

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- ESD Protected Gate
- Low $R_{DS(ON)}$
- Low Threshold Voltage
- Fast Switching Speed

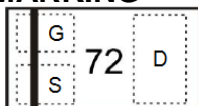
DFN1006-3L

APPLICATIONS

- Load Switch
- Portable Applications
- Power Management Functions



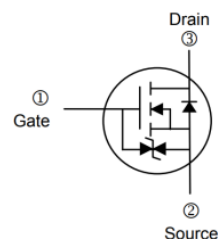
MARKING



(Top View)

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN1006-3L	10K	7 inch



ORDER INFORMATION

Part Number	Type
SWJ7002K-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_A=25^\circ\text{C}$	0.41
		$T_A=85^\circ\text{C}$	0.3
Pulsed Drain Current	I_{DM}	1.2	A
Power Dissipation	P_D	0.1	W
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance Rating			
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	1250	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

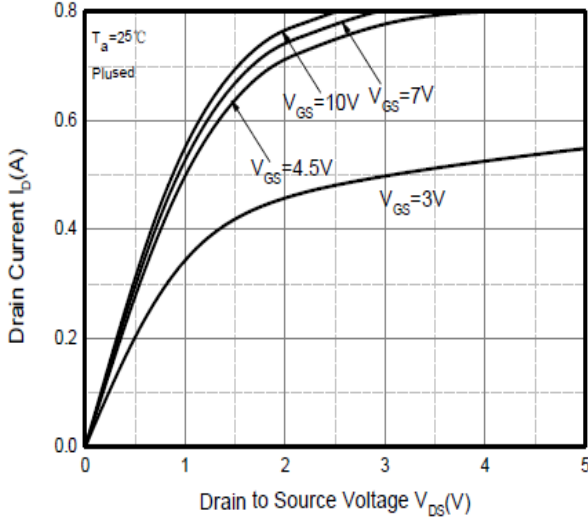
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0V, I_D=250\mu A$	
Gate Threshold Voltage	$V_{GS(th)}$	1.3	-	2.3	V	$V_{DS}=V_{GS}, I_D=250\mu A$	
Forward Transfer Conductance	g_{fs}	100	-	-	mS	$V_{DS}=5V, I_D=40mA$	
Zero Gate Voltage Drain Current	I_{DSS}	-	-	100	nA	$V_{DS}=60V, V_{GS}=0$	
Gate-Source Leakage Current	I_{GSS}	-	-	± 10	μA	$V_{DS}=0V, V_{GS}=\pm 20V$	
		-	-	± 1		$V_{DS}=0V, V_{GS}=\pm 5V$	
Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	1.2	1.5	Ω	$V_{GS}=10V, I_D=40mA$	
		-	1.3	1.8		$V_{GS}=4.5V, I_D=35mA$	
Gate resistance	R_g	-	81	200	Ω	$V_{DS}=V_{GS}=0V, f=1MHz$	
Total Gate Charge (4.5V)	Q_g	-	0.72	-	nC	$V_{DS}=50V$ $V_{GS}=10V$ $I_D=1A$	
Total Gate Charge		-	1.41	-			
Gate-Source Charge		Q_{gs}	-	0.24			-
Gate-Drain Charge		Q_{gd}	-	0.24			-
Turn-On Delay Time	$T_{d(on)}$	-	3.98	-	nS	$V_{DS}=50V$ $V_{GS}=10V$ $I_D=1A$ $R_G=6\Omega$	
Rise Time	T_r	-	4.95	-			
Turn-Off Delay Time	$T_{d(off)}$	-	18.52	-			
Fall Time	T_f	-	11.94	-			
Input Capacitance	C_{iss}	-	41	-	pF	$V_{DS}=40V$ $V_{GS}=0V$ $f=1MHz$	
Output Capacitance	C_{oss}	-	3.6	-			
Reverse Transfer Capacitance	C_{rss}	-	2.9	-			
Source-Drain Diode							
Forward Diode Voltage ³	V_{SD}	-	0.84	1.1	V	$V_{GS}=0V, I_S=300mA$	

Note:

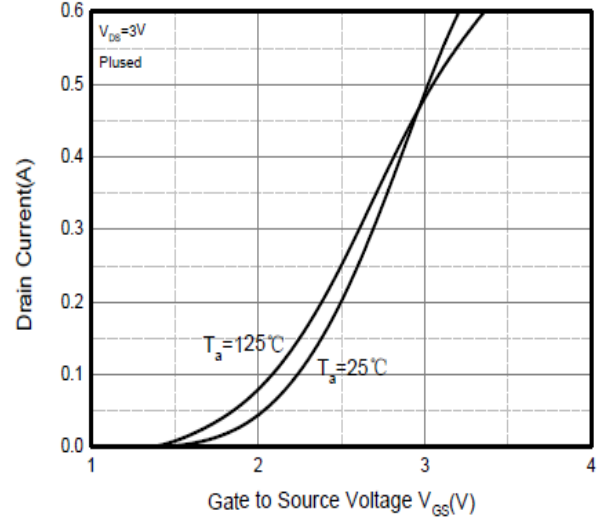
1. Pulse Test: Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

CHARACTERISTIC CURVES

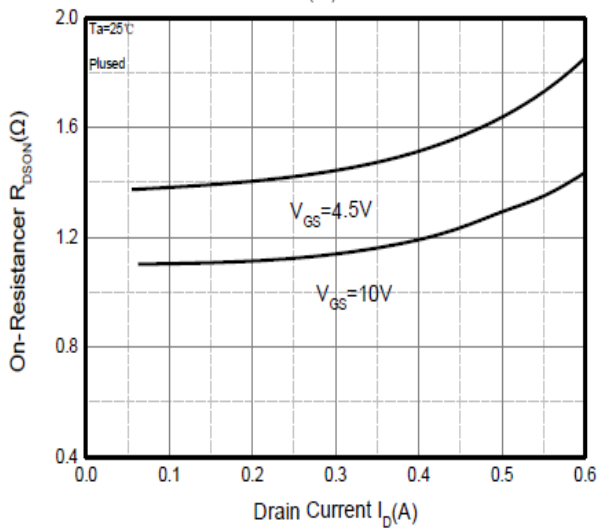
Output Characteristics



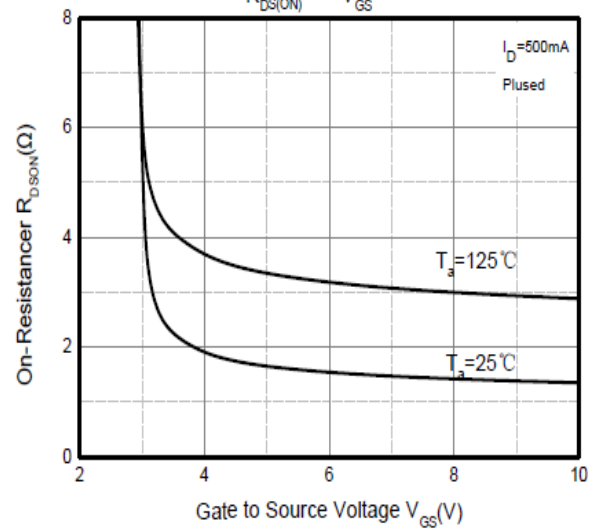
Transfer Characteristics



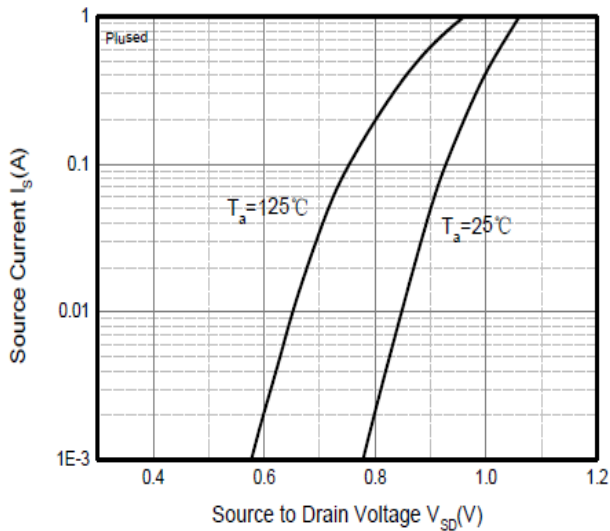
$R_{DS(ON)} - I_D$



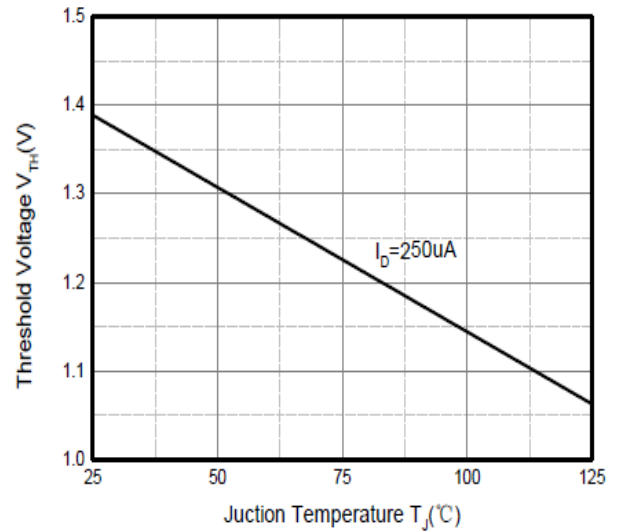
$R_{DS(ON)} - V_{GS}$



$I_s - V_{SD}$

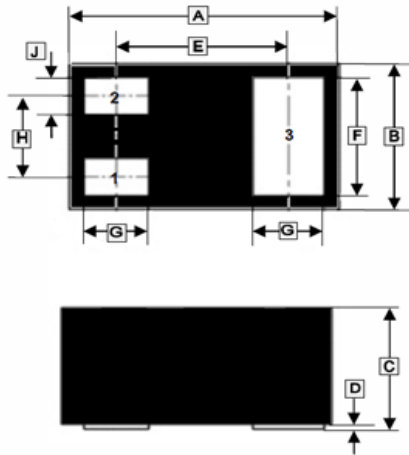


Threshold Voltage



PACKAGE OUTLINE DIMENSIONS

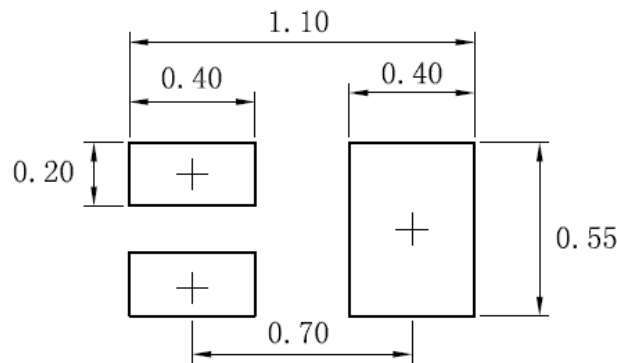
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REF.	Millimeter	
	Min.	Max.
A	0.95	1.075
B	0.55	0.675
C	0.40	0.55
D	0	0.05
E	0.65 TYP.	
F	0.45	0.55
G	0.20	0.30
H	0.35 TYP.	
J	0.15 TYP.	

MOUNTING PAD LAYOUT

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*Dimensions in millimeters