



### Product Summary

V <sub>(BR)DSS</sub>	R <sub>DS(on)TYP</sub>	I <sub>D</sub>
-20V	30mΩ@-4.5V	-5A
	40mΩ@-2.5V	
	70mΩ@-1.8V	

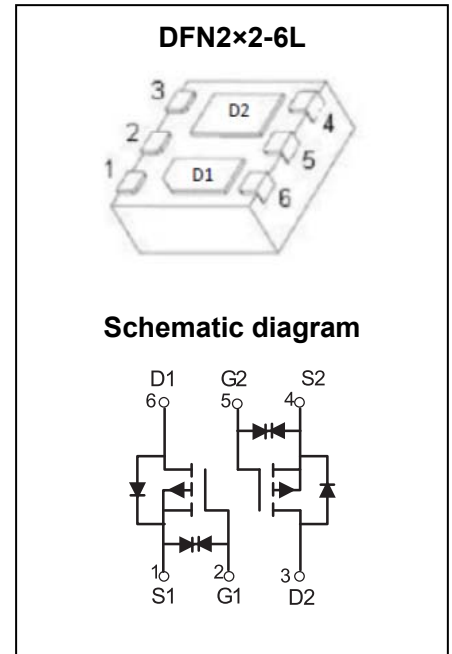
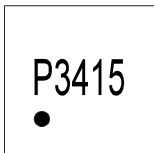
### Feature

- Trench Technology Power MOSFET
- Low R<sub>DS(ON)</sub>
- Low Gate Charge
- Low Gate Resistance

### Application

- DC/DC Converter
- Power Management

### MARKING:



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V <sub>DS</sub>	-20	V
Gate - Source Voltage	V <sub>GS</sub>	±10	V
Continuous Drain Current <sup>1,5</sup>	I <sub>D</sub>	-5	A
Pulsed Drain Current <sup>2</sup>	I <sub>DM</sub>	-20	A
Power Dissipation <sup>5</sup>	P <sub>D</sub>	2	W
Thermal Resistance from Junction to Ambient <sup>5</sup>	R <sub>θJA</sub>	62.5	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

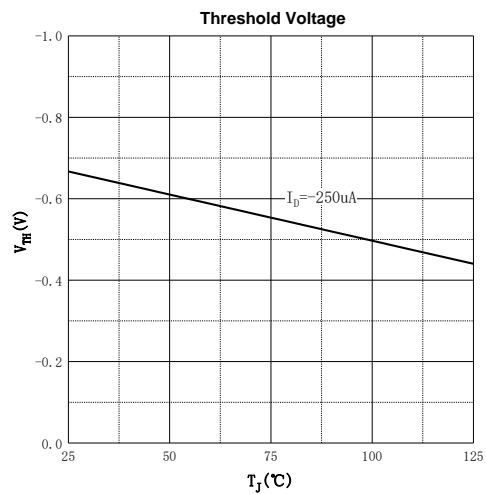
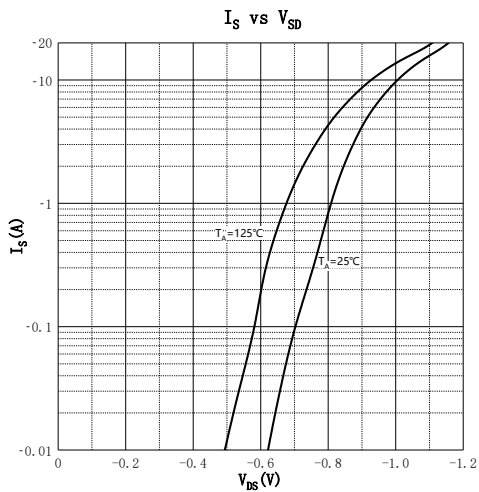
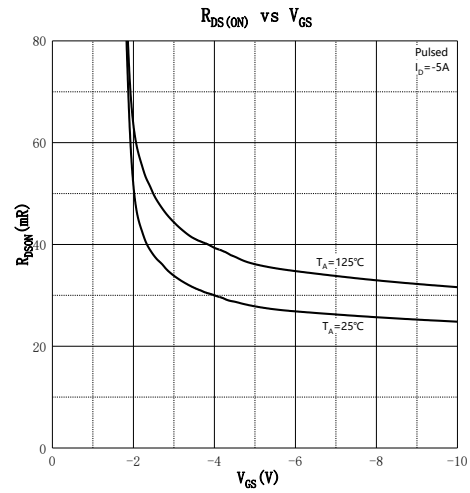
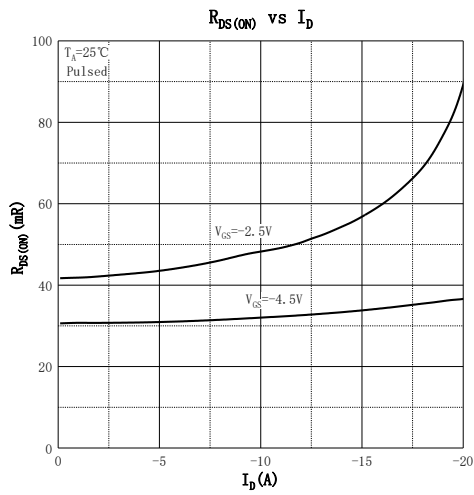
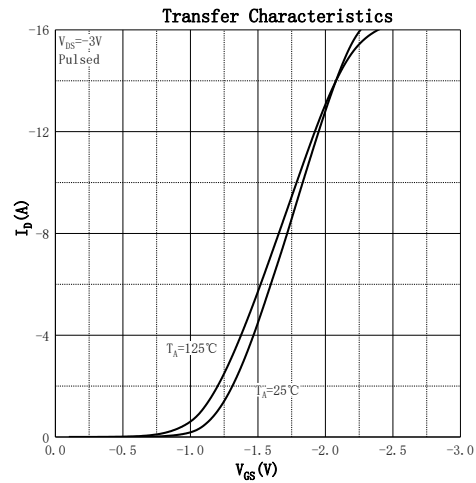
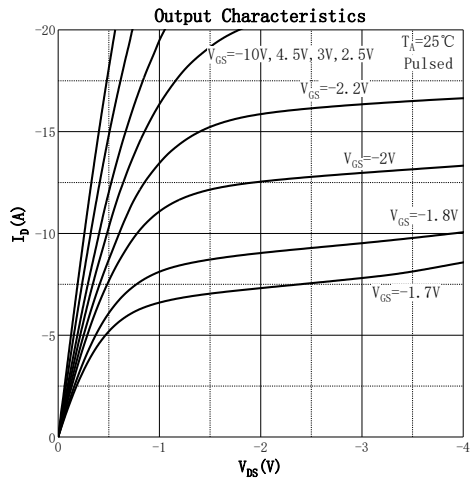
**MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -16V, V_{GS} = 0V$			-1	$\mu A$
Gate - Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 5$	$\mu A$
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.3	-0.6	-1	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -4.0A$		30	50	m $\Omega$
		$V_{GS} = -2.5V, I_D = -4.0A$		40	60	
		$V_{GS} = -1.8V, I_D = -2.0A$		70	100	
Forward Transconductance	$g_{FS}$	$V_{DS} = -4.5V, I_D = -4.0A$	2			S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, V_{GS} = 0V, f = 1MHz$		820		pF
Output Capacitance	$C_{oss}$			138		
Reverse Transfer Capacitance	$C_{rss}$			123		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		5		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -5.0A$		17		nC
Gate-source Charge	$Q_{gs}$			1.2		
Gate-drain Charge	$Q_{gd}$			4.7		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V,$ $R_L = 2\Omega, R_G = 3\Omega$		9.4		ns
Turn-on Rise Time	$t_r$			18		
Turn-off Delay Time	$t_{d(off)}$			80		
Turn-off Fall Time	$t_f$			40		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = -1.0A$			-1.2	V

