

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
40V	15mΩ@10V	10A
	22mΩ@4.5V	

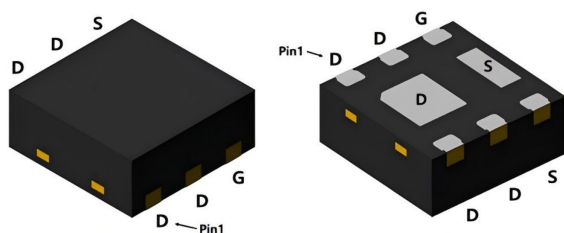
Feature

- Low On-resistance
- Low input capacitance

Application

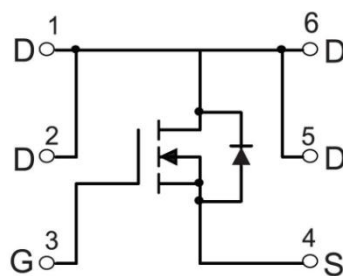
- Power management functions
- DC-DC Converters

Package

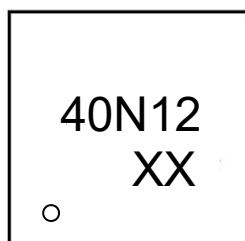


DFN2*2-6L

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	10	A
Pulsed Drain Current	I_{DM}	40	A
Power Dissipation	P_D	2.4	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	52	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

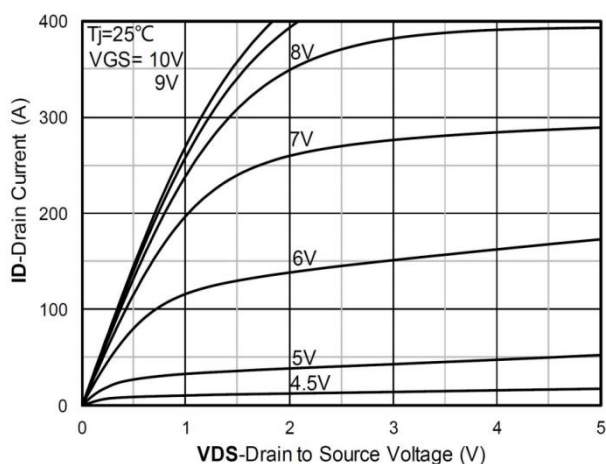
Electrical characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	40			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =32V, V _{GS} =0V, T _J =25℃			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	2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A		12	15	mΩ
		V _{GS} =4.5V, I _D =4A		16	22	
Dynamic characteristics ¹⁾						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f =1MHz		1013		pF
Output Capacitance	C _{oss}			109		
Reverse Transfer Capacitance	C _{rss}			96		
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =4.5V, I _D =8A		22.9		nC
Gate-Source Charge	Q _{gs}			3.5		
Gate-Drain Charge	Q _{gd}			5.3		
Turn-on delay time	t _{d(on)}	V _{DS} =15V, V _{GS} =10V, I _D =8A R _G =1.5Ω		5.5		nS
Turn-on rise time	t _r			14		
Turn-off delay time	t _{d(off)}			24		
Turn-off fall time	t _f			12		
Source-Drain Diode characteristics						
Diode forward current	I _S				10	A
Diode forward voltage	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25℃			1.2	V

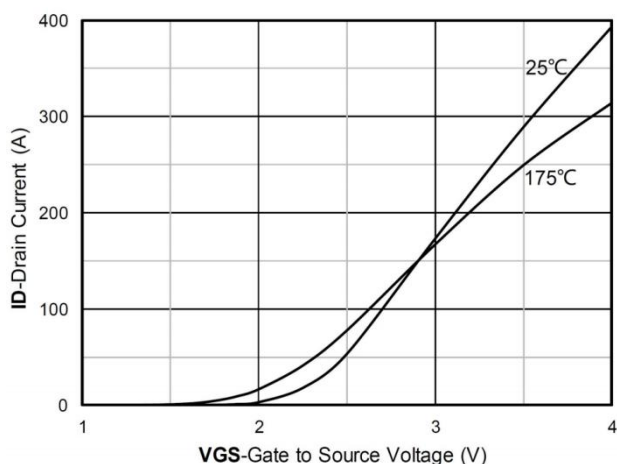
Notes:

1) Guaranteed by design, not subject to production.

