Elektronische Bauelemente

SSG4503J-C

N-Ch: 6.9A, 30V, $R_{DS(ON)}$ 28mΩ
P-Ch: -6.3A, -30V, $R_{DS(ON)}$ 36mΩ
N & P-Ch Enhancement Mode Power MOSFET

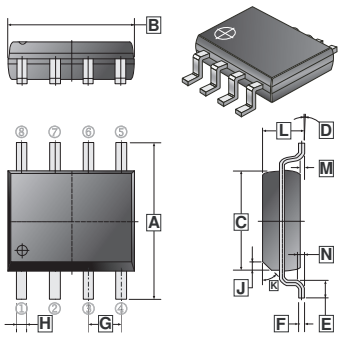
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

Advanced Power MOSFETs provide the designers with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

SOP-8 package is widely preferred for commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SOP-8

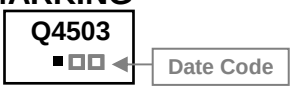


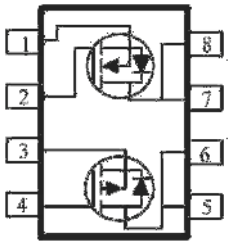
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45°REF.	
D	0°	8°	L	1.3	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

- Low $R_{DS(ON)}$ Provides Higher Efficiency and Longer Battery Life
- Low Thermal Impedance Copper Lead Frame
- Fast Switching Speed
- High Performance Trench Technology

MARKING





PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	4K	13 inch

ORDER INFORMATION

Part Number	Type
SSG4503J-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings		Unit
			N-CH	P-CH	
Drain-Source Voltage		V_{DS}	30	-30	V
Gate-Source Voltage		V_{GS}	±20		V
Continuous Drain Current [1]	T_A=25℃	I_D	6.9	-6.3	A
	T_A=70℃		5.5	-5	A
Pulsed Drain Current [2]		I_{DM}	20	-20	A
Total Power Dissipation		P_D	1.4		W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	150, -55~150		℃
Thermal Resistance Ratings					
Thermal Resistance from Junction-Ambient		$R_{\theta JA}$	89		℃/W

N-Ch ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250μA
Gate Threshold Voltage	$V_{GS(th)}$	1	1.5	3	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=30V, V_{GS}=0
Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	10	28	mΩ	V_{GS}=10V, I_D=6A
		-	14	42		V_{GS}=4.5V, I_D=4A
Forward Transfer conductance	gfs	4	-	-	S	V_{DS}=10V, I_D=6A
Diode Forward Voltage [3]	V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=1.7A
Total Gate Charge [3]	Q_g	-	13.5	-	nC	V_{DS}=24V V_{GS}=4.5V I_D=6A
Gate-Source Charge	Q_{gs}	-	1.4	-		
Gate-Drain Charge	Q_{gd}	-	4.7	-		
Turn-on Delay Time [3]	$T_{d(on)}$	-	5	-	nS	V_{DS}=20V V_{GS}=10V R_D=20Ω R_G=3.3Ω I_D=1A
Rise Time	T_r	-	8	-		
Turn-off Delay Time	$T_{d(off)}$	-	18.5	-		
Fall Time	T_f	-	9	-		
Input Capacitance	C_{iss}	-	770	-	pF	V_{DS}=25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	80	-		
Reverse Transfer Capacitance	C_{rss}	-	75	-		

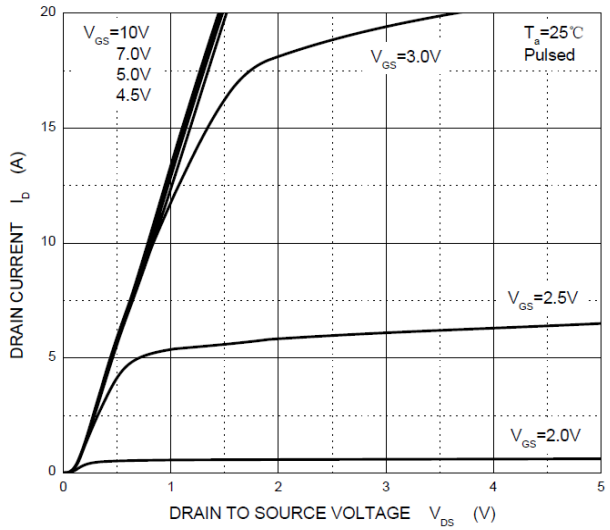
P-Ch ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage	$V_{GS(th)}$	-1	-1.7	-3	V	V_{DS}=V_{GS}, I_D= -250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -30V, V_{GS}=0
Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	16	36	mΩ	V_{GS}= -10V, I_D= -6A
		-	25	55		V_{GS}= -4.5V, I_D= -4A
Forward Transfer conductance	gfs	4	-	-	S	V_{DS}= -10V, I_D= -6A
Diode Forward Voltage [3]	V_{SD}	-	-	-1.2	V	V_{GS}=0, I_S= -1.7A
Total Gate Charge [3]	Q_g	-	20	-	nC	V_{DS}= -24V V_{GS}= -4.5V I_D= -6A
Gate-Source Charge	Q_{gs}	-	2	-		
Gate-Drain Charge	Q_{gd}	-	7	-		
Turn-on Delay Time [3]	$T_{d(on)}$	-	8	-	nS	V_{DS}= -15V V_{GS}= -10V R_D=15Ω R_G=3.3Ω I_D= -1A
Rise Time	T_r	-	7	-		
Turn-off Delay Time	$T_{d(off)}$	-	34	-		
Fall Time	T_f	-	26	-		
Input Capacitance	C_{iss}	-	1380	-	pF	V_{DS}= -25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	150	-		
Reverse Transfer Capacitance	C_{rss}	-	140	-		

