GP72K

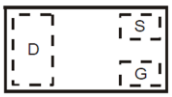
60V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	0.9Ω@10V	0.34A
	1.1Ω@4.5V	

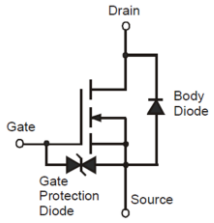
DFN1006-3L

Bottom View



Top View
Internal Schematic

Schematic diagram



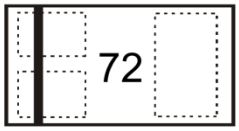
Feature

- Low On-Resistance
- Low Threshold Voltage
- Fast Switching Speed
- ESD Protected Gate

Application

- Load Switch
- Portable Applications
- Power Management Functions

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}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	0.34	A
	T_A=85℃		0.30	
Pulsed Drain Current		I_{DM}	1.2	A
Power Dissipation		P_D	0.1	W
Thermal Resistance from Junction to Ambient		$R_{\theta JA}$	1250	℃/W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	℃

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

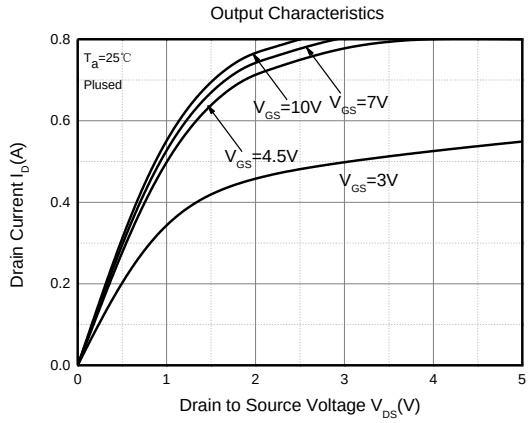
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =60V,V_{GS} = 0V			100	nA
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±10	μA
		V_{GS} =±5V, V_{DS} = 0V			±1	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2	1.5	2.5	V
Drain-Source On-Resistance[a]	$R_{DS(on)}$	V_{GS} =10V, I_D =40mA		0.9	2.5	Ω
		V_{GS} =4.5V, I_D =35mA		1.1	3.0	
Forward Tranconductance[a]	gfs	V_{DS} = 5V, I_D = 40mA	100			mS
Diode Forward Voltage	V_{SD}	V_{DS} =0V, I_S =300mA		0.84	1.1	V
Dynamic Characteristics						
Input Capacitance[b]	C_{iss}	V_{DS} =40V,V_{GS} =0V,f =1MHz		41	80	pF
Output Capacitance[b]	C_{oss}			3.6	7	
Reverse Transfer Capacitance[b]	C_{rss}			2.9	5.6	
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		81	200	Ω
Total Gate Charge	Q_g	V_{GS} =4.5V; V_{DS} = 50V, I_D = 1A		0.72	1.5	nC
		V_{GS} =10V; V_{DS} = 50V, I_D = 1A		1.41	2.8	
Gate-Source Charge	Q_{gs}	V_{GS} =10V; V_{DS} = 50V, I_D = 1A		0.24	0.4	
Gate-Drain Charge	Q_{gd}	V_{GS} =10V; V_{DS} = 50V, I_D = 1A		0.24	0.5	
Turn-On Delay Time[b]	$t_{d(on)}$	V_{DS}=50V,I_D=1A, V_{GS}=10V,RG=6Ω		3.98	10	ns
Turn-On Rise Time[b]	t_r			4.95	10	
Turn-Off Delay Time[b]	$t_{d(off)}$			18.52	40	
Turn-Off Fall Time[b]	t_f			11.94	25	

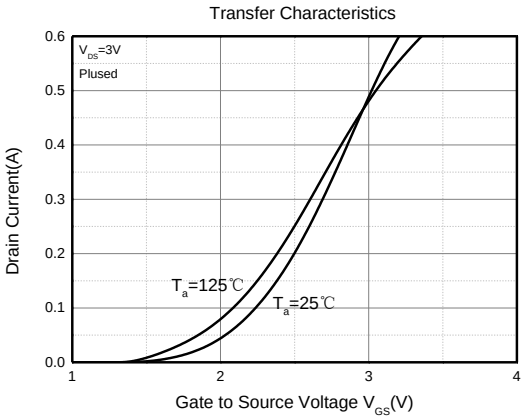
Notes:

