Elektronische Bauelemente

SSQF02N60J-C

2A, 600V, $R_{DS(ON)}$ 4.4Ω

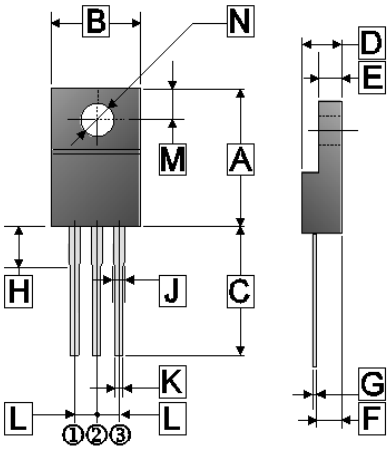
N-Ch Enhancement Mode Power MOSFET

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

DESCRIPTION

The high voltage MOSFET uses an advanced termination scheme to provide enhanced voltage-blocking capability without degrading performance over time. In addition, this advanced MOSFET is designed to withstand high energy in avalanche and commutation modes. The new energy efficient design also offers a drain-to-source diode with a fast recovery time. Designed for high voltage, high speed switching applications in power suppliers, converters, and PWM motor controls, these devices are particularly well suited for bridge circuits whose diode speed and commutating safe operating areas are critical and offer additional and safety margin against unexpected voltage transients.

ITO-220J



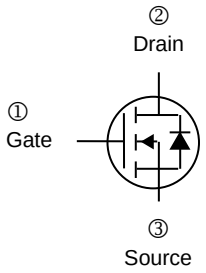
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	14.50	15.50	H	3.80 TYP.	
B	9.50	10.50	J	1.30 REF.	
C	13.20 REF.		K	0.30	0.90
D	4.24	4.84	L	2.54 REF.	
E	2.52	3.20	M	2.70 REF.	
F	2.50	2.90	N	ϕ 3.50 REF.	
G	0.47	0.75			

FEATURES

- Robust high voltage termination
- Specified avalanche energy
- Source-to-drain diode recovery time comparable to a discrete fast recovery diode
- Diode is characterized for the use in bridge circuits
- I_{DSS} and $V_{DS(ON)}$ are specified at the elevated temperature

ORDER INFORMATION

Part Number	Type
SSQF02N60J-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}	±20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	9	A
Power Dissipation	P_D	2	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	°C
Thermal Resistance Rating			
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	62.5	°C/W

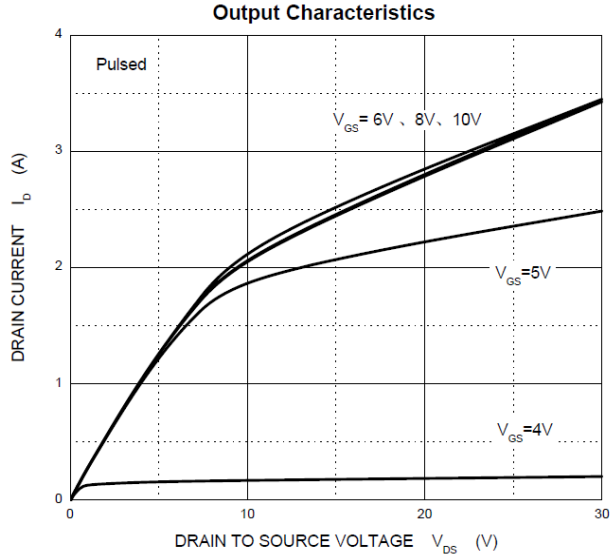
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	B_{VDSS}	600	660	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage [1]	$V_{GS(th)}$	2	2.8	4	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance [1]	g_{fs}	1	-	-	S	V_{DS}=50V, I_D=1A
Gate-Source Leakage Current [1]	I_{GSS}	-	-	±100	nA	V_{DS}=0V, V_{GS}= ±20V
Drain-Source Leakage Current	I_{DSS}	-	-	25	μA	V_{DS}=600V, V_{GS}=0
Static Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	3.6	4.4	Ω	V_{GS}=10V, I_D=1A
Gate Resistance	R_g	-	2.3	-	Ω	f=1MHz
Turn-on Delay Time	$T_{d(on)}$	-	12	-	nS	V_{DD}=300V V_{GS}=10V R_G=18Ω I_D=2A
Rise Time	T_r	-	21	-		
Turn-off Delay Time	$T_{d(off)}$	-	30	-		
Fall Time	T_f	-	24	-		
Input Capacitance	C_{iss}	-	435	-	pF	V_{DS}=25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	56	-		
Reverse Transfer Capacitance	C_{rss}	-	9.2	-		
Diode Forward Voltage [1]	V_{SD}	-	0.83	1.6	V	I_S=2A, V_{GS}=0

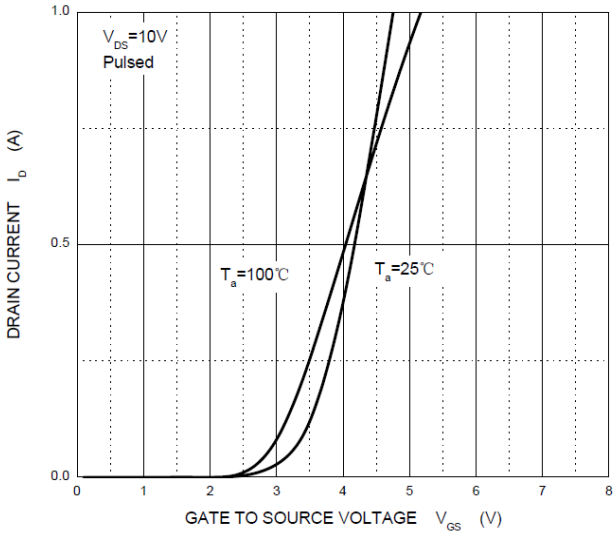
Note:
1. Pulse Test: Pulse width≦300μS, duty cycle≦2%.

CHARACTERISTIC CURVES

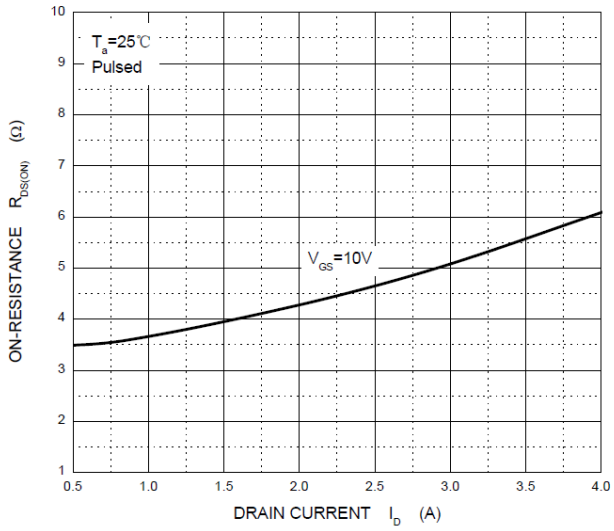
Output Characteristics



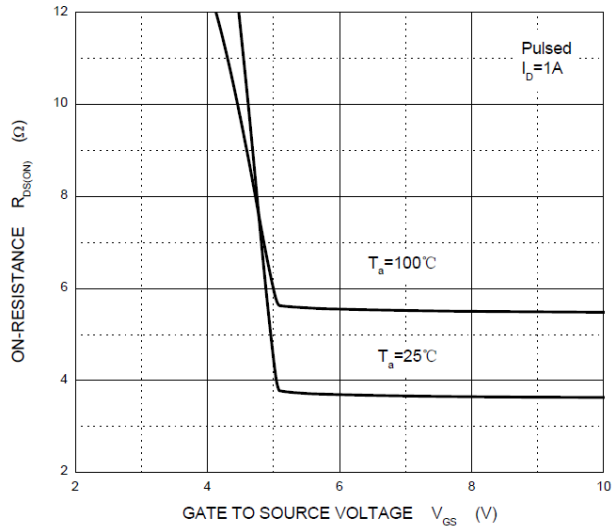
Transfer Characteristics



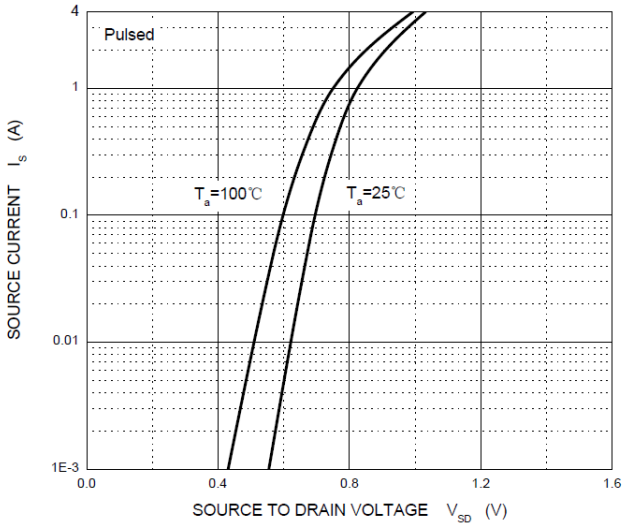
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage