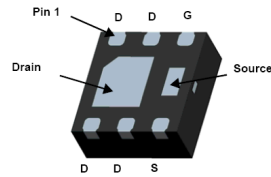
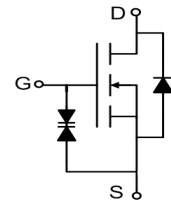


Main Product Characteristics:

V_{DSS}	20V
$R_{DS(on)}$	18 mΩ(typ.)
I_D	6.5A


DFN2x2-6L Pin Assignment

Schematic diagram
Features and Benefits:

- Advanced trench MOSFET process technology
- Special designed for battery charge, load switching in cellular handset and general ultraportable applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest trench 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 battery charge and load switching in cellular handset and a wide variety of other ultraportable applications

Absolute max Rating:

Symbol	Parameter	Max.	Units
$I_D @ TC = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$ ①	6.5	A
$I_D @ TC = 100^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$ ①	3.9	
I_{DM}	Pulsed Drain Current②	30	
$P_D @ TC = 25^\circ C$	Power Dissipation③	1.4	W
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-to-Source Voltage	± 8	V
$T_J T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	°C

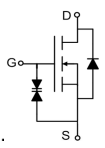
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-ambient (t ≤ 10s) ④	—	90	°C/W

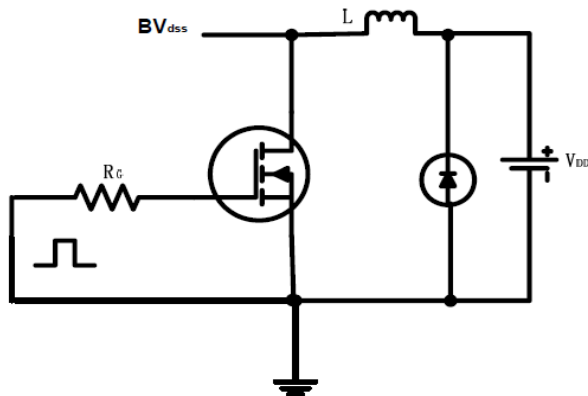
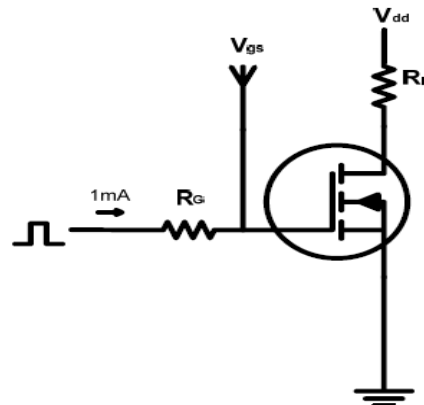
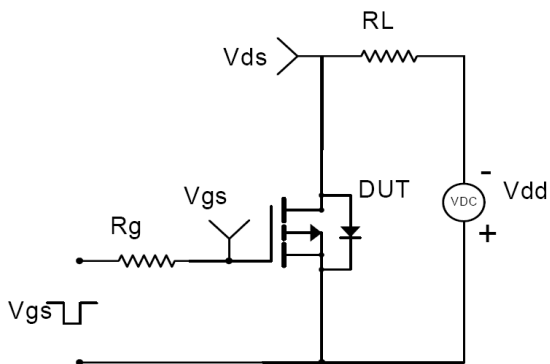
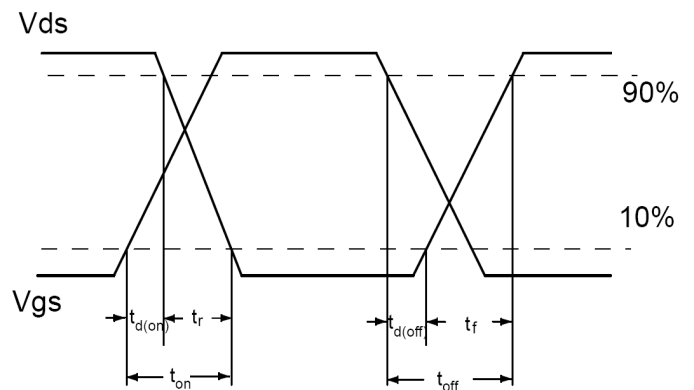
Electrical Characterizes @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	20	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	18	22	m Ω	$V_{GS} = 4.5V, I_D = 6.5A$
		—	21	30		$V_{GS} = 2.5V, I_D = 5.5A$
$V_{GS(th)}$	Gate threshold voltage	0.4	0.6	1	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
I_{DSS}	Drain-to-Source leakage current	—	—	1	μA	$V_{DS} = 20V, V_{GS} = 0V$
I_{GSS}	Gate-to-Source forward leakage	—	—	10	μA	$V_{GS} = 8V$
		—	—	-10		$V_{GS} = -8V$
g_{FS}	Forward Transconductance	—	7	—	S	$V_{DS} = 5V, I_D = 6.5A$
Q_g	Total gate charge	—	10	—	nC	$I_D = 6.5A,$ $V_{DD} = 10V,$ $V_{GS} = 4.5V$
Q_{gs}	Gate-to-Source charge	—	2.3	—		
Q_{gd}	Gate-to-Drain("Miller") charge	—	3	—		
$t_{d(on)}$	Turn-on delay time	—	6.5	—	nS	$V_{GS} = 5V,$ $V_{DD} = 10V,$ $I_D = 1A,$ $R_{GEN} = 3\Omega$
t_r	Rise time	—	13	—		
$t_{d(off)}$	Turn-Off delay time	—	50	—		
t_f	Fall time	—	30	—		
C_{iss}	Input capacitance	—	1160	—	pF	$V_{GS} = 0V$ $V_{DS} = 10V$ $f = 1MHz$
C_{oss}	Output capacitance	—	200	—		
C_{riss}	Reverse transfer capacitance	—	140	—		