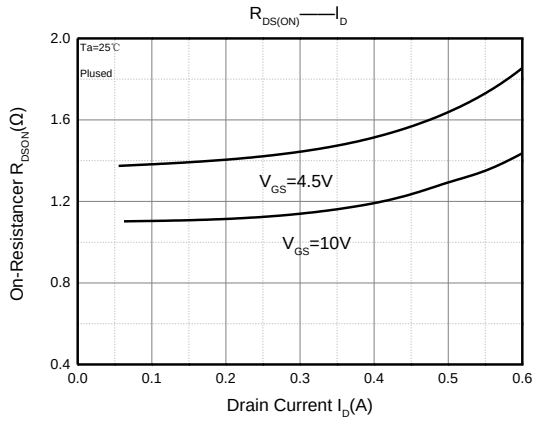
a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

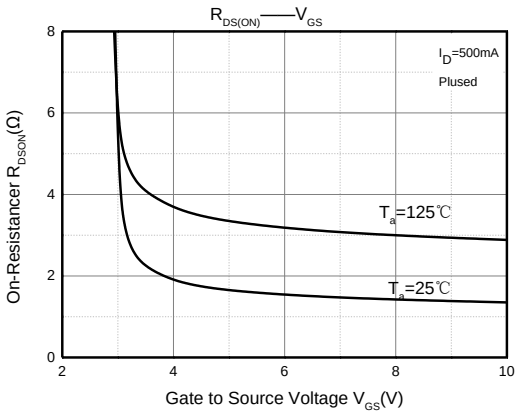
b. These parameters have no way to verify.

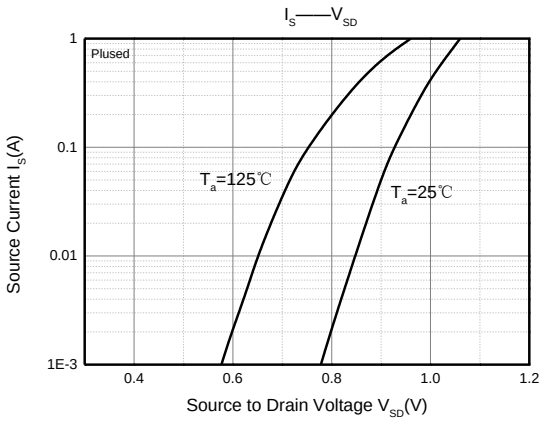
Typical Electrical and Thermal Characteristics

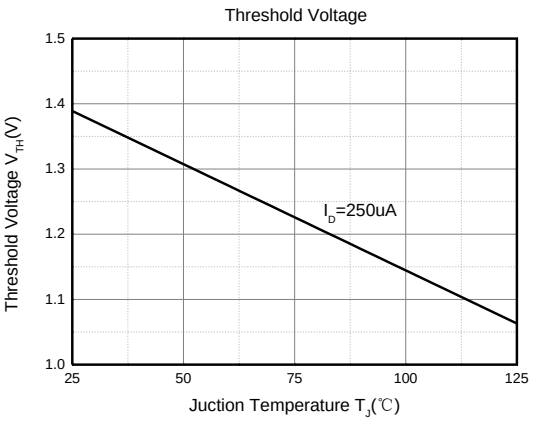




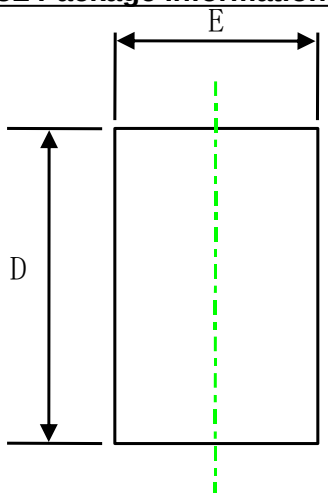




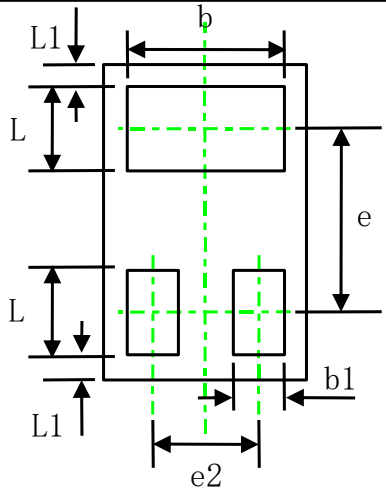




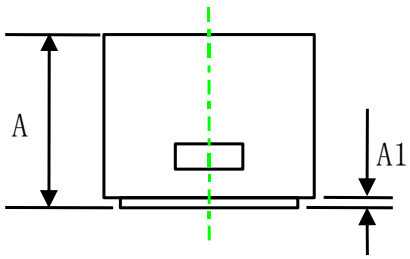
DFN1006-3L Package Information



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

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