Elektronische Bauelemente

SSQF04N60J-C

4A, 600V, $R_{DS(ON)}$ 2.4Ω

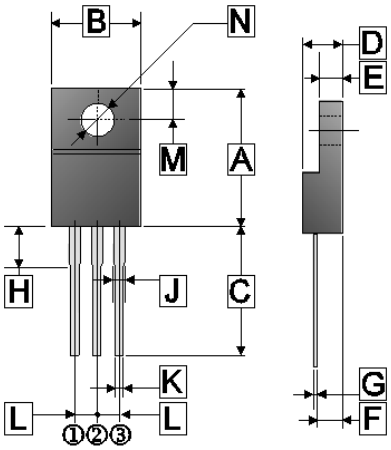
N-Ch Enhancement Mode Power MOSFET

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

DESCRIPTION

This advanced high voltage MOSFET is designed to Withstand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain to source diode with fast recovery time. Designed for high voltage, high speed switching applications such as power supplies, converters, power motor controls and bridge circuits.

ITO-220J



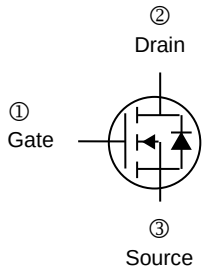
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	14.50	15.50	H	3.80 TYP.	
B	9.50	10.50	J	1.30 REF.	
C	13.20 REF.		K	0.30	0.90
D	4.24	4.84	L	2.54 REF.	
E	2.52	3.20	M	2.70 REF.	
F	2.50	2.90	N	ϕ 3.50 REF.	
G	0.47	0.75			

FEATURES

- High current rating
- Lower $R_{DS(ON)}$
- Lower capacitance
- Lower total gate charge
- Tighter VSD specifications
- Specified avalanche energy

ORDER INFORMATION

Part Number	Type
SSQF04N60J-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current	I_D	4	A
Continuous Drain-Source Diode Forward Current	I_S	4	A
Maximum Lead Temperature for Soldering Purposes @ 1/8'' from case for 5 seconds	T_L	260	°C
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	°C
Thermal Resistance Rating			
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	62.5	°C/W

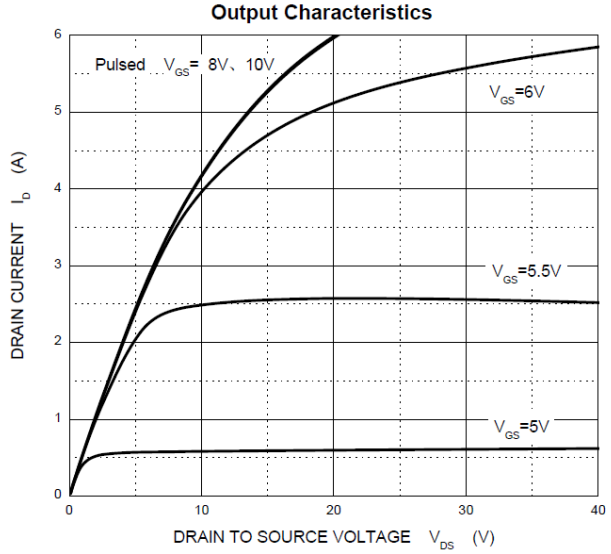
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	B_{VDSS}	600	645	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage [1]	$V_{GS(th)}$	2	3	4	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance [1]	g_{fs}	2	2.6	-	S	V_{DS}=50V, I_D=2A
Gate-Source Forward Leakage Current [1]	I_{GSSF}	-	-	100	nA	V_{DS}=0V, V_{GS}=30V
Gate-Source Reverse Leakage Current [1]	I_{GSSR}	-	-	-100	nA	V_{DS}=0V, V_{GS}= -30V
Drain-Source Leakage Current	I_{DSS}	-	-	25	μA	V_{DS}=600V, V_{GS}=0
Static Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	2	2.4	Ω	V_{GS}=10V, I_D=2A
Gate Resistance	R_g	-	2.3	-	Ω	f=1MHz
Total Gate Charge	Q_g	-	5	-	nC	V_{DS}=480V V_{GS}=10V I_D=4A
Gate-Source Charge	Q_{gs}	-	2.7	-		
Gate-Drain Charge	Q_{gd}	-	2	-		
Turn-on Delay Time	$T_{d(on)}$	-	12	-	nS	V_{DD}=300V V_{GS}=10V R_G=9.1Ω I_D=4A
Rise Time	T_r	-	7	-		
Turn-off Delay Time	$T_{d(off)}$	-	19	-		
Fall Time	T_f	-	10	-		
Input Capacitance	C_{iss}		540	-	pF	V_{DS}=25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}		125	-		
Reverse Transfer Capacitance	C_{rss}		8	-		
Diode Forward Voltage [1]	V_{SD}	-	0.83	1.5	V	V_{GS}=0, I_S=4A

