

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	20mΩ@10V	15A
	29mΩ@4.5V	

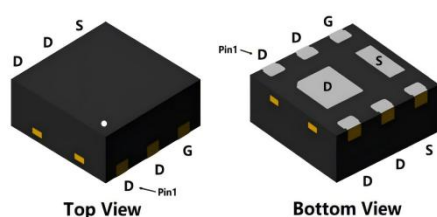
Feature

- Advanced Split Gate Trench Technology
- Excellent $R_{DS(on)}$
- Low Gate Charge

Application

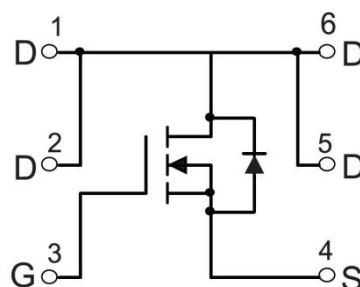
- Load Switch
- PWM Application
- Power management

Package

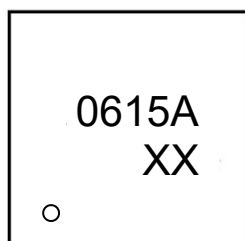


DFN2*2-6L

Circuit diagram



Marking



Absolute maximum ratings ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_C=25^{\circ}\text{C}$)	I_D	15	A
Continuous Drain Current ($T_C=100^{\circ}\text{C}$)	$I_D(100^{\circ}\text{C})$	9	A
Pulsed Drain Current ¹⁾	I_{DM}	60	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	P_D	8.6	W
Thermal Resistance Junction to Case	$R_{\theta JC}$	14.5	$^{\circ}\text{C/W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

Electrical characteristics ($T_J=25^{\circ}\text{C}$ 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	60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2	V
Drain-source on-resistance ²⁾	R _{DS(on)}	V _{GS} =10V, I _D =5A		15.5	20	mΩ
		V _{GS} =4.5V, I _D =3A		22	29	
Dynamic characteristics ³⁾						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f =1MHz		527		pF
Output Capacitance	C _{oss}			157		
Reverse Transfer Capacitance	C _{rss}			7.5		
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} =10V, I _D =15A		12.1		nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			2.6		
Turn-on delay time	t _{d(on)}	V _{DS} =30V, V _{GS} =10V, I _D =15A R _G =6Ω		3.3		nS
Turn-on rise time	t _r			4		
Turn-off delay time	t _{d(off)}			14		
Turn-off fall time	t _f			5.5		
Source-Drain Diode characteristics						
Diode Forward Current	I _S				15	A
Diode forward voltage	V _{SD}	V _{GS} =0V, I _S =5A			1.2	V
Reverse recover time	T _{rr}	I _F =15A, di/dt =100A/us		20		nS
Reverse recovery charge	Q _{rr}			8.1		nC

Notes:

- 1) Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
- 2) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.
- 3) Guaranteed by design, not subject to production.

