



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30	-	-	V
Gate-body Leakage current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	T _J =25°C	V _{DS} = -24V, V _{GS} = 0V	-	-	-1	μA
	T _J =55°C		-	-	-5	
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.6	-2.5	V
Drain-Source On-Resistance ²	R _{DS(on)}	V _{GS} = -10V, I _D = -12A	-	6.5	9.3	mΩ
		V _{GS} = -4.5V, I _D = -8A	-	9.5	14.5	
Forward Transconductance	g _{fs}	V _{DS} = -5V, I _D = -20A	-	28	-	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz	-	4320	-	pF
Output Capacitance	C _{oss}		-	529	-	
Reverse Transfer Capacitance	C _{rss}		-	487	-	
Switching Characteristics						
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f=1.0MHz	-	4.0	-	Ω
Total Gate Charge	Q _g	V _{GS} = -10V, V _{DS} = -15V, I _D = -15A	-	45	-	nC
Gate-Source Charge	Q _{gs}		-	8.5	-	
Gate-Drain Charge	Q _{gd}		-	12.8	-	
Turn-On Delay Time	t _{d(on)}	V _{GS} = -10V, V _{DD} = -15V, R _G = 2.5Ω, I _D = -15A	-	18.9	-	nS
Rise Time	t _r		-	15.7	-	
Turn-Off Delay Time	t _{d(off)}		-	64.8	-	
Fall Time	t _f		-	36.5	-	
Drain-Source Body Diode Characteristics						
Diode Forward Voltage ²	V _{SD}	I _S = -1A, V _{GS} = 0V	-	-	-1	V
Continuous Source Current ^{1,5}	I _S	V _G =V _D =0V , Force Current	-	-	-65	A

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The EAS data shows Max. rating . The test condition is V_{DD}= -25V, V_{GS}= -10V, L= 0.1mH, I_{AS}= -25A
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.



