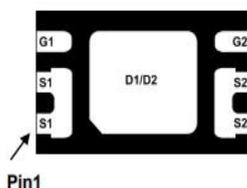
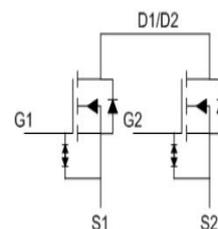


Main Product Characteristics:

V_{DSS}	20V
$R_{DS(on)}$	6.6m Ω (typ.)
I_D	11A


DFN2*3-6L

Marking and 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
$I_D @ TC = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$ ①	11	A
I_{DM}	Pulsed Drain Current ②	70	
$P_D @ TC = 25^\circ C$	Power Dissipation ③	1.56	
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-to-Source Voltage	12	V
$T_J \quad T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ C$

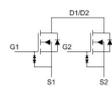
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
R _{θJA}	Junction-to-ambient (t ≤ 10s) ④	—	80	°C/W

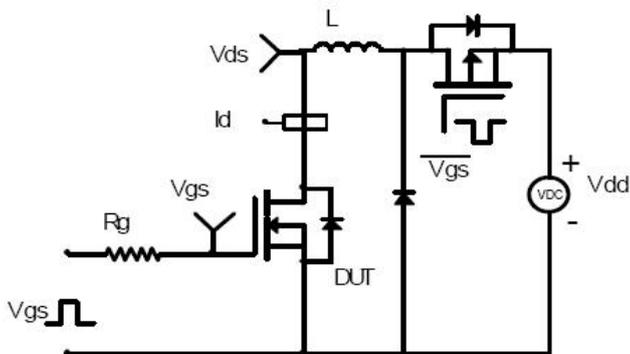
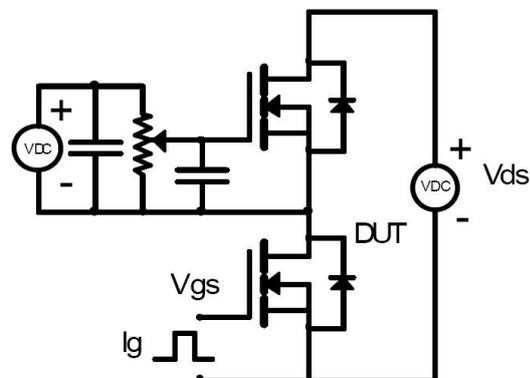
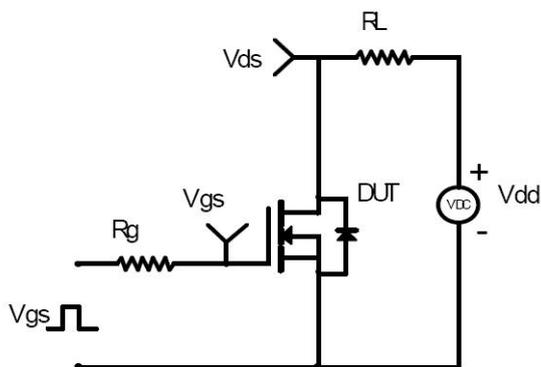
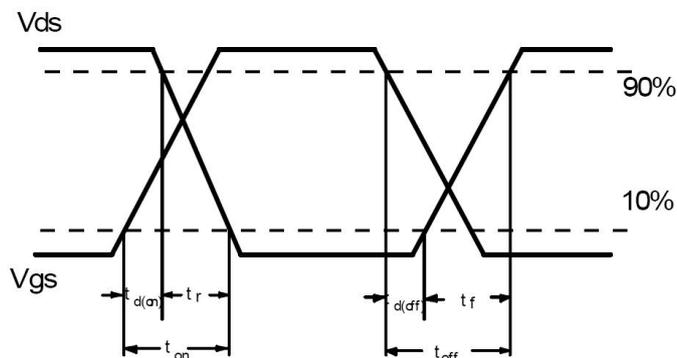
Electrical Characterizes @T_A=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	20	—	—	V	V _{GS} = 0V, I _D = 250μA
R _{DS(on)}	Static Drain-to-Source on-resistance	—	6.6	7.2	mΩ	V _{GS} =4.5V, I _D =5.5A
		—	7	7.5		V _{GS} =4V, I _D =5.5A
		—	7.1	8.2		V _{GS} =3.7V, I _D =5.5A
		—	7.6	9		V _{GS} =3.1V, I _D =5.5A
		—	8.7	10.2		V _{GS} =2.5V, I _D =5.5A
V _{GS(th)}	Gate threshold voltage	0.5	—	1.5	V	V _{DS} = V _{GS} , I _D =250μA
I _{DSS}	Drain-to-Source leakage current	—	—	1	μA	V _{DS} = 18V, V _{GS} = 0V
I _{GSS}	Gate-to-Source forward leakage	—	—	10	μA	V _{GS} = 8V
		—	—	-10		V _{GS} = -8V
Q _g	Total gate charge	—	23	—	nC	I _D = 11A, V _{DS} =16V, V _{GS} = 4.5V
Q _{gs}	Gate-to-Source charge	—	4	—		
Q _{gd}	Gate-to-Drain("Miller") charge	—	8	—		
t _{d(on)}	Turn-on delay time	—	10	—	ns	V _{GS} =4.5V, V _{DS} =16V, R _{GEN} =6Ω I _D = 5.5A
t _r	Rise time	—	41	—		
t _{d(off)}	Turn-Off delay time	—	65	—		
t _f	Fall time	—	30	—		
C _{iss}	Input capacitance	—	1765	—	pF	V _{GS} = 0V V _{DS} = 10V f = 1MHz
C _{oss}	Output capacitance	—	182	—		
C _{rss}	Reverse transfer capacitance	—	155	—		