Typical Characteristics

Figure 1: Output Characteristics

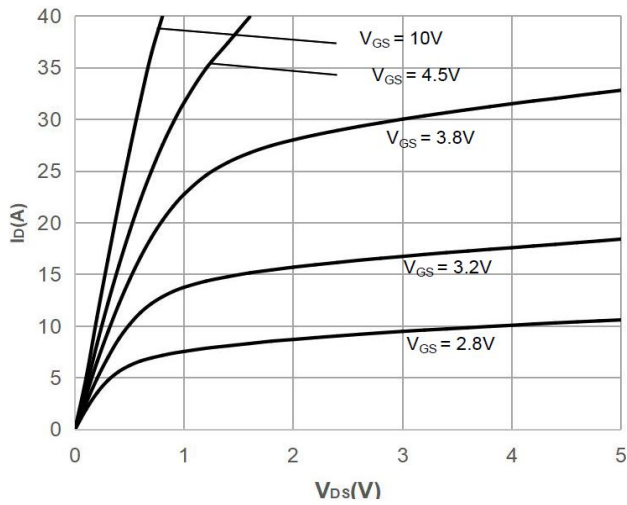


Figure 2: Typical Transfer Characteristics

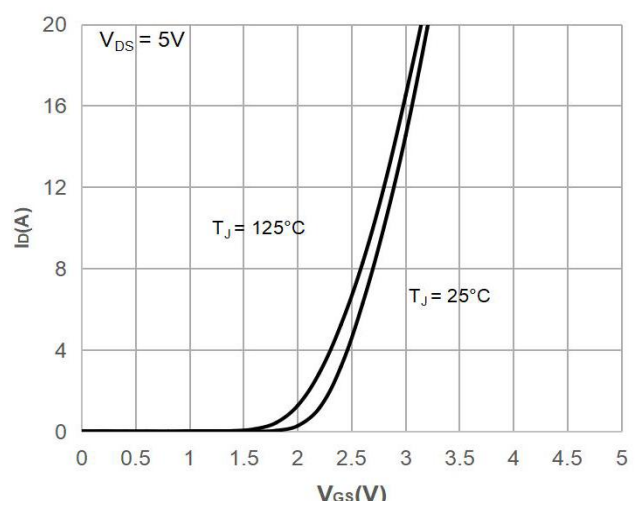


Figure 3: On-resistance vs. Drain Current

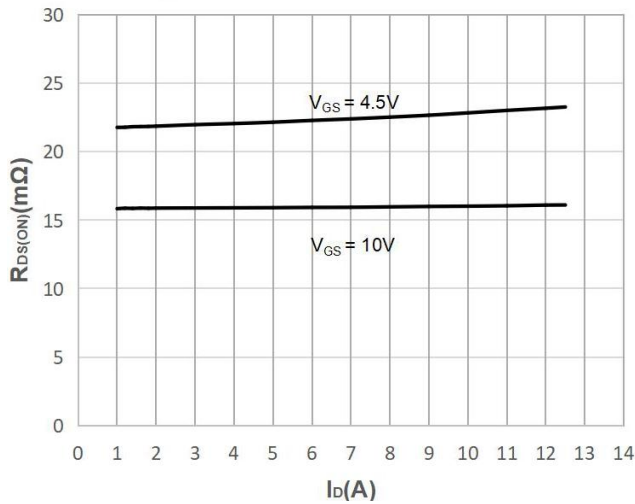


Figure 4: Body Diode Characteristics

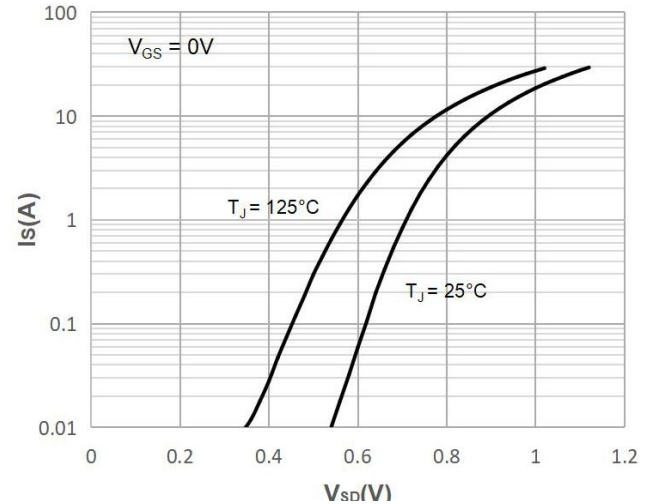


Figure 5: Gate Charge Characteristics

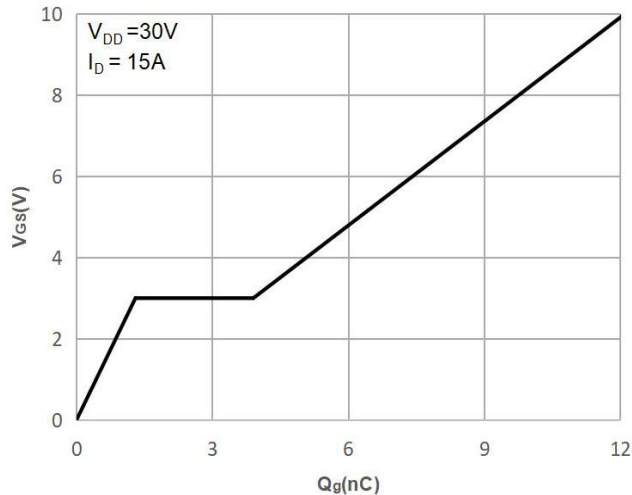
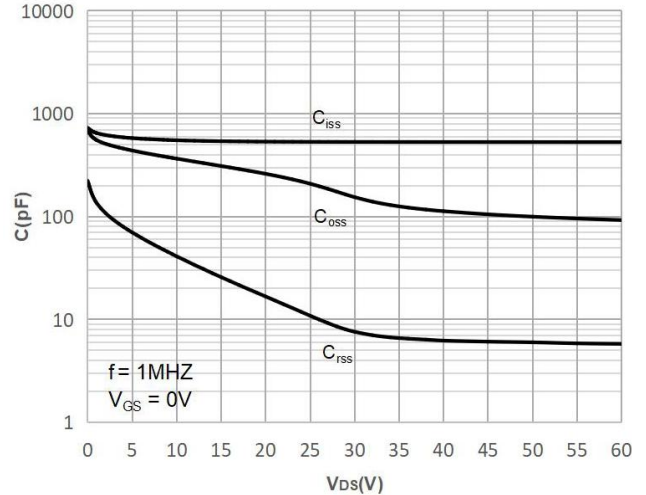


Figure 6: Capacitance Characteristics



Typical Characteristics

Figure 7: Normalized Breakdown voltage vs. Junction Temperature

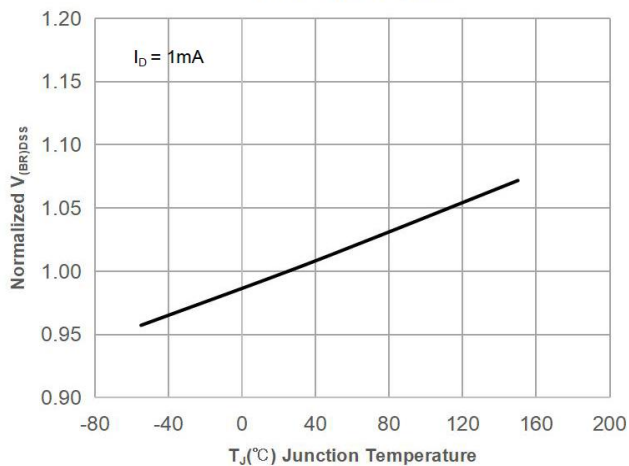


Figure 8: Normalized on Resistance vs. Junction Temperature

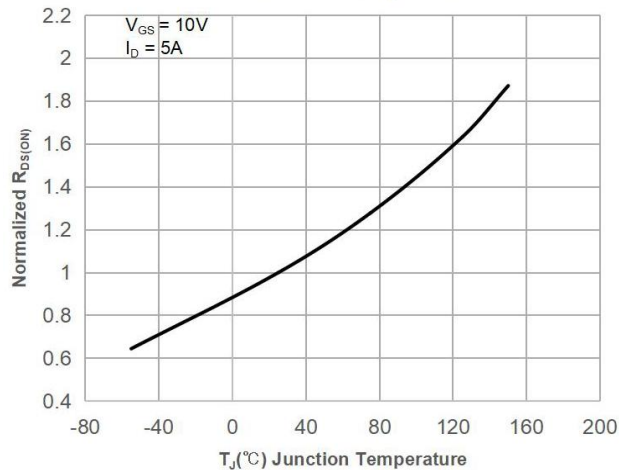


Figure 9: Maximum Safe Operating Area

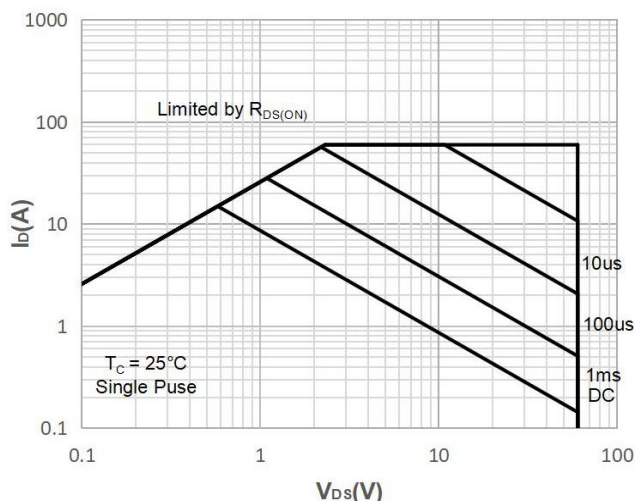


Figure 10: Maximum Continuous Driant Current vs. Case Temperature

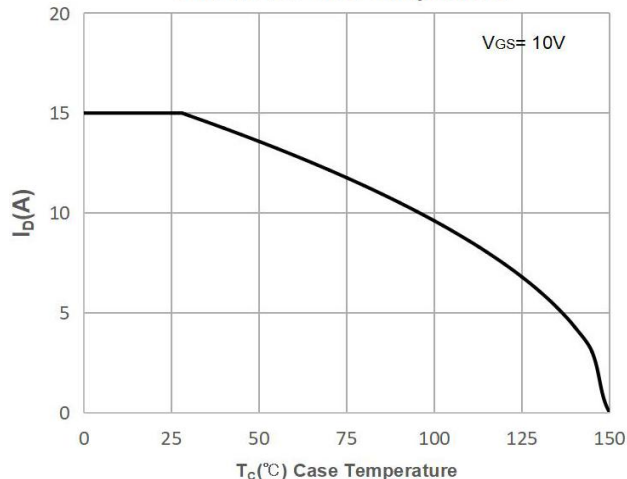


Figure 11: Normalized Maximum Transient Thermal Impedance

