

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

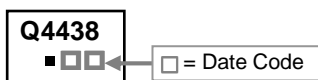
DESCRIPTION

The SSG4438J-C provides the designer with the best combination of fast switching, ruggedized device design, ultra low on-resistance and cost-effectiveness.

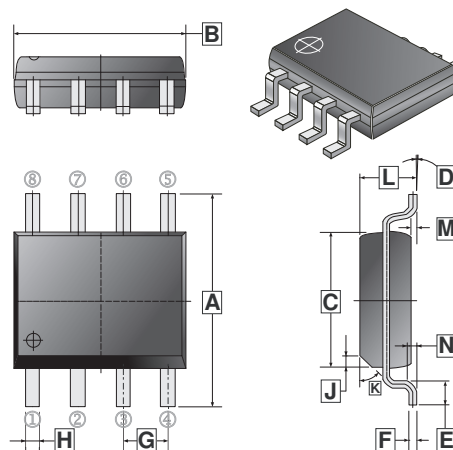
FEATURES

- Low On-Resistance
- Simple Drive Requirement

MARKING



SOP-8



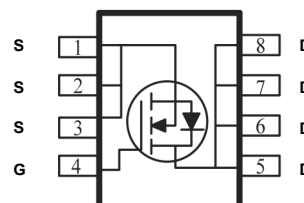
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	4K	13 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45° REF.	
D	0°	8°	L	1.3	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

ORDER INFORMATION

Part Number	Type
SSG4438J-C	Lead (Pb)-free and Halogen-free



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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ¹	I _D	8.2	A
Pulsed Drain Current ²	I _{DM}	40	A
Power Dissipation	P _D	1.25	W
Maximum Junction-Ambient ¹	R _{θJA}	100	°C/W
Operating Junction & Storage Temperature Range	T _J , T _{STG}	150, -55~150	°C

Notes:

1. The value of R_{θJA} is measured with the device mounted on a 1 inch² FR-4 board with 20Z copper, in a still air environment with T_A=25°C. The value in any given application depends on the user's specific board design. The current rating is based on the t ≤ 10s thermal resistance rating.
2. Repetitive rating: Pulse width limited by junction temperature.

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

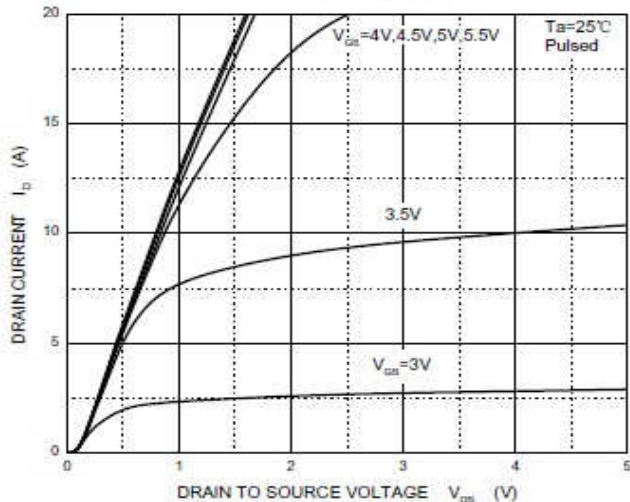
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Drain-Source Breakdown Voltage	BV_{DSS}	60	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS}=60\text{V}, V_{GS}=0$
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0, V_{GS}=\pm 20\text{V}$
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	3	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	22	m Ω	$V_{GS}=10\text{V}, I_D=8.2\text{A}$
		-	-	36		$V_{GS}=4.5\text{V}, I_D=7.6\text{A}$
Forward Transfer Conductance ¹	g_{fs}	10	-	-	S	$V_{DS}=5\text{V}, I_D=8.2\text{A}$
Diode Forward Voltage ¹	V_{SD}	-	-	1	V	$I_S=1\text{A}, V_{GS}=0$
Total Gate Charge	Q_g	10V	-	58	nC	$I_D=8.2\text{A}$ $V_{DS}=30\text{V}$ $V_{GS}=10\text{V}$
		4.5V	-	30		
Gate-Source Charge	Q_{gs}	-	6	-	nS	$V_{DS}=30\text{V}$ $V_{GS}=10\text{V}$ $R_L=3.6\Omega$ $R_{GEN}=3\Omega$
Gate-Drain ("Miller") Charge	Q_{gd}	-	14.4	-		
Turn-on Delay Time	$T_{d(on)}$	-	8.2	-		
Rise Time	T_r	-	5.5	-	pF	$V_{GS}=0$ $V_{DS}=30\text{V}$ $f=1\text{MHz}$
Turn-off Delay Time	$T_{d(off)}$	-	29.7	-		
Fall Time	T_f	-	5.2	-		
Input Capacitance	C_{iss}	-	2300	-		
Output Capacitance	C_{oss}	-	155	-		
Reverse Transfer Capacitance	C_{rss}	-	116	-		