Source-Drain Ratings and Characteristics

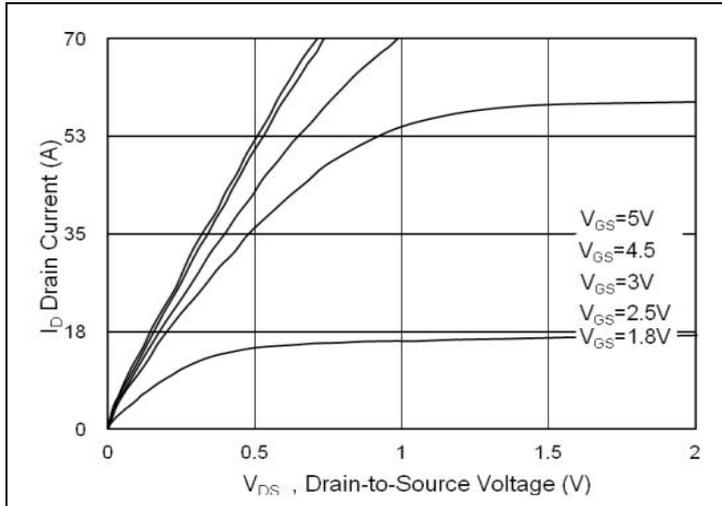
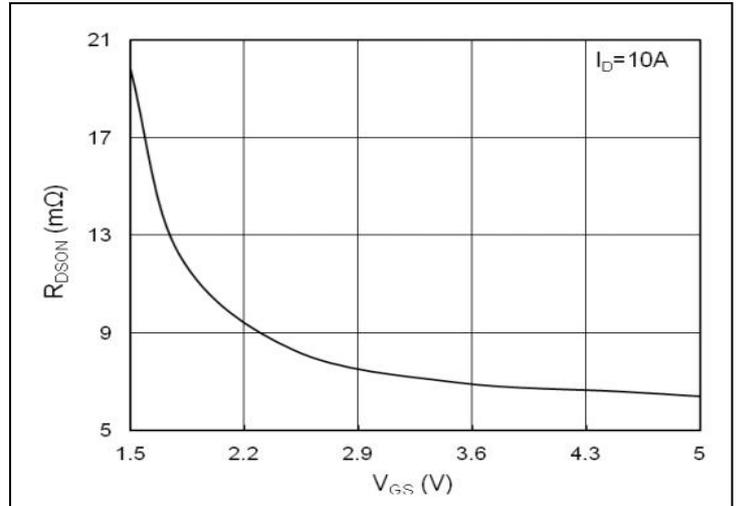
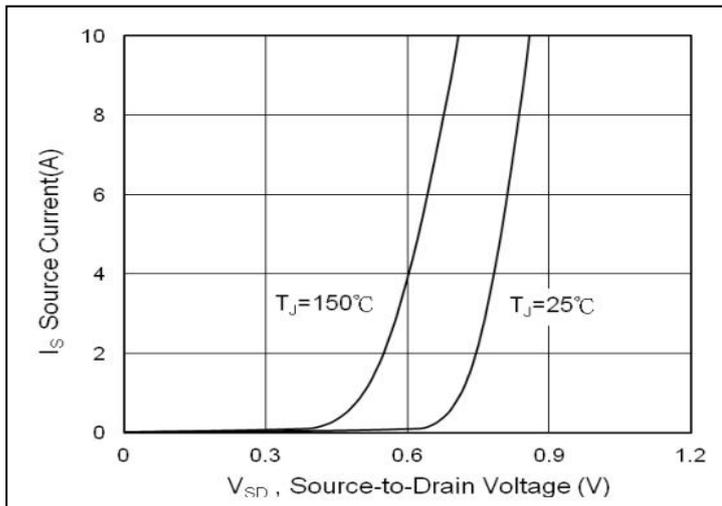
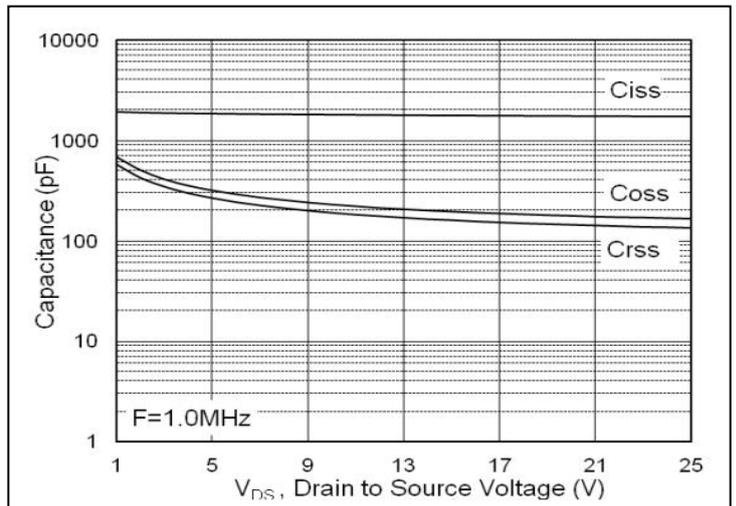
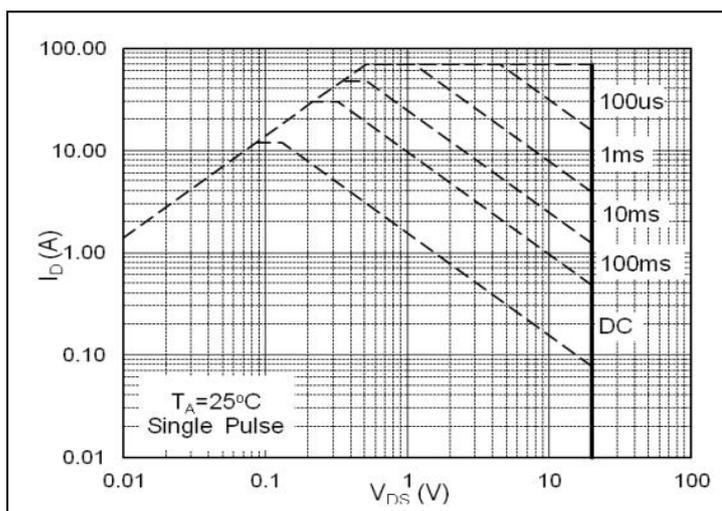
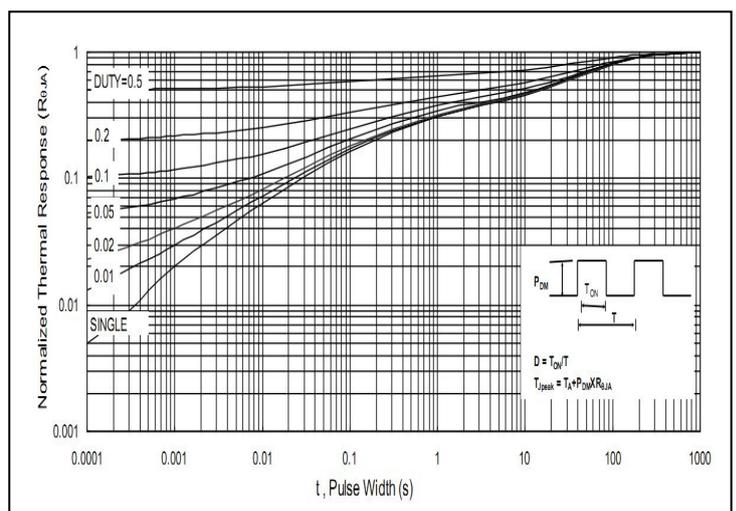
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	11	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I _{SM}	Pulsed Source Current (Body Diode)	—	—	70	A	
V _{SD}	Diode Forward Voltage	—	—	1	V	