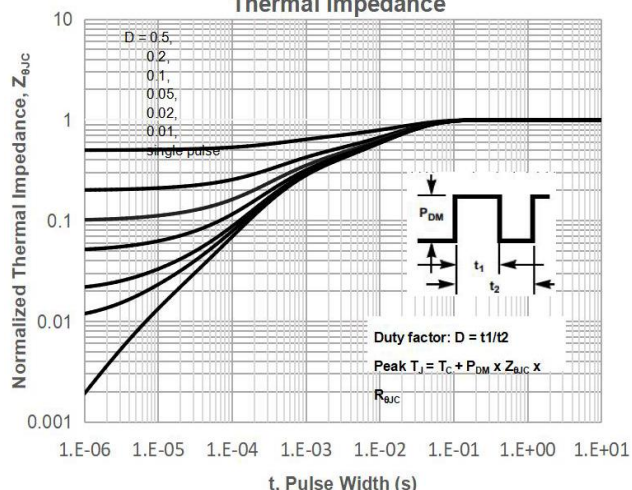
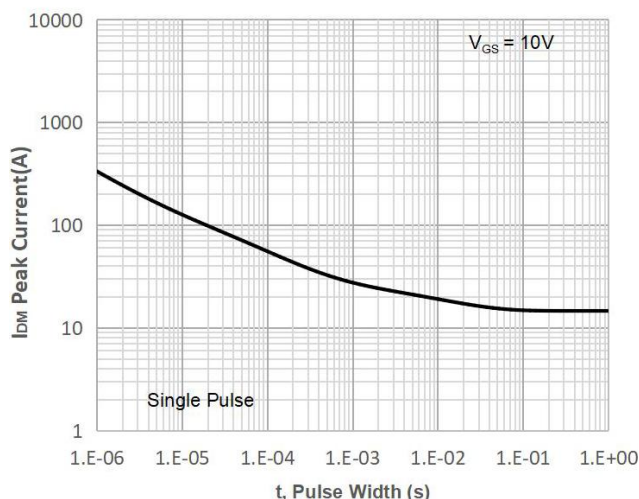
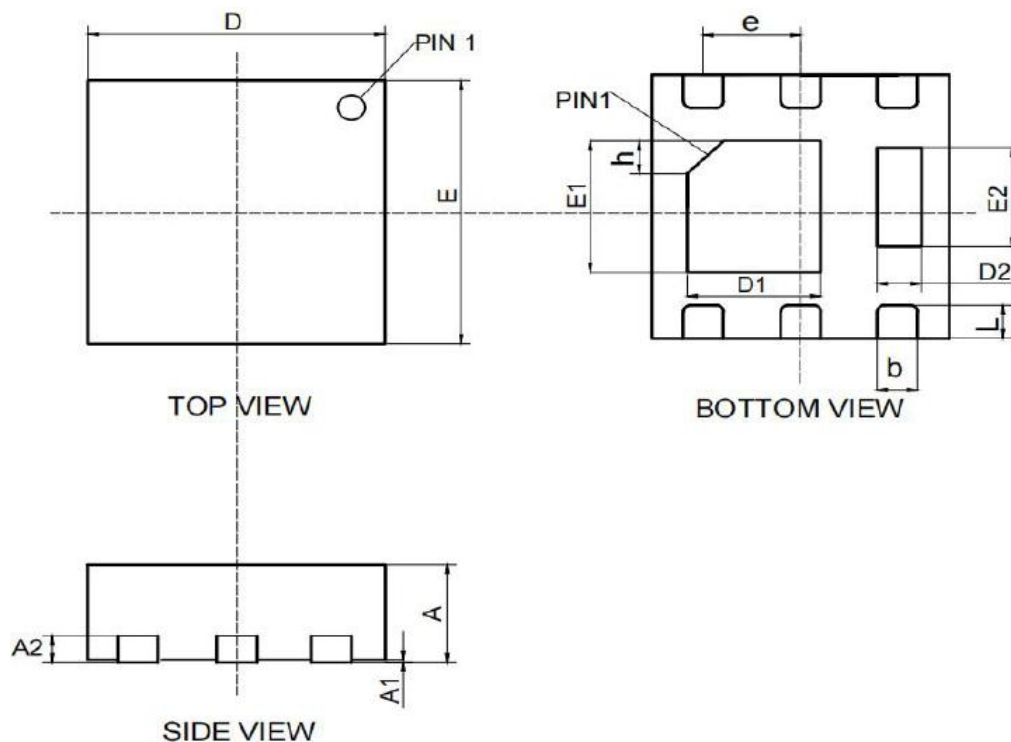


Figure 12: Peak Current Capacity



DFN2*2-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A2	0.180	0.250	0.007	0.010
b	0.200	0.340	0.008	0.013
D	1.950	2.050	0.077	0.081
D1	0.800	1.000	0.031	0.039
e	0.650 BSC.		0.026 BSC.	
E	1.950	2.050	0.077	0.081
E1	0.900	1.100	0.035	0.043
E2	0.650	0.850	0.026	0.033
L	0.200	0.350	0.008	0.014
h	0.200	0.300	0.008	0.012