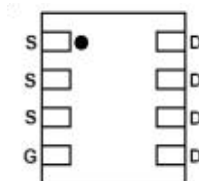
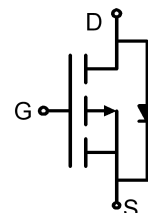


Main Product Characteristics:

V_{DSS}	-30V
$R_{DS(on)}$	26mΩ(typ.)
I_D	-7A


DFN3×3-8L

Pin Assignments

Schematic Diagram
Features and Benefits

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute Max Rating:

Symbol	Parameter	Max.	Units
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$ ①	-7	A
I_{DM}	Pulsed Drain Current②	-40	
$P_D @ T_C = 25^\circ C$	Power Dissipation③	3.1	W
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-to-Source Voltage	± 25	V
$T_J \quad T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	°C

Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
R _{θJA}	Junction-to-Ambient ^④	—	40	°C/W

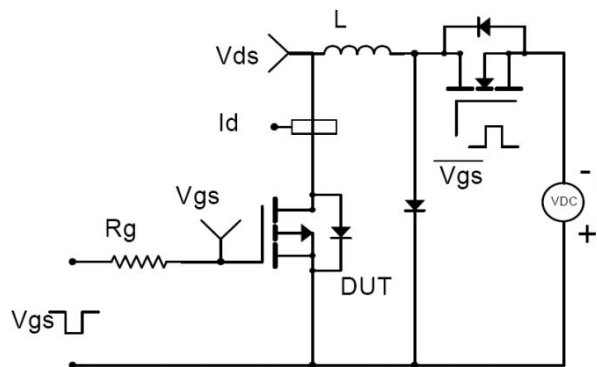
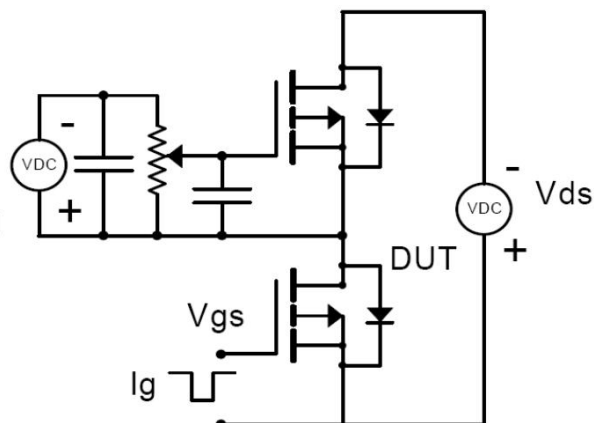
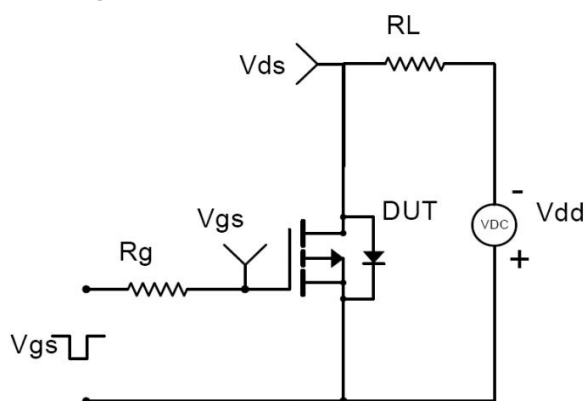
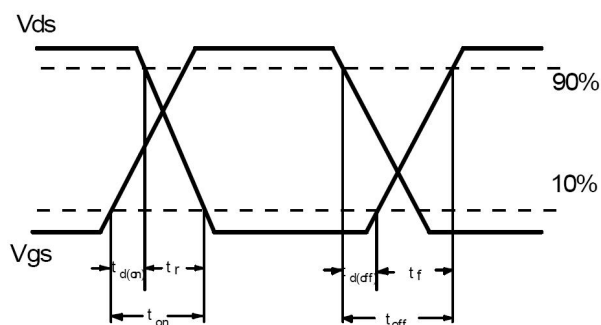
Electrical Characterizes @T_A=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	-30	—	—	V	V _{GS} = 0V, I _D = -250μA