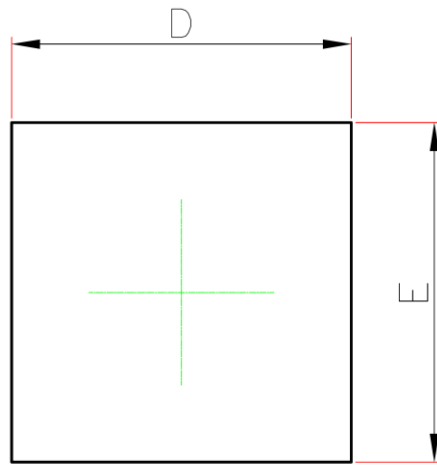
Notes :

- 1.The maximum current rating is limited by Chip.
- 2.Pulse Test : Pulse Width  $\leq 10\mu s$ , duty cycle  $\leq 1\%$ .
- 3.Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- 4.The power dissipation  $P_D$  is limited by  $T_{J(MAX)} = 150^\circ\text{C}$ .
- 5.Device mounted on  $1in^2$  FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ\text{C}$ .

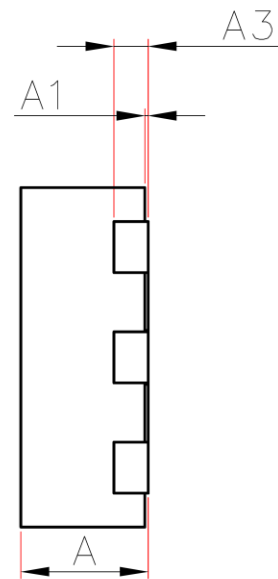
## Typical Characteristics



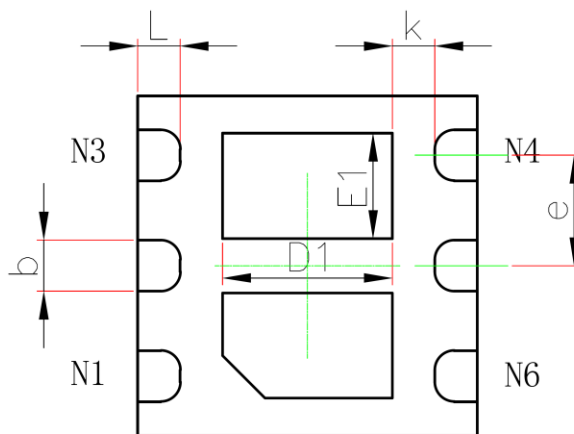
## DFN2×2-6L Package Information



TOP VIEW



SIDE VIEW



BOTTOM VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0	0.050	0	0.002
A3	2.03REF		0.008REF	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
k	0.200MIN		0.008MIN	
b	0.250	0.350	0.010	0.014
e	0.65BSC		0.026TYP	
L	0.174	0.326	0.007	0.013