Note:

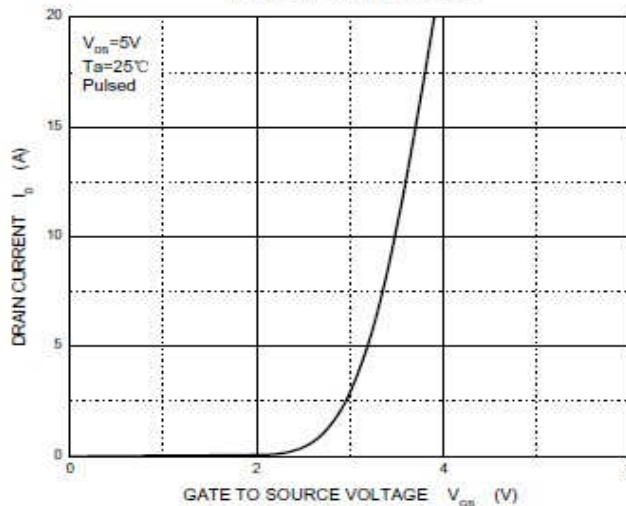
1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

CHARACTERISTICS CURVE

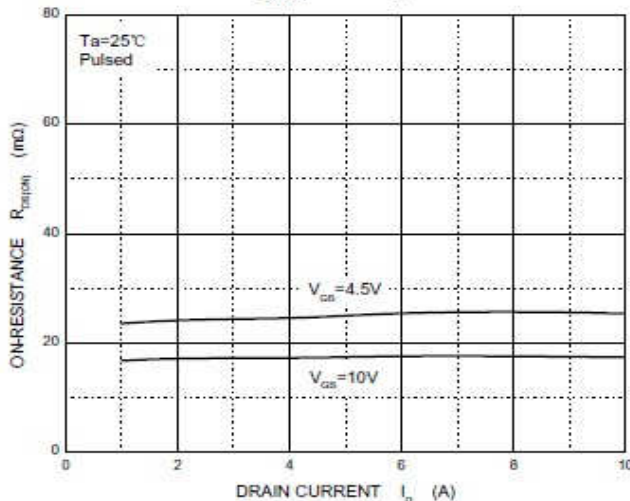
Output Characteristics



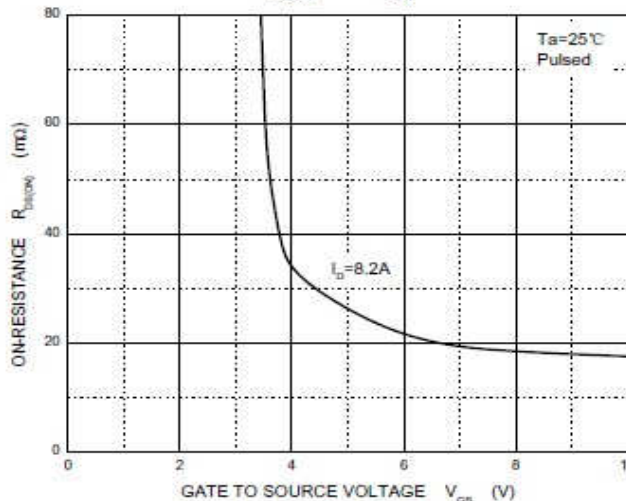
Transfer Characteristics



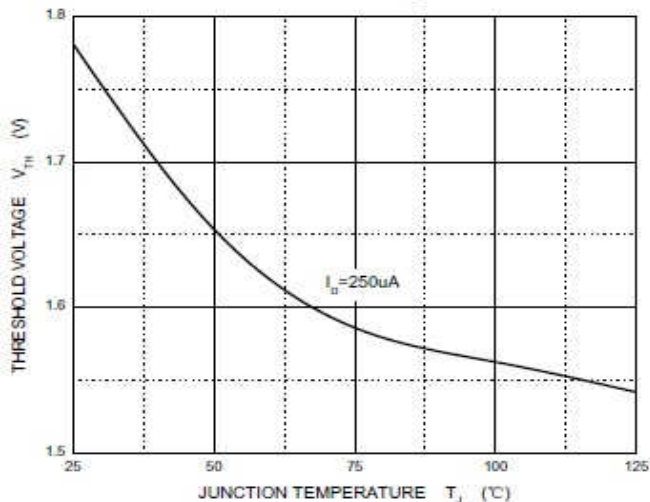
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



Threshold Voltage



I_s — V_{SD}