R _{DS(on)}	Static Drain-to-Source on-resistance	—	26	36	mΩ	V _{GS} =-4.5V, I _D =-6A
		—	14	18	mΩ	V _{GS} =-10V, I _D =-8A
V _{GS(th)}	Gate threshold voltage	-1.7	—	-3	V	V _{DS} =V _{GS} , I _D =-250μA
I _{DSS}	Drain-to-Source leakage current	—	—	-1	μA	V _{DS} =-30V, V _{GS} =0V
I _{GSS}	Gate-to-Source forward leakage	—	—	±100	nA	V _{GS} =±25V, V _{DS} =0V
g _{fs}	Forward Trans conductance	—	18	—	S	V _{DS} =-5V, I _D =-10A
Q _g	Total gate charge	—	18	—	nC	V _{DS} =-15V
Q _{gs}	Gate-to-Source charge	—	5	—		I _D =-10A
Q _{gd}	Gate-to-Drain("Miller") charge	—	3.5	—		V _{GS} =-10V
t _{d(on)}	Turn-on delay time	—	10	—	nS	V _{DS} =-15V, V _{GS} =-10V, R _{GEN} =3Ω, I _D =-1A
t _r	Rise time	—	9	—		
t _{d(off)}	Turn-Off delay time	—	22	—		
t _f	Fall time	—	8	—		
C _{iss}	Input capacitance	—	1200	—	pF	V _{DS} =-15V V _{GS} =0V f=1.0MHz
C _{oss}	Output capacitance	—	260	—		
C _{rss}	Reverse transfer capacitance	—	145	—		
T _{rr}	Body Diode Reverse Recovery Time	—	24	—	nS	I _F =-10A, dI/dt=100A/μs
Q _{rr}	Body Diode Reverse Recovery Charge	—	12	—	nC	

Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	-7	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I _{SM}	Pulsed Source Current (Body Diode)	—	—	-40	A	
V _{SD}	Diode Forward Voltage	—	—	-1.4	V	

Test Circuits and Waveforms

EAS Test Circuit:

Gate Charge Test Circuit:

Switching Time Test Circuit:

Switching Waveforms:


Notes:

- ① Calculated continuous current based on maximum allowable junction temperature.
- ② Repetitive rating; pulse width limited by max. junction temperature.
- ③ The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.
- ④ The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ }^\circ\text{C}$

Typical Electrical and Thermal Characteristics

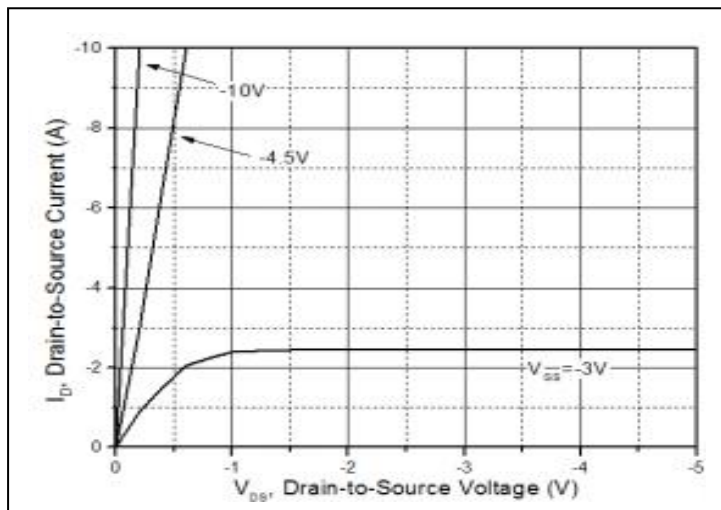


Figure1. Typical Output Characteristics