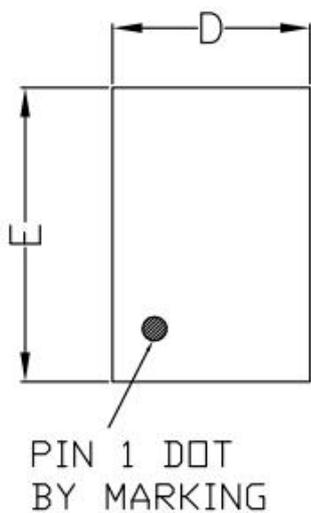
Test Circuits and Waveforms

EAS Test Circuit:

Gate Charge Test Circuit:

Switching Time Test Circuit:

Switching Waveforms:


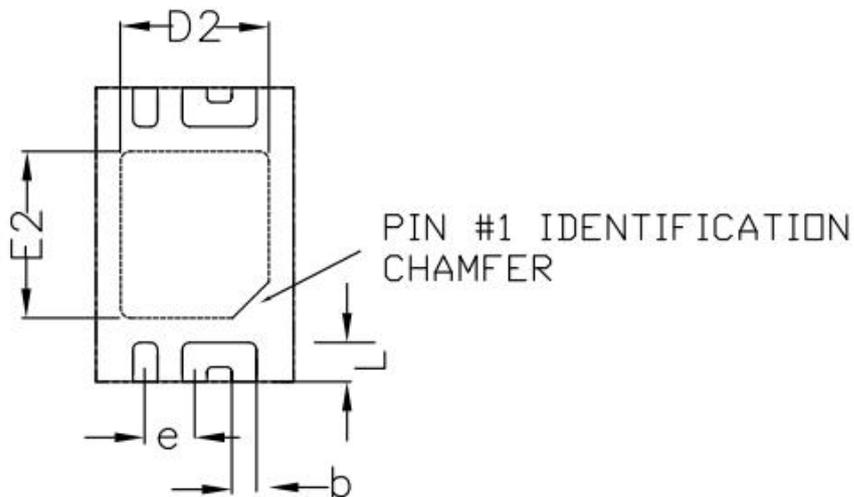
Notes:

- 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 $T_A = 25^\circ\text{C}$

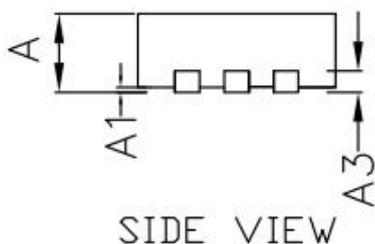
Typical Electrical and Thermal Characteristics

Figure1. Typical Output Characteristics

Figure2. R_{DS(on)} vs. Gate-Source Voltage

Figure3. Forward Characteristics of Reverse

Figure4. R_{DS(on)} vs. Drain Current

Figure5. Safe Operating Area

Figure6. Transient Thermal Impedance

Mechanical Data:


TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS(MM)			
PKG.	W:VERY VERY THIN		
REF.	MIN.	NOM.	MAX
A	0.70	0.75	0.80
A1	0.00	-	0.05
A3	0.195	0.203	0.211
D	1.95	2.00	2.05
E	2.95	3.00	3.05
b	0.20	0.25	0.30
L	0.35	0.40	0.45
D2	1.45	1.50	1.55
E2	1.65	1.70	1.75
e	0.50 BSC		

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