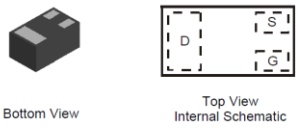
GP35K

30V N-Channel MOSFET

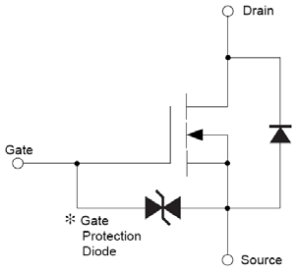
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	320mΩ@4.5V	0.6A
	410mΩ@2.5V	

DFN1006-3L



Schematic diagram



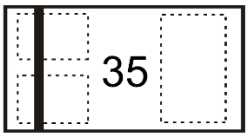
Feature

- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

MARKING:



Top View
Bar Denotes Gate
and Source Side

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	0.6	A
Pulsed Drain Current[1]	I_{DM}	1.8	A
Power Dissipation[2]	P_D	100	mW
Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	1250	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

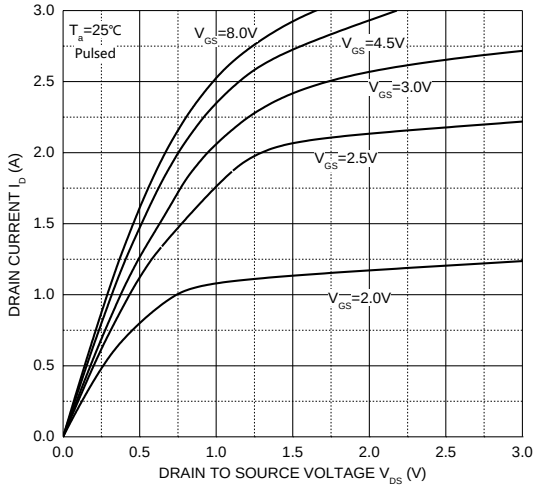
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±3	μA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	1.0	1.5	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =0.6A		320	500	mΩ
		V_{GS} =2.5V, I_D =0.3A		410	600	
Forward tranconductance	g_{FS}	V_{DS} =5V, I_D =0.5A	0.1			S
Dynamic characteristics(4)						
Input Capacitance	C_{iss}	V_{DS}=10V,V_{GS}=0V,f=1MHz		44		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			8		
Total gate charge	Q_g	V_{DS} =15V,V_{GS} =4.5V,I_D =0.8A		1.2		nC
Gate-source charge	Q_{gs}			0.28		
Gate-drain charge	Q_{gd}			0.3		
Switching Characteristics(4)						
Turn-on delay time	$t_{d(on)}$	V_{DS}=15V,I_D=0.7A, V_{GS}=4.5V,R_G=51Ω		5.0		ns
Turn-on rise time	t_r			8.2		
Turn-off delay time	$t_{d(off)}$			23		
Turn-off fall time	t_f			41		
Source-Drain Diode characteristics						
Diode Forward voltage(3)	V_{DS}	I_S=0.6A, V_{GS} = 0V		0.87	1.2	V

Notes:

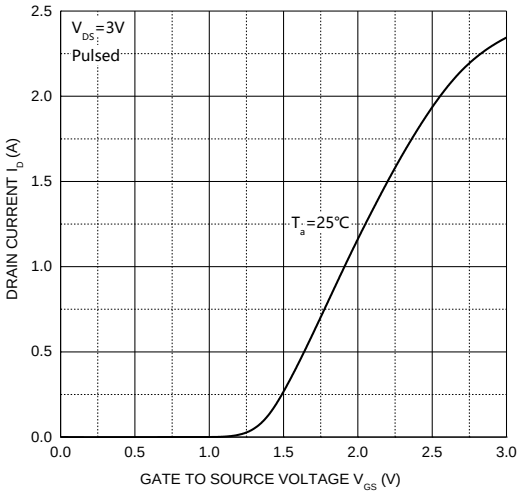
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25℃.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