Typical Characteristics

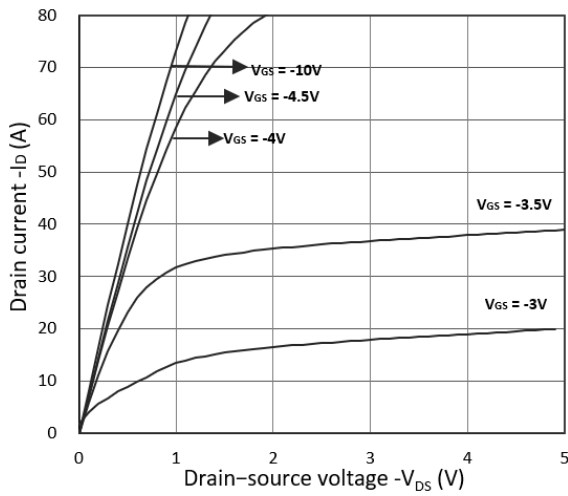


Figure 1. Output Characteristics

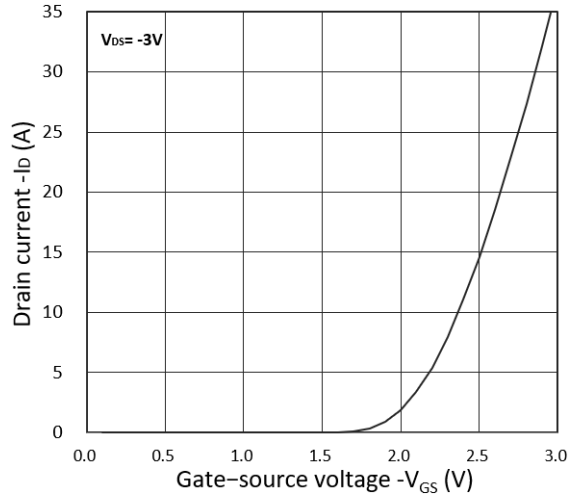


Figure 2. Transfer Characteristics

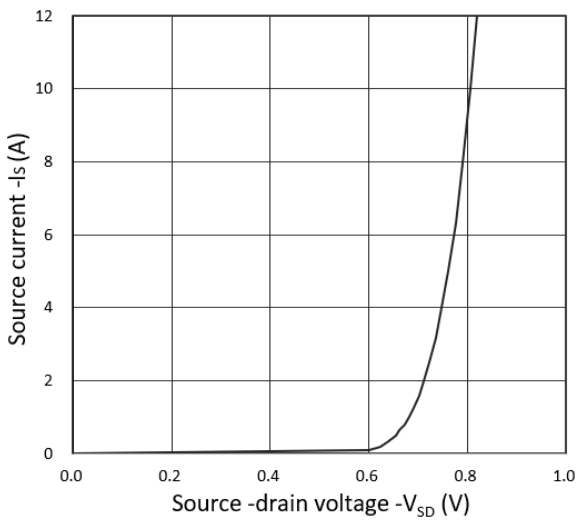


Figure 3. Forward Characteristics of Reverse

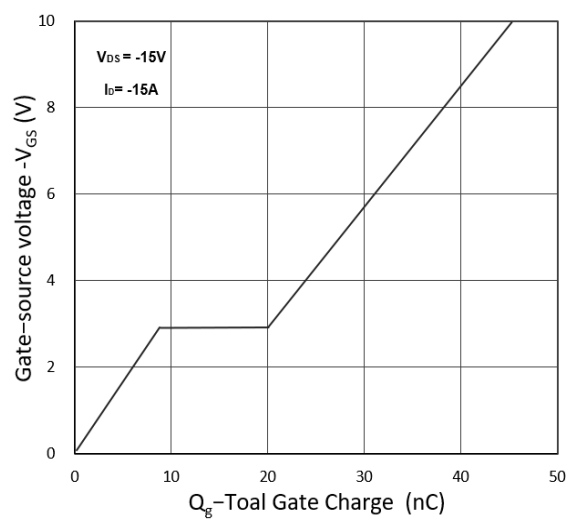


