

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	1.1Ω@10V	340mA
	1.4Ω@4.5V	



合肥矽普半导体

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Feature

- High power and current handing capability
- Surface mount package
- ESD protected 2KV

Application

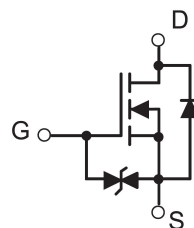
- Battery Switch
- DC/DC Converter

Package

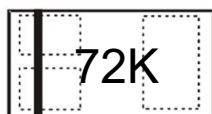


PDFN1006-3L

Circuit diagram



Marking



72K

:Device Code

Order Information

Device	Package	Unit/Tape
2N7002KNC	PDFN1006-3L	10000

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

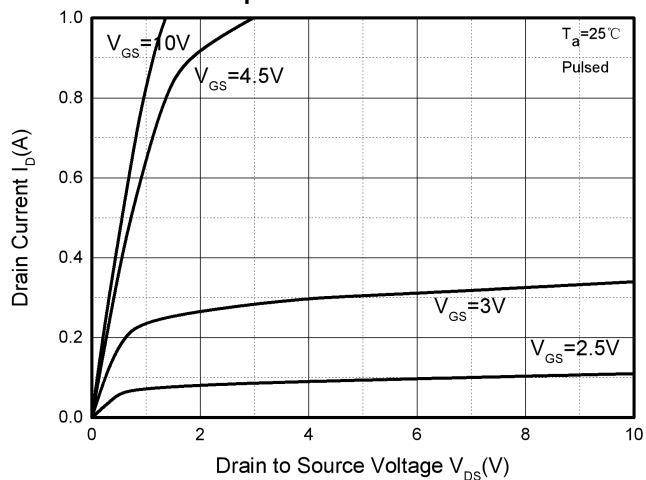
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	340	mA
Pulse Drain Current Tested	I_{DM}	1360	mA
Power Dissipation	P_D	150	mW
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	833	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

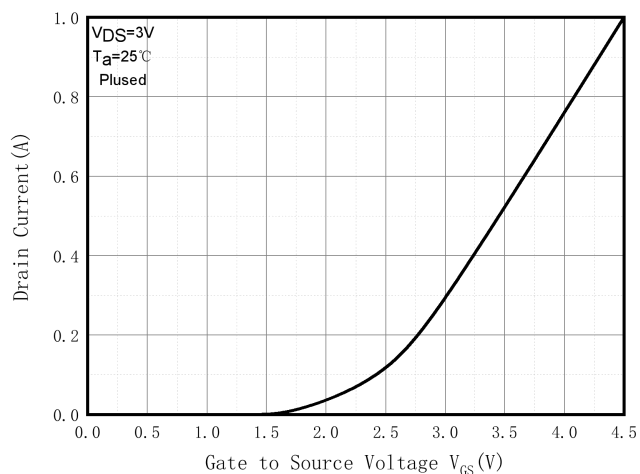
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250μA	60	-	-	V
Drain-Source Leakage Current	I _{DSS}	VDS=48V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I _{GSS}	VGS=±20V , VDS=0V	-	-	±10	uA
Gate Threshold Voltage	VGS(th)	VDS=VGS , ID=250μA	1	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	VGS =10V, ID =200mA	-	1.1	3	Ω
		VGS =4.5V, ID =200mA	-	1.4	4	
Dynamic characteristics						
Input Capacitance	C _{iss}	VDS=25V , VGS=0V , f=1MHz	-	30	-	pF
Output Capacitance	C _{oss}		-	4.2	-	
Reverse Transfer Capacitance	C _{rss}		-	2.9	-	
Total Gate Charge	Q _g	VDS=10V , VGS=4.5V , ID=250mA	-	0.3	-	nC
Gate-Source Charge	Q _{gs}		-	0.2	-	
Gate-Drain Charge	Q _{gd}		-	0.08	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	VDD=30V VGS=10V , RG=25Ω , ID=200mA	-	3.9	-	nS
Turn-On Rise Time	t _r		-	3.4	-	
Turn-Off Delay Time	t _{d(off)}		-	15.7	-	
Turn-Off Fall Time	t _f		-	9.9	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