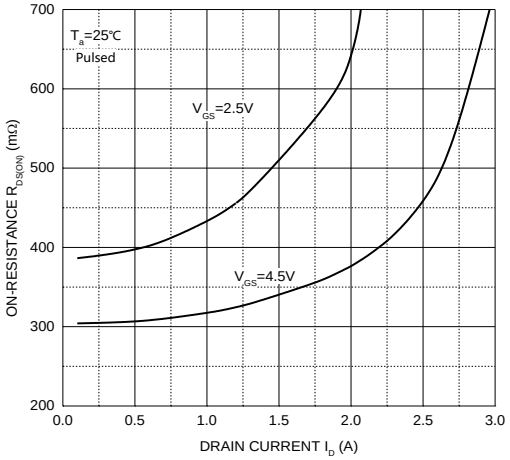
Output Characteristics



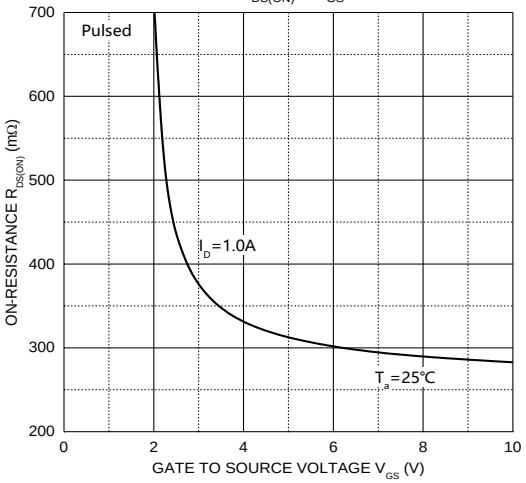
Transfer Characteristics



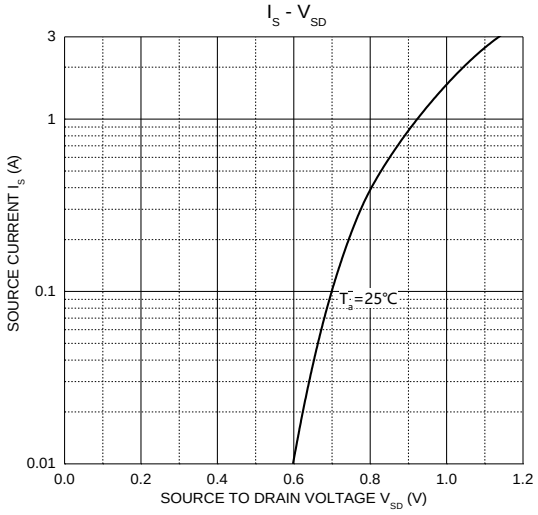
$R_{DS(ON)}$ – I_D



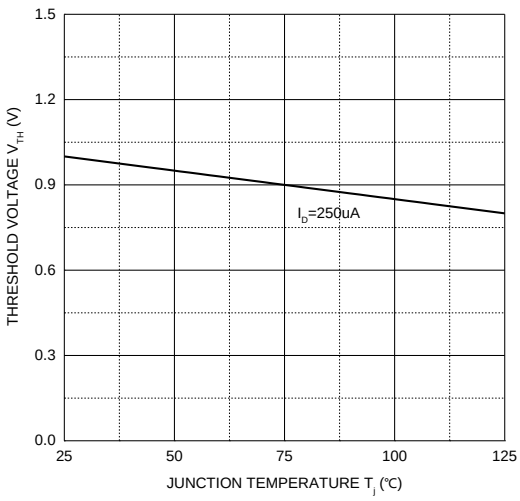
$R_{DS(ON)}$ - V_{GS}



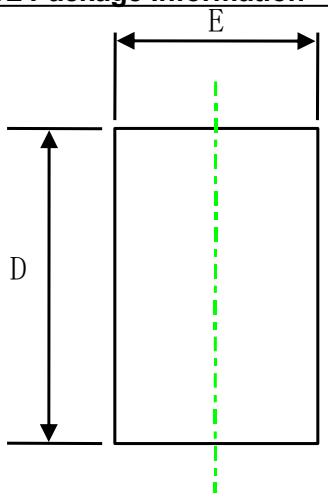
I_S - V_{SD}



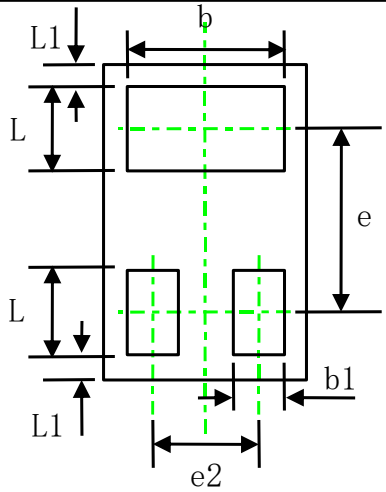
Threshold Voltage



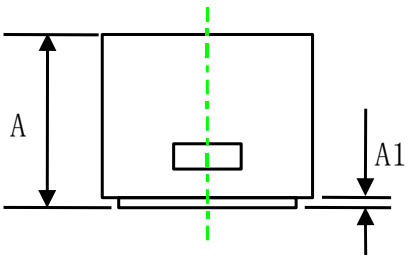
DFN1006-3L Package Information



TOP VIEW
［顶视图］



BOTTOM VIEW
［底视图］



SIDE VIEW
［侧视图］

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.400	0.600	0.016	0.024
e	0.65 TYP		0.026 TYP	
e2	0.35 TYP		0.014 TYP	
L1	0.05 REF		0.002 REF	
L	0.200	0.300	0.008	0.012
b1	0.100	0.200	0.004	0.008