Figure 4. Gate Charge Characteristics

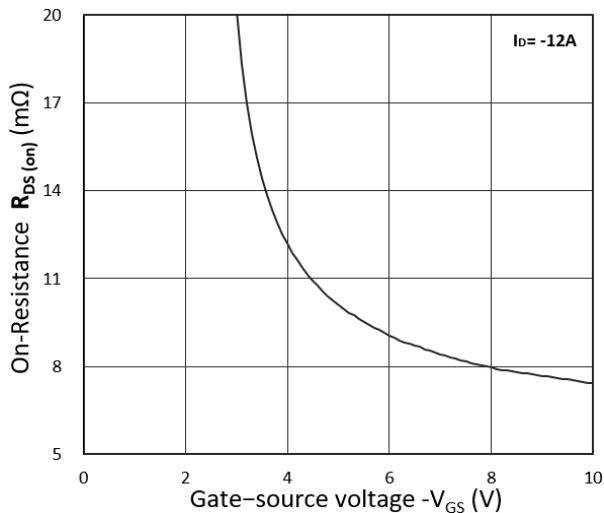


Figure 5. $R_{DS(on)}$ vs. V_{GS}

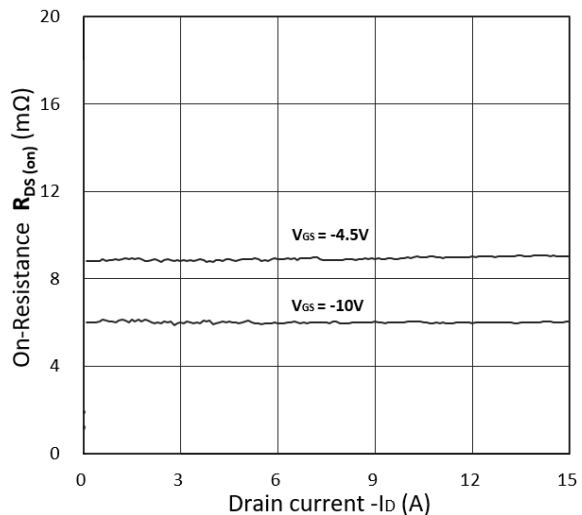


Figure 6. $R_{DS(on)}$ vs. I_D

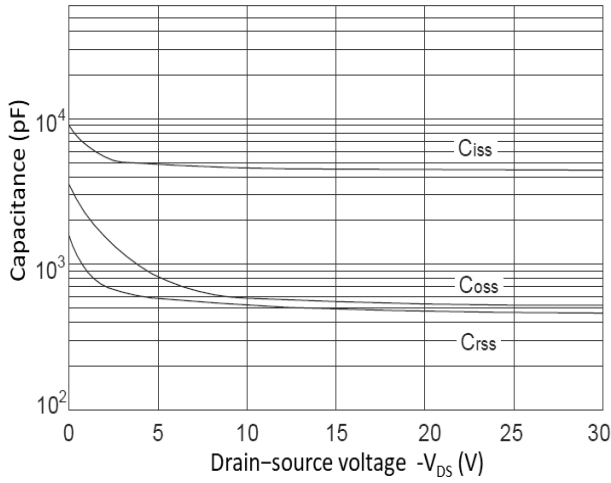


Figure 7. Capacitance Characteristics

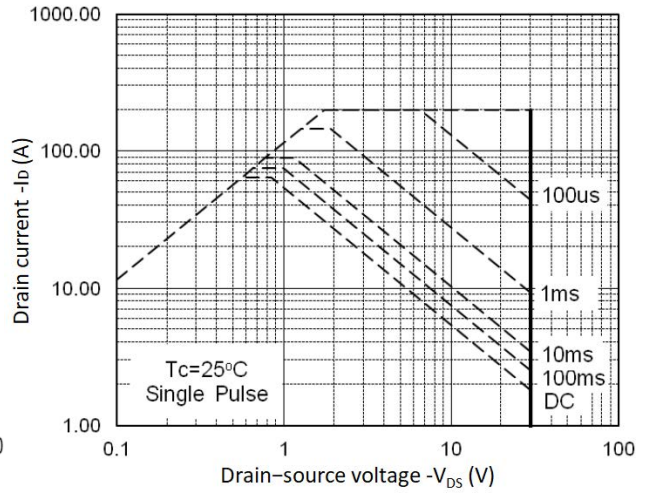