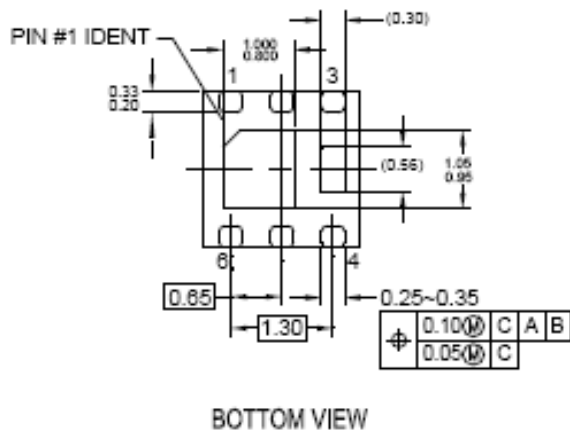
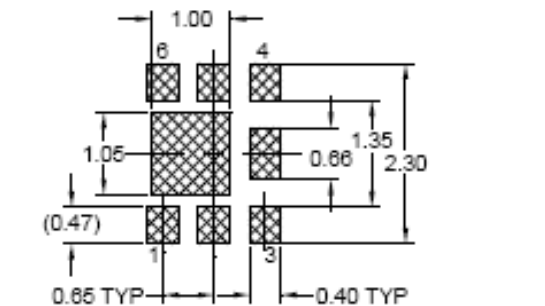
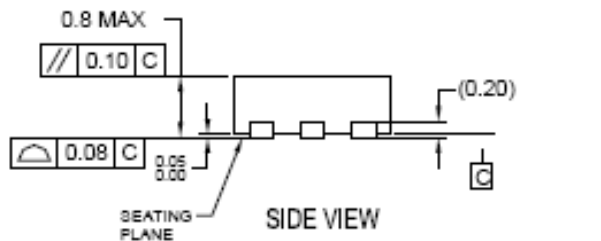
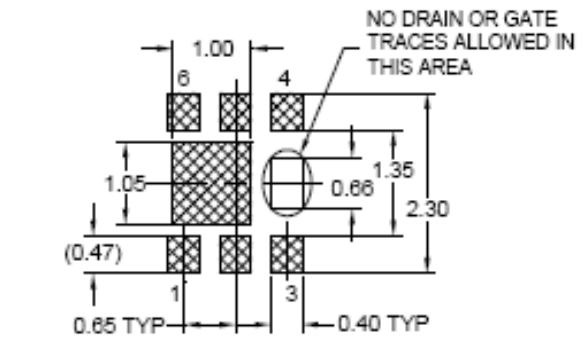
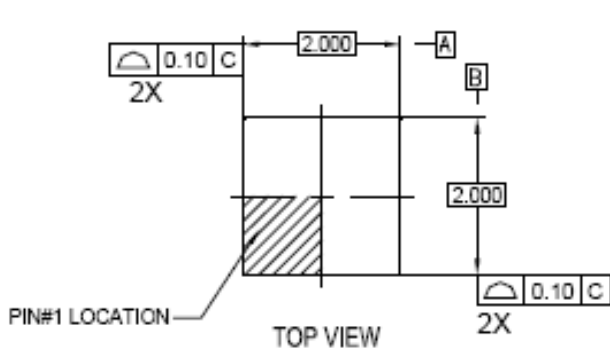
Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	6.5	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode)	—	—	30	A	
V_{SD}	Diode Forward Voltage	—	0.76	1	V	$I_S = 1A, V_{GS} = 0V$
t_{rr}	Reverse Recovery Time	—	—	—	nS	$T_J = 25^{\circ}\text{C}, I_F = -A,$ $di/dt = 100A/\mu s$
Q_{rr}	Reverse Recovery Charge	—	—	—	μC	

Test circuits and Waveforms

EAS test circuits:

Gate charge test circuit:

Switch time test circuit:

Switch Waveforms:

Notes:

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

Mechanical Data:
DFN 2 x 2-6L PACKAGE INFORMATION

Notes:

- ① Does not fully conform to JEDEC registration MO-229 dated Aug/2003.
- ② Dimensions are in millimeters.
- ③ Dimensions and tolerances per ASME Y14.5M. 1994.

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