Typical Characteristics

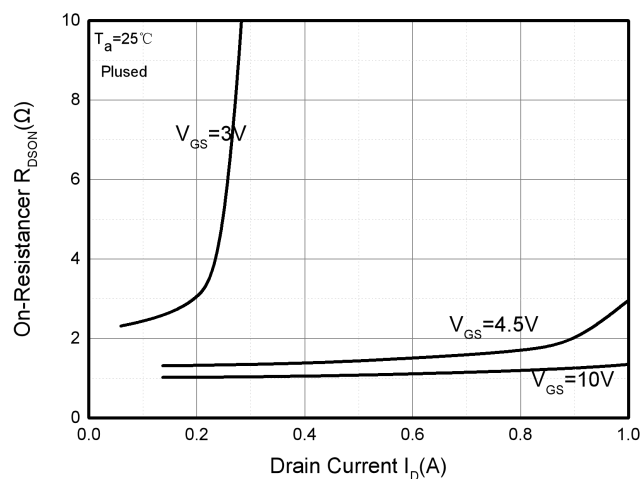
Output Characteristics



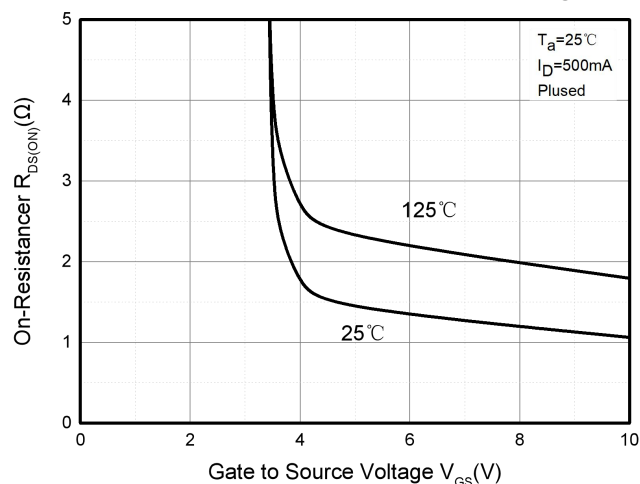
Transfer Characteristics



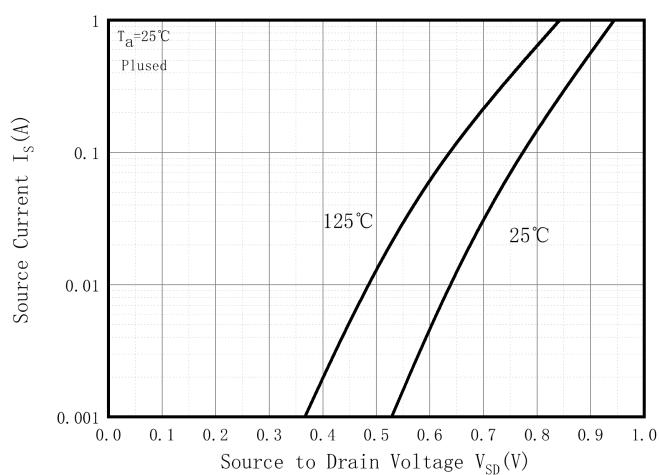
On-Resistance vs. Drain current



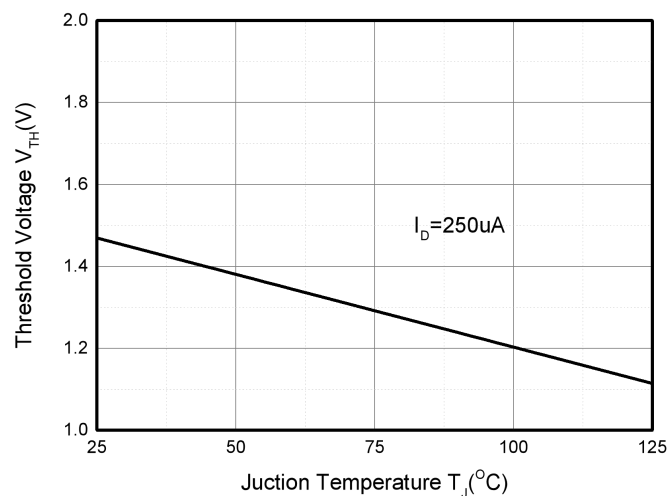
On-Resistance vs. Gate to Source Voltage



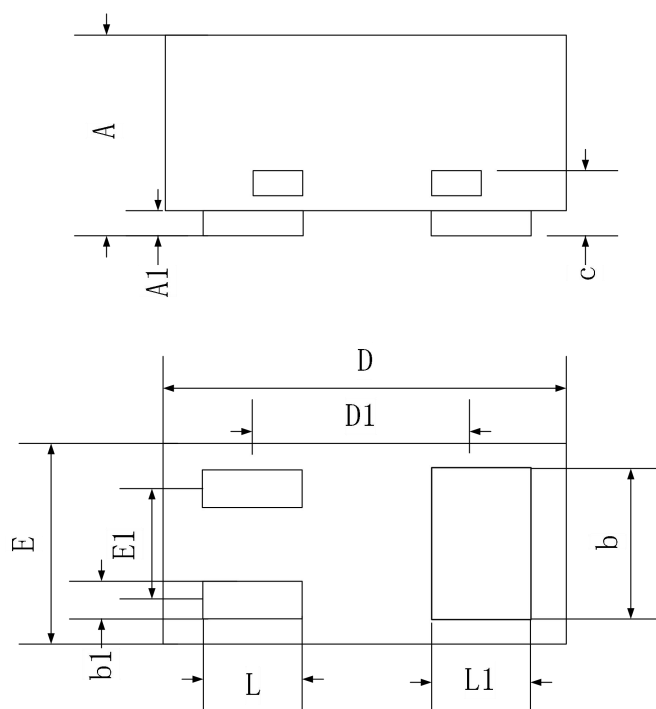
Source Current vs. Source to Drain Voltage



Threshold voltage vs. Junction temperature



PDFN1006-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	0.46	0.51
A1	0	0.05
b	0.45	0.55
b1	0.1	0.2
c	0.08	0.18
D	0.95	1.05
D1	0.65	
E	0.55	0.65
E1	0.325	
L	0.2	0.3
L1	0.2	0.3