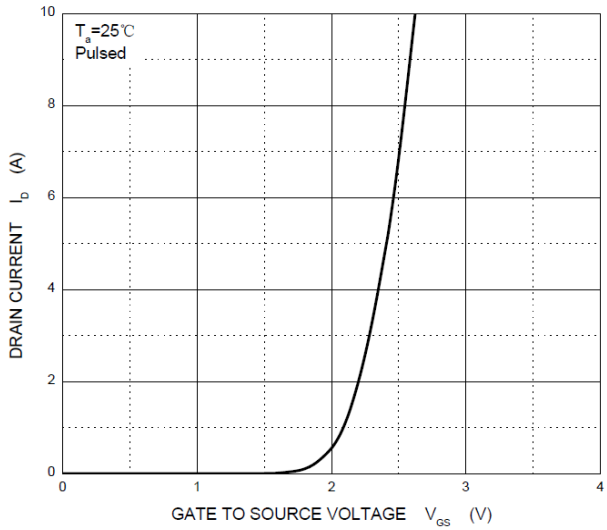
Notes:
1. These tests are performed with infinite heat sink.
2. Pulse width by Max. junction temperature.
3. Pulse Test: Pulse width≤300μs, duty cycle ≤2%.

N-Ch CHARACTERISTIC CURVES

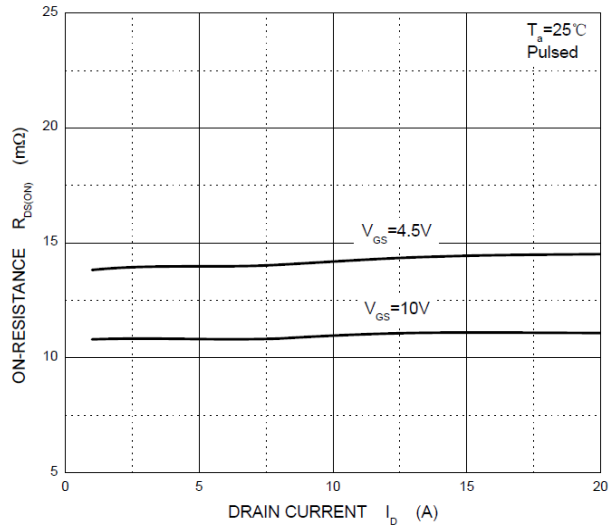
Output Characteristics



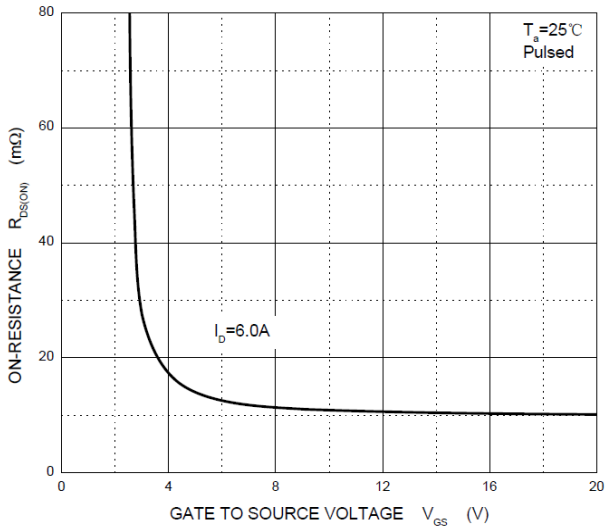
Transfer Characteristics



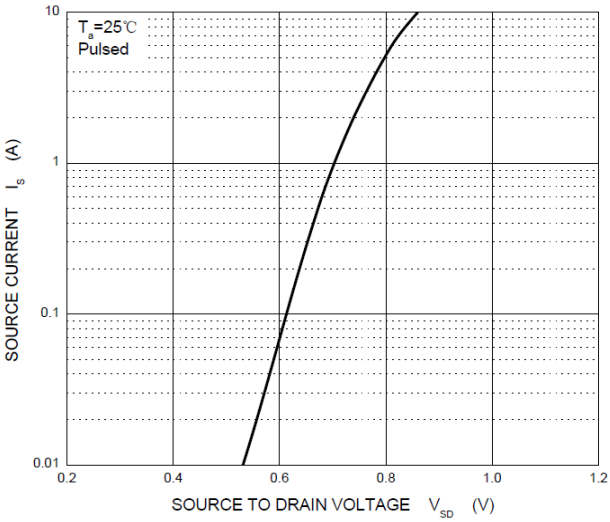
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}