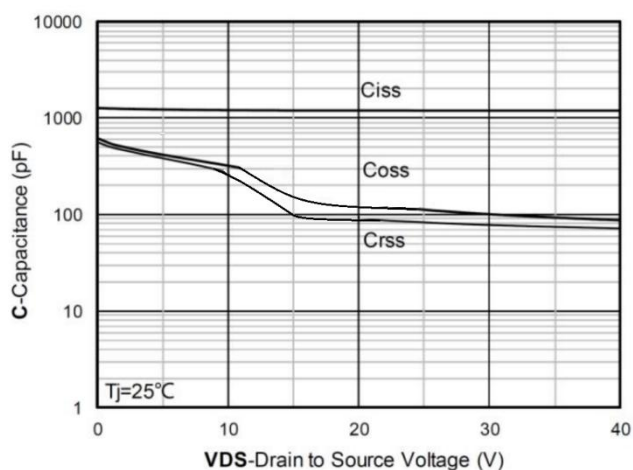
Typical Characteristics



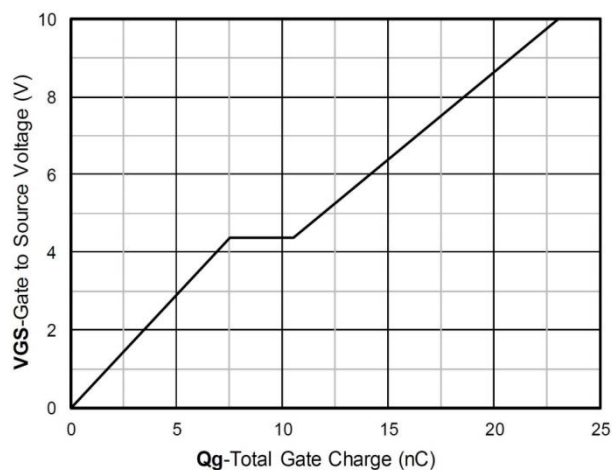
Output Characteristics



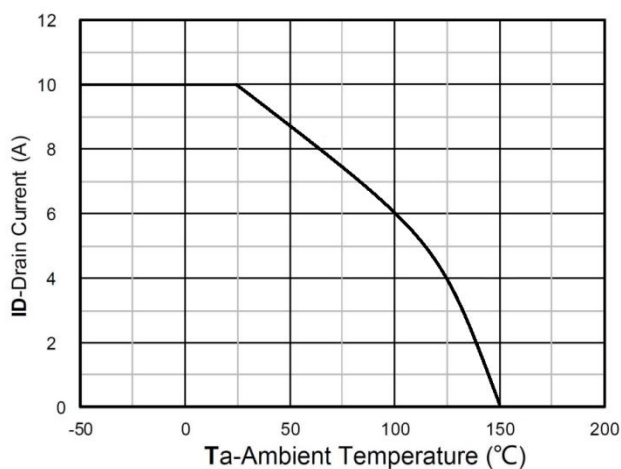
Transfer Characteristics



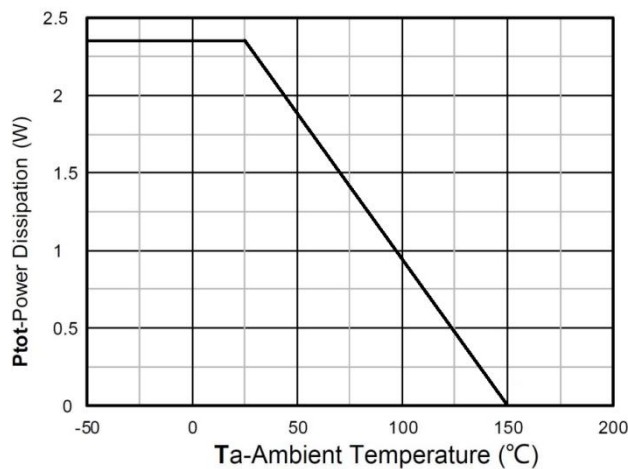
Capacitance Characteristics



Gate Charge

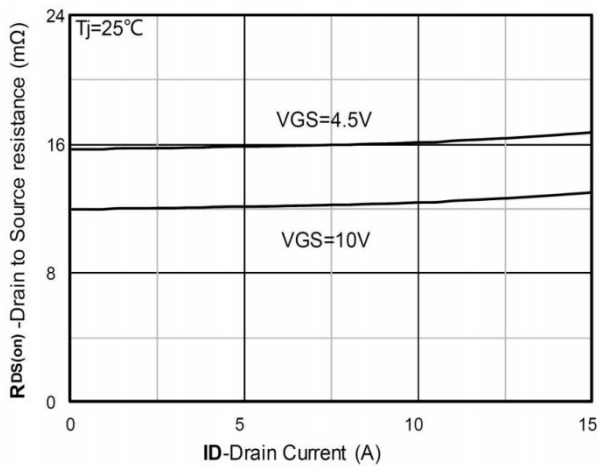


Current dissipation

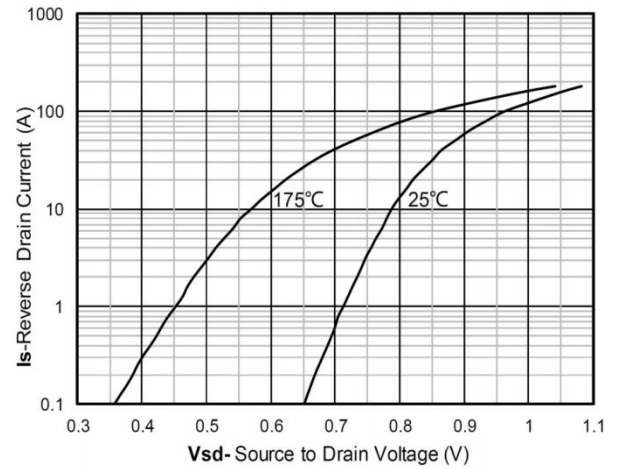


Power dissipation

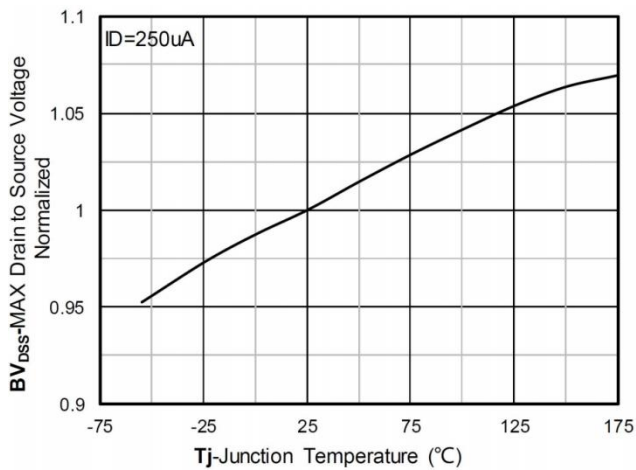
Typical Characteristics



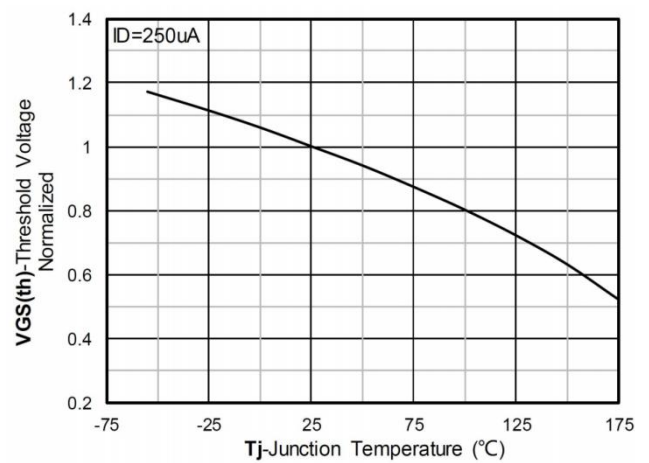
RDS(on) VS Drain Current



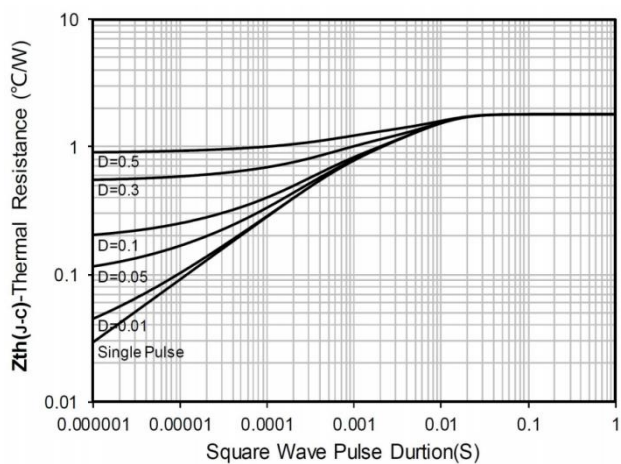
Forward characteristics of reverse diode