Figure 8. Safe Operating Area

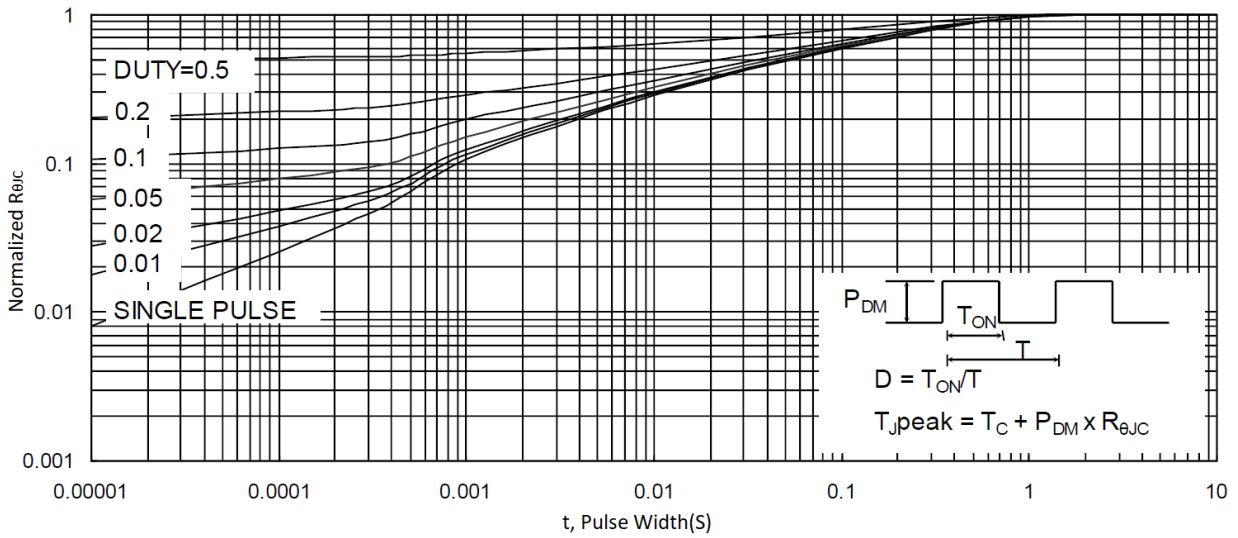


Figure 9. Normalized Maximum Transient Thermal Impedance

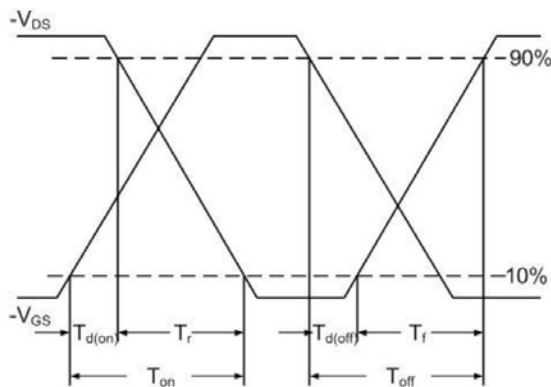


Figure 10. Switching Time Waveform

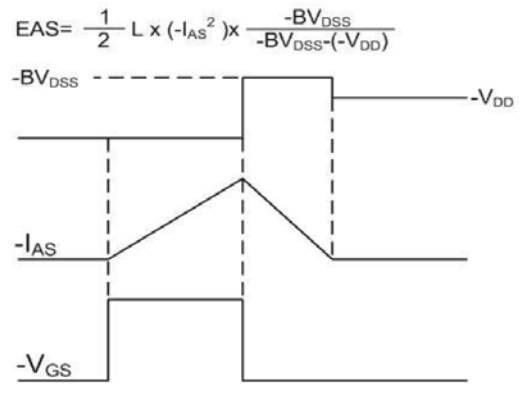
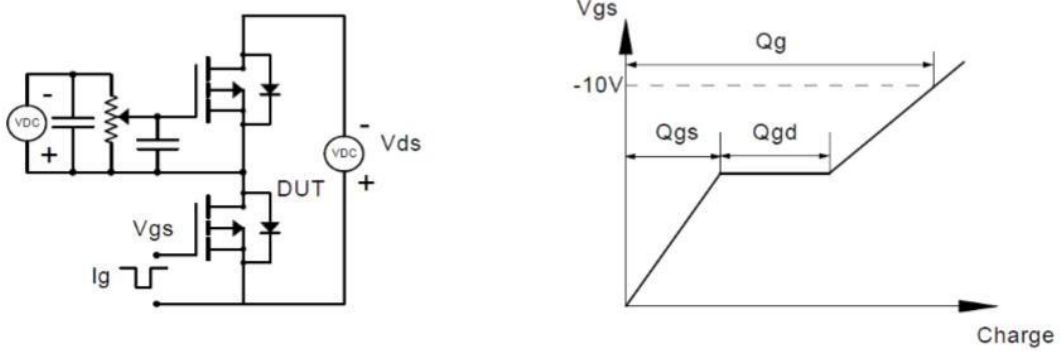


Figure 11. Unclamped Inductive Switching
Waveform

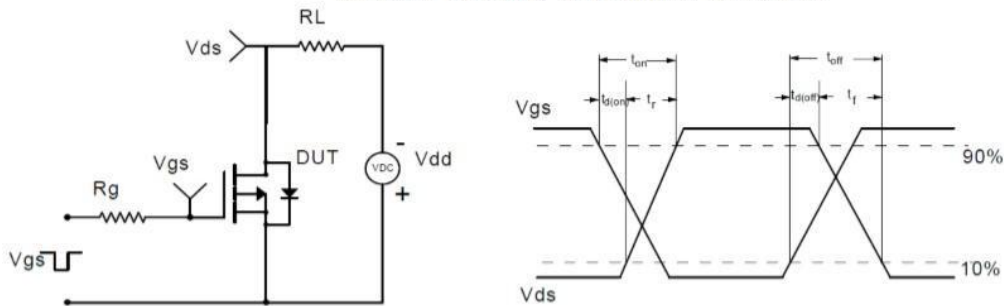


Test Circuit

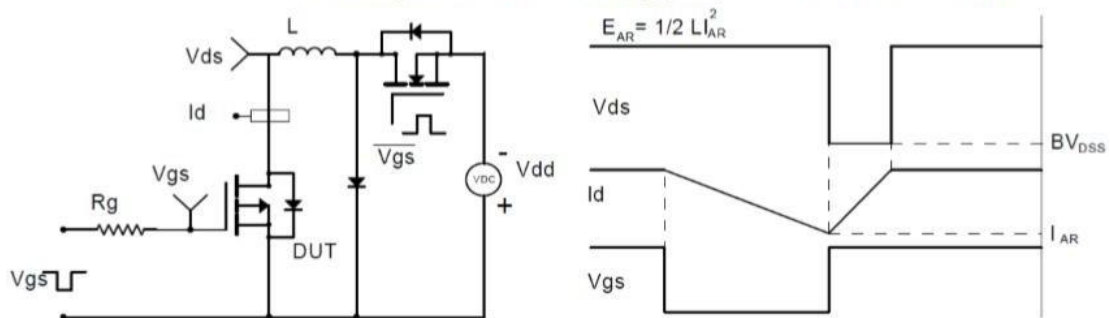
Gate Charge Test Circuit & Waveform



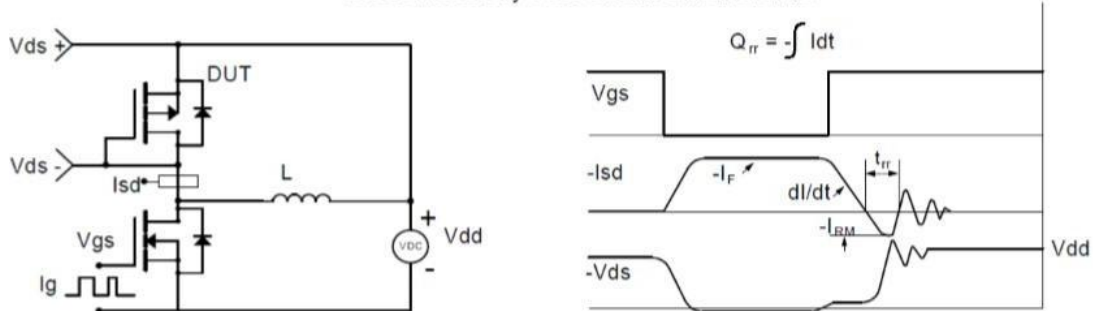
Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms

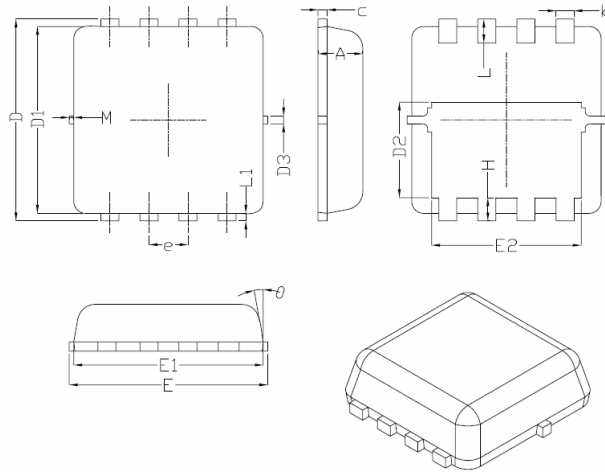


Diode Recovery Test Circuit & Waveforms





DFN3X3-8L Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.48	1.58	1.68
D3	-	0.13	-
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	-	0.13	-
M	*	*	0.15
θ		10°	12°



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