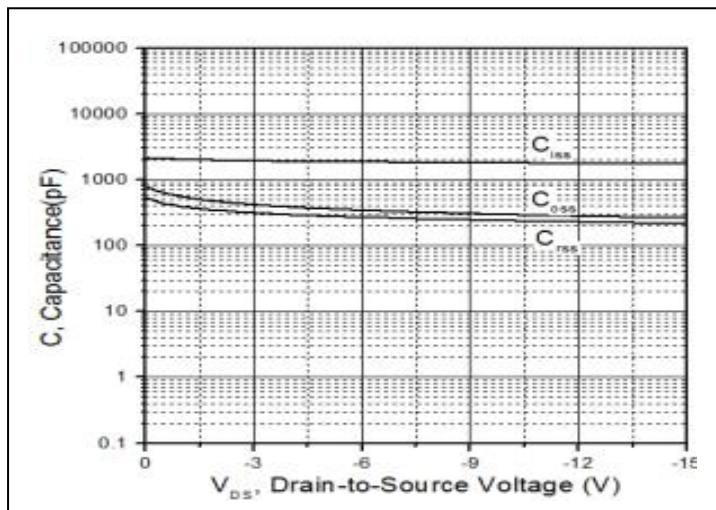


Figure2. Capacitance vs Vds

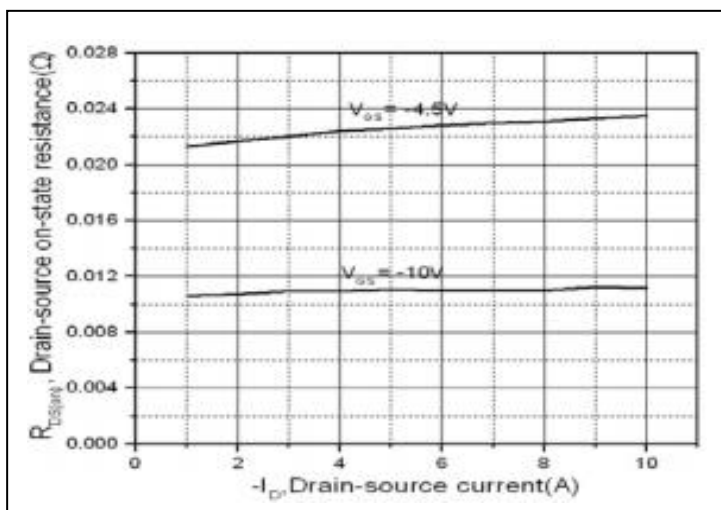


Figure3. Drain-Source On-Resistance

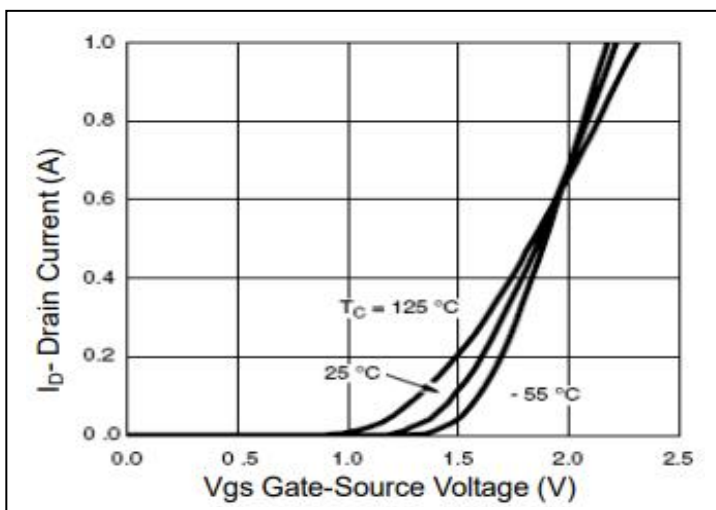


Figure4. Typical Transfer Characteristics

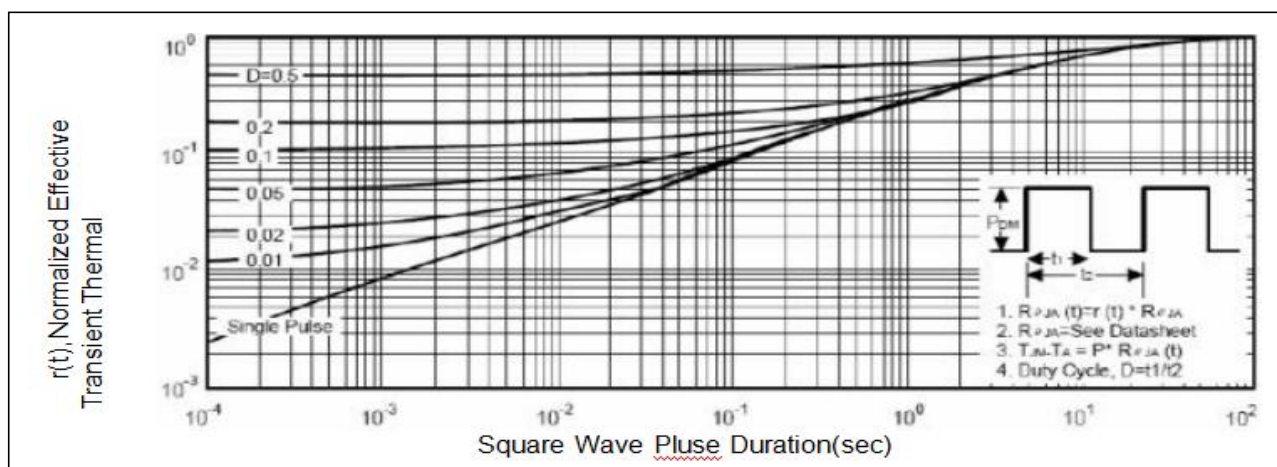
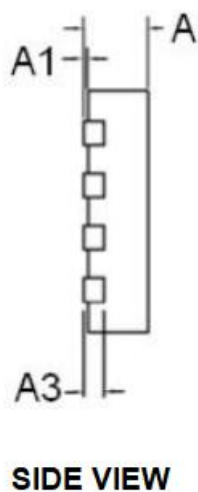
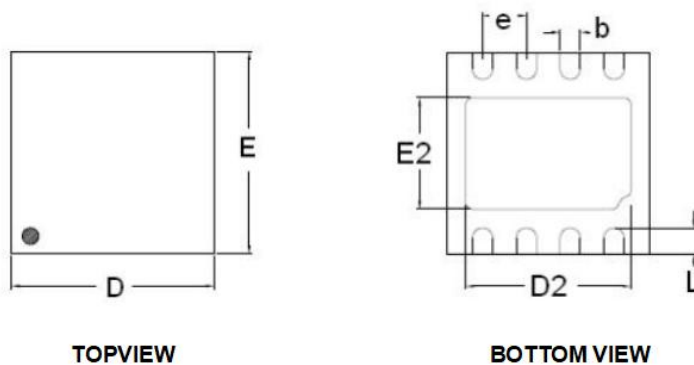


Figure5. Normalized Maximum Transient Thermal Impedance

Mechanical Data:
DFN3x3-8LPACKAGEINFORMATION


COMMON DIMENSIONS (MM)			
PKG.	W: VERYVERYTHIN		
REF.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80
A1	0.00	—	0.05
A3	0.2REF.		
D	2.95	3.00	3.05
E	2.95	3.00	3.05
b	0.25	0.30	0.35
L	0.30	0.40	0.50
D2	2.30	2.45	2.55
E2	2.50	1.65	1.75
e	0.65BSC		

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