3Ω, R _L = 1Ω		7		nS
Turn-on rise time	t _r			35		
Turn-off delay time	t _{d(off)}			30		
Turn-off fall time	t _f			6		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I _S				10	A
Diode Forward voltage	V _{DS}	V _{GS} = 0V, I _S = 10A			1.2	V
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F = 10A		39		nS
Reverse Recovery Charge	Q _{rr}	di/dt = 100A/μs		23		nC

Notes:

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

Typical Characteristics

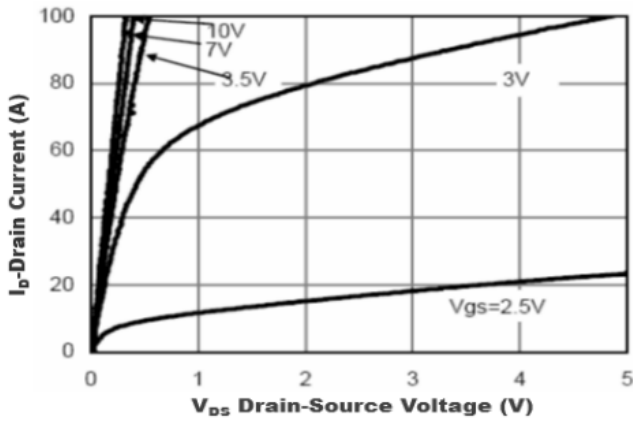


Figure1. Output Characteristics

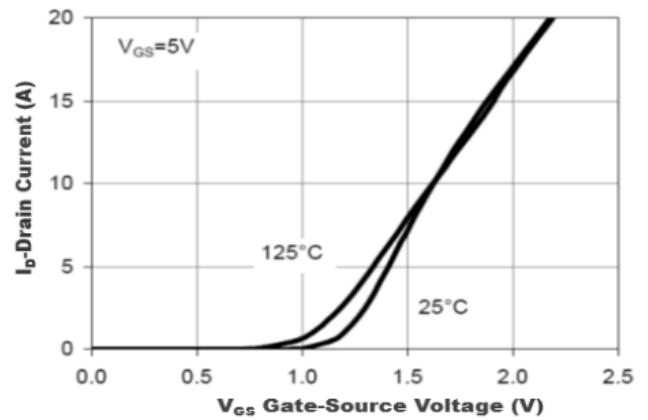


Figure2. Transfer Characteristics

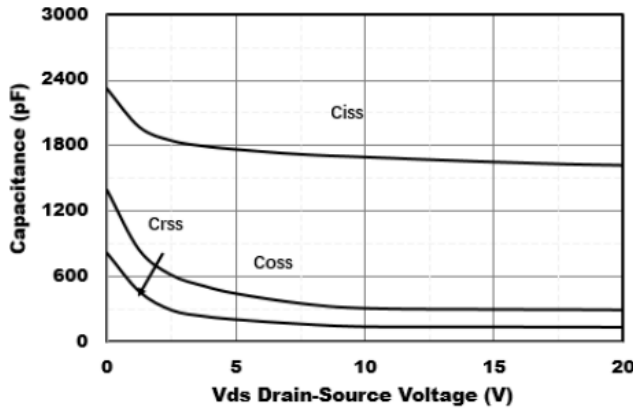


Figure3. Capacitance Characteristics

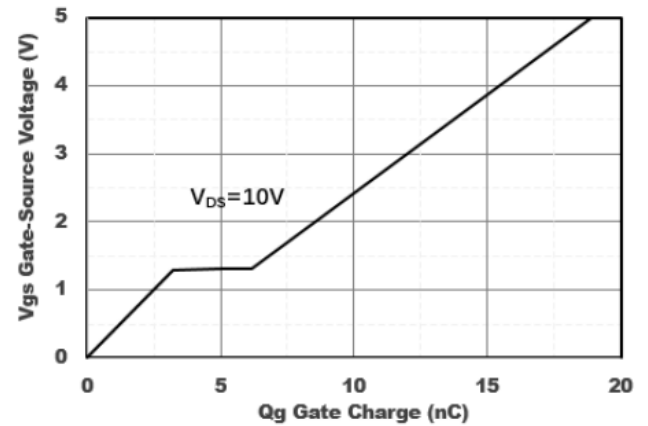


Figure4. Gate Charge

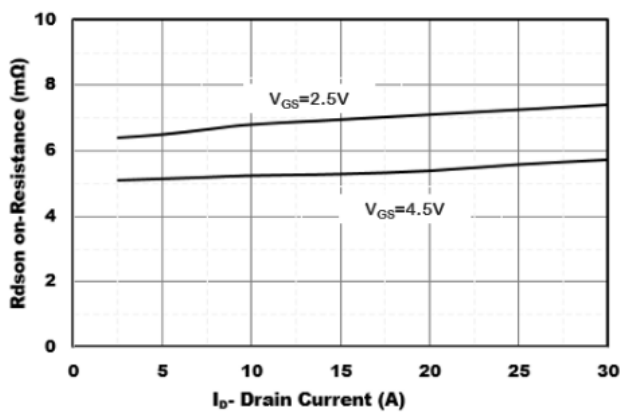


Figure5. Drain-Source on Resistance

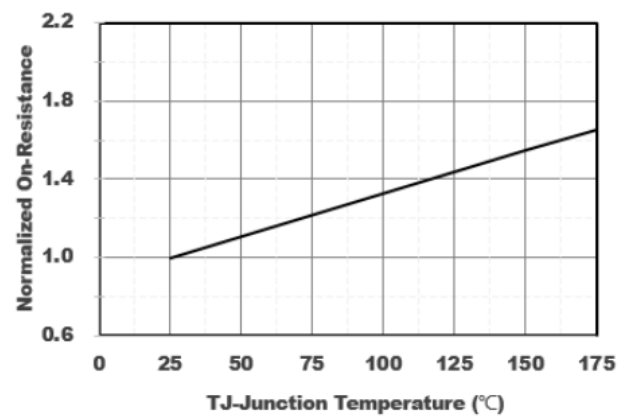


Figure6. Drain-Source on Resistance

Typical Characteristics

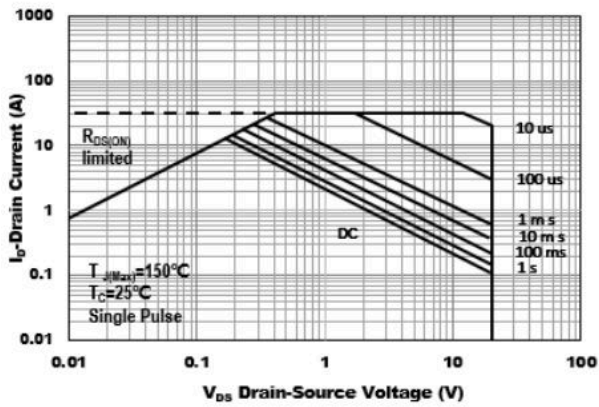


Figure7. Safe Operation Area

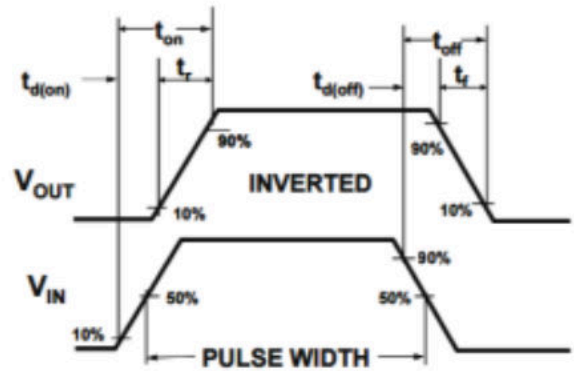
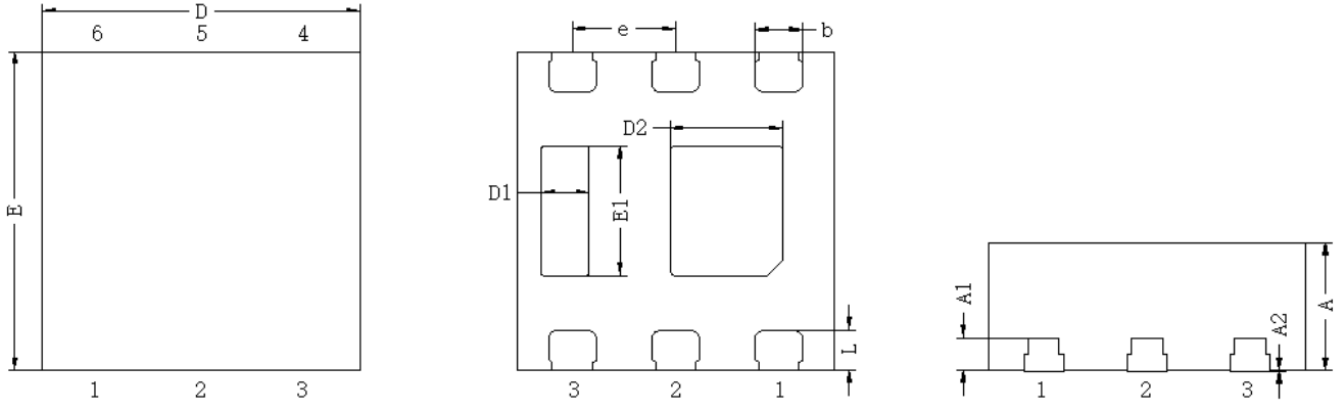


Figure8. Switching wave

DFN2*2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.750	0.850	0.030	0.033
A1	0.200 REF		0.008 REF	
A2	0.000	0.050	0.000	0.002
L	0.200	0.300	0.008	0.012
b	0.250	0.350	0.010	0.014
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
e	0.650 BSC		0.260 BSC	
D2	0.610	0.810	0.024	0.032
D1	0.200	0.400	0.008	0.016
E1	0.710	0.910	0.028	0.036