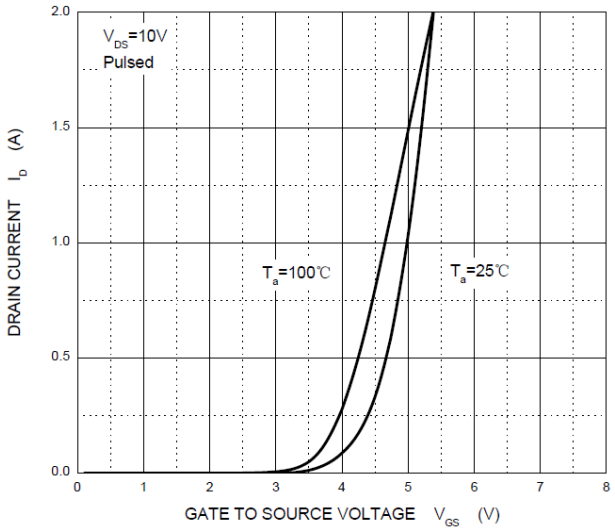
Note:
1. Pulse Test: Pulse width≦300μS, duty cycle≦2%.

CHARACTERISTIC CURVES

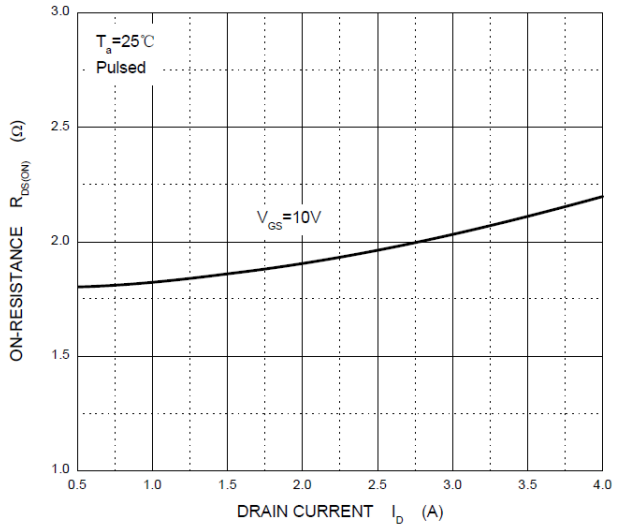
Output Characteristics



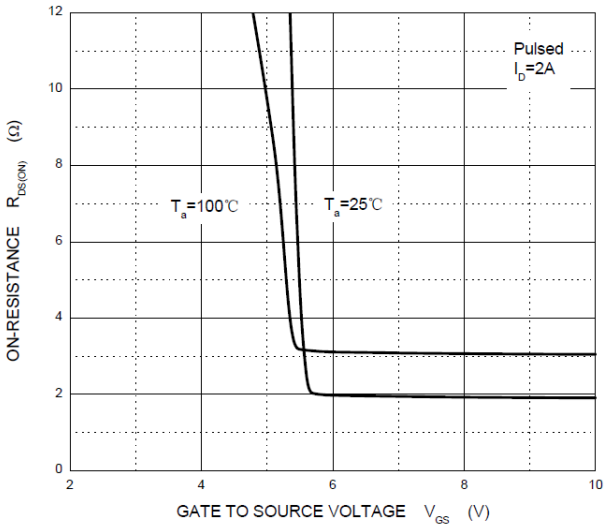
Transfer Characteristics



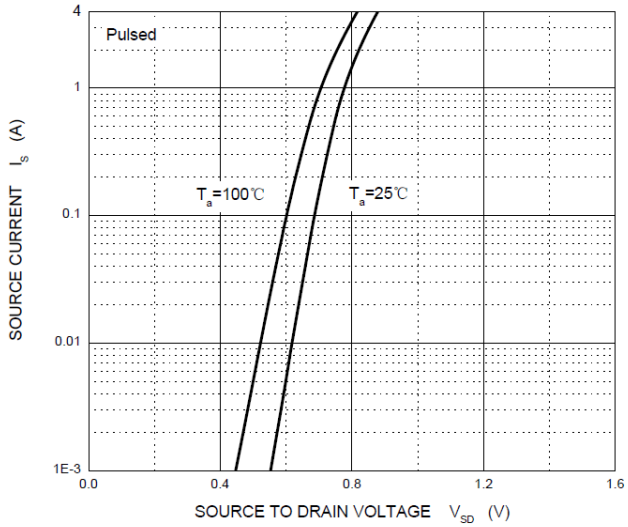
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage