

### Features

- $V_{DS} = -17V, I_D = -6.8A$   
 $R_{DS(ON)} < 35m\Omega @ V_{GS} = -4.5V$   
 $R_{DS(ON)} < 45m\Omega @ V_{GS} = -2.5V$   
 $R_{DS(ON)} < 72m\Omega @ V_{GS} = -1.8V$
- Package: SOT-23

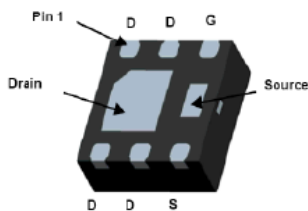
### Applications

- Battery protection
- Load switch
- Power management

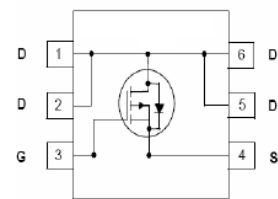


### Ordering Information

Part Number	Qty per Reel	Reel Size
TPM9665D6	3000	7"



DFN2X2-6L



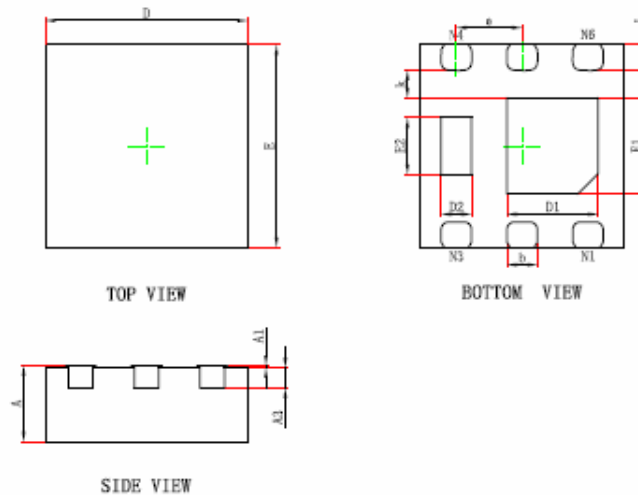
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Symbol	Parameter	Value	Unit
V <sub>DS</sub>	Drain-source Voltage	-17	V
V <sub>GS</sub>	Gate-source Voltage	±10	V
I <sub>D</sub>	Drain Current	-6.8	A
P <sub>D</sub>	Total Power Dissipation	2.5	W
R <sub>thJA</sub>	Thermal Resistance From Junction To Ambient	55	°C/W
T <sub>J</sub>	Operation Junction Temperature	-55~+150	°C
T <sub>STG</sub>	Storage Temperature	-55~+150	°C

**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$		-17		
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-16V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}= \pm 10V, V_{DS}=0V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}= -4.5V, I_D=-6.8A$		25	35	m $\Omega$
		$V_{GS}= -2.5V, I_D=5A$		36	45	
		$V_{GS}= -1.8V, I_D=2A$		45	72	
Diode Forward Voltage	$g_{FS}$	$V_{DS}=-5V, I_D=-7A$	6			S
Diode Forward Voltage <sup>C</sup>	$V_{SD}$	$I_S=-7A, V_{GS}=0V$		-0.7	-1	V
Maximum Body-Diode Continuous Current	$I_S$				-8	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1\text{MHz}$		684		pF
Output Capacitance	$C_{oss}$			108		
Reverse Transfer Capacitance	$C_{rss}$			72		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=-10V, V_{DS}=-17V, I_D=-6.8A$		7.2		nC
Gate Source Charge	$Q_{gs}$			1.2		
Gate Drain Charge	$Q_{gd}$			1.6		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V, V_{DS}=-15V, I_D=-1A, R_{GEN}=2.5\Omega$		15		ns
Turn-on Rise Time	$t_r$			63		
Turn-off Delay Time	$t_{D(off)}$			21		
Turn-off Fall Time	$t_f$			12		

**DFN2X2-6L Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013