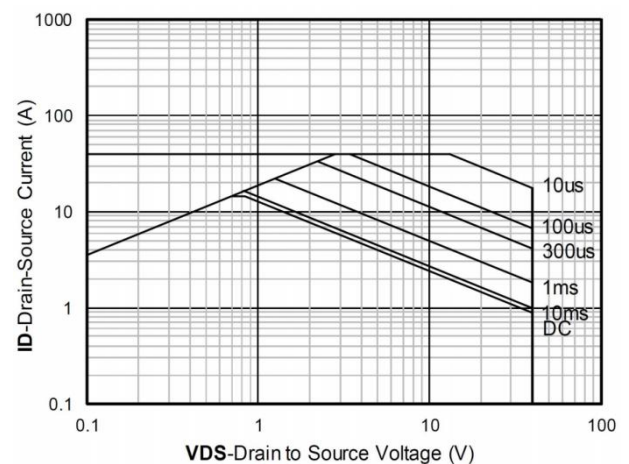
Normalized breakdown voltage



Normalized Threshold voltage

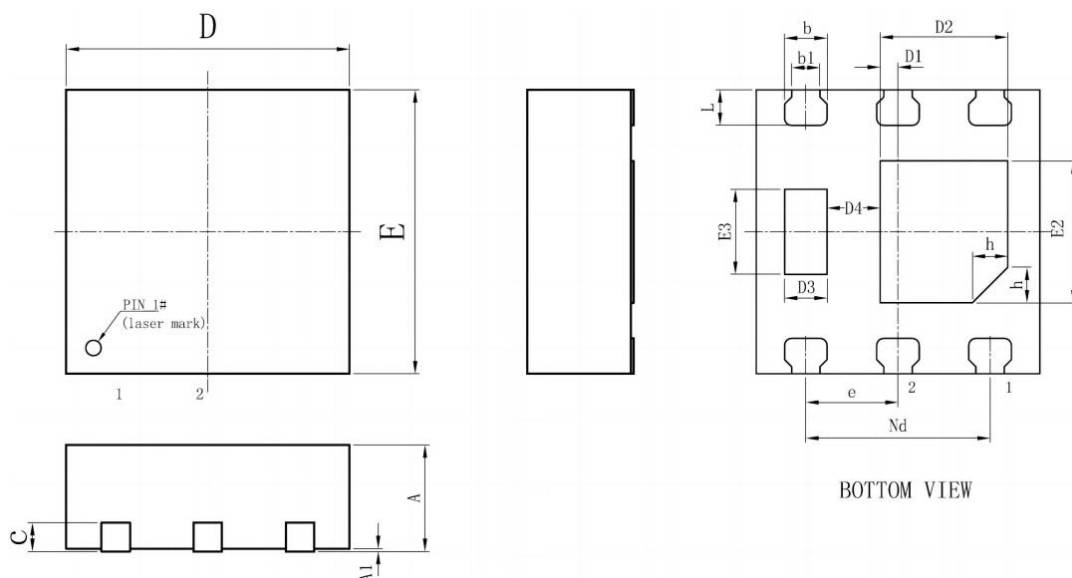


Maximum Transient Thermal Impedance



Safe Operation Area

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	-	0.050	-	0.002
b	0.250	0.350	0.010	0.014
b1	0.200 REF.		0.008 REF.	
c	0.203 REF.		0.008 REF.	
D	1.900	2.100	0.075	0.083
D1	0.080	0.180	0.003	0.007
D2	0.850	0.950	0.033	0.037
D3	0.250	0.350	0.010	0.014
D4	0.330	0.430	0.013	0.017
e	0.650 BSC.		0.026 BSC.	
Nd	1.300 BSC.		0.051 BSC.	
E	1.900	2.100	0.075	0.083
E2	0.950	1.050	0.037	0.041
E3	0.550	0.650	0.022	0.026
L	0.200	0.300	0.008	0.012
h	0.250 REF.		0.010 REF.	