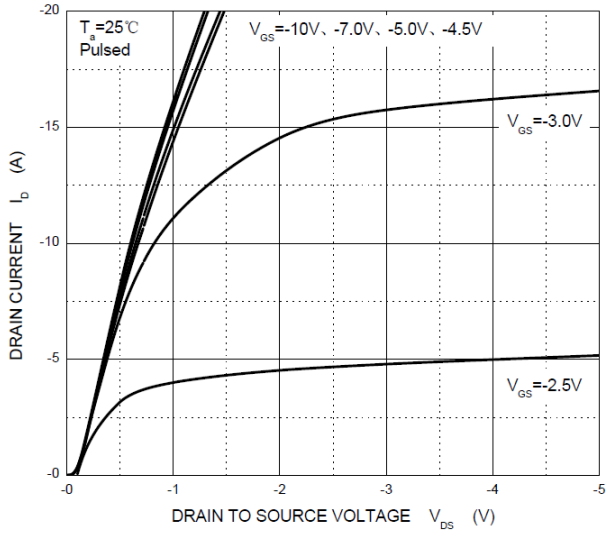


I_S — V_{SD}

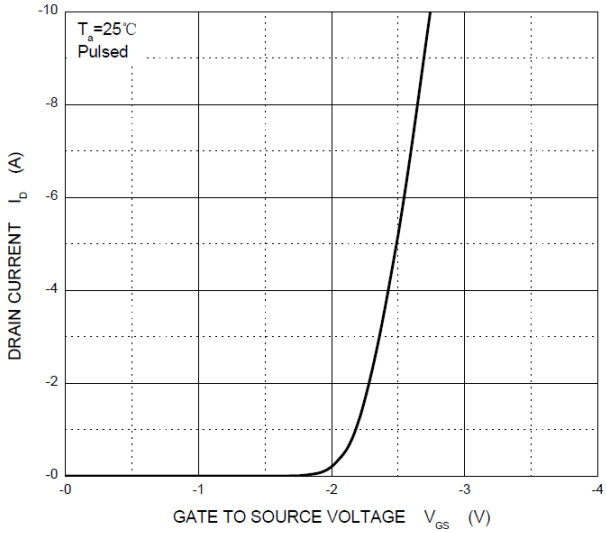


P-Ch CHARACTERISTIC CURVES

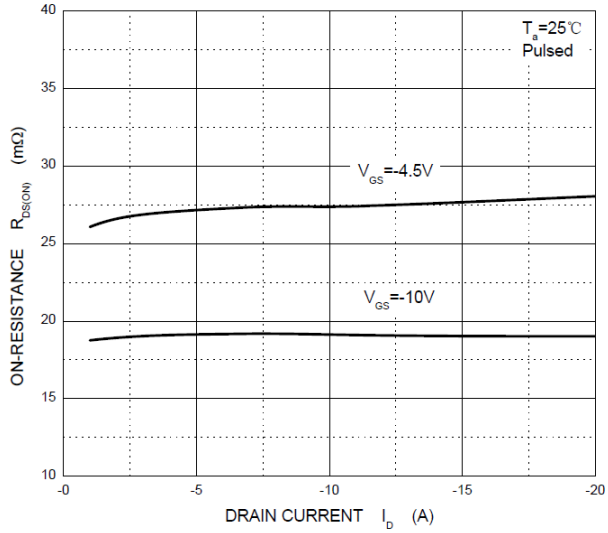
Output Characteristics



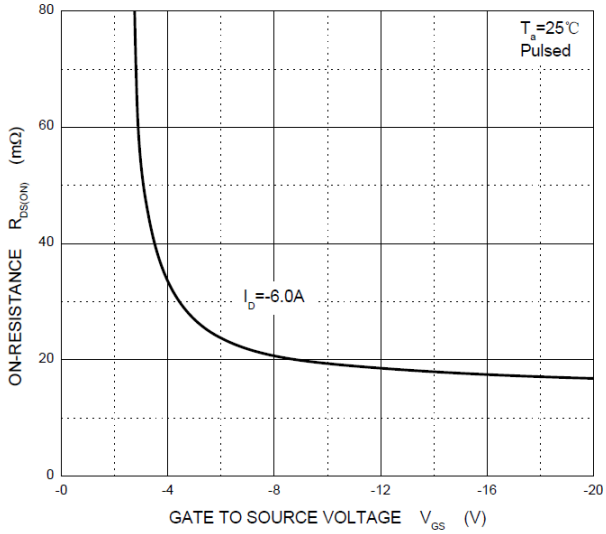
Transfer Characteristics



$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}