Elektronische Bauelemente

SJP110SN04-C

110A, 40V, $R_{DS(ON)}$ 2.8mΩ

N-Channel Shielded Gate Trench Power MOSFET

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

DESCRIPTION

SJP110SN04-C uses Shielded Gate Trench Technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

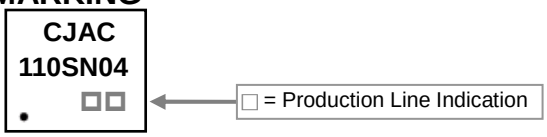
FEATURES

- High density cell design for ultra low $R_{DS(ON)}$
- Battery switch
- Load switch
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

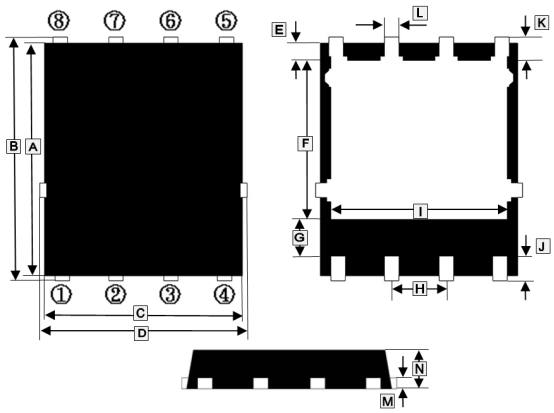
APPLICATIONS

- Networking
- Load Switch
- LED applications

MARKING



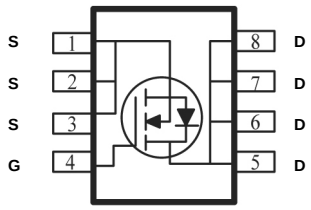
DFN5x6-8J



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.65	5.85	H	1.27 TYP.	
B	5.90	6.15	I	3.85	4.15
C	4.80	5.00	J	0.51	0.86
D	5.02 TYP.		K	0.55	0.85
E	0.38	0.576	L	0.33	0.50
F	3.25	3.58	M	0.254 REF.	
G	1.10	1.39	N	0.90	1.17

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN5x6-8J	5K	13 inch



ORDER INFORMATION

Part Number	Type
SJP110SN04-C	Lead (Pb)-free and Halogen-free

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	+20 / -12	V
Continuous Drain Current [1]	I_D	110	A
Pulsed Drain Current [2]	I_{DM}	440	A
Single Pulsed Avalanche Energy [3]	E_{AS}	260	mJ
Power Dissipation [1]	P_D	75	W
Thermal Resistance from Junction-Ambient [5]	$R_{\theta JA}$	62.5	℃/W
Thermal Resistance from Junction-Case [1]	$R_{\theta JC}$	1.66	
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

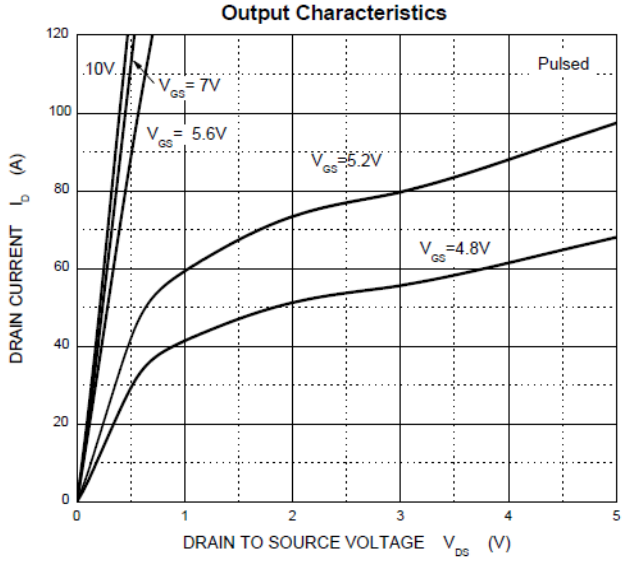
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	40	-	-	V	V_{GS}=0V, I_D=250μA
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=32V, V_{GS}=0V
	T_J=125℃		-	-	100		V_{DS}=32V, V_{GS}=0V
Gate-Body Leakage Current		I_{GSS}	-	-	±100	nA	V_{DS}=0V, V_{GS}=+20/ -12V
Gate-Threshold Voltage [4]		$V_{GS(th)}$	2	-	4	V	V_{DS}=V_{GS}, I_D=250μA
Static Drain-Source On-Resistance [4]		$R_{DS(ON)}$	-	2.5	2.8	mΩ	V_{GS}=10V, I_D=20A
Forward Transconductance		g_{fs}	-	32	-	S	V_{DS}=5V, I_D=20A
Total Gate Charge		Q_g	-	61	-	nC	V_{DS}=20V V_{GS}=10V I_D=70A
Gate-Source Charge		Q_{gs}	-	15	-		
Gate-Drain Charge		Q_{gd}	-	14	-		
Turn-on Delay Time		$T_{d(on)}$	-	13	-	nS	V_{DS}=20V V_{GS}=10V R_G=6Ω I_D=1A
Rise Time		T_r	-	22	-		
Turn-off Delay Time		$T_{d(off)}$	-	55	-		
Fall Time		T_f	-	85	-		
Input Capacitance		C_{iss}	-	3350	-	pF	V_{DS}=20V V_{GS}=0V f=1MHz
Output Capacitance		C_{oss}	-	1100	-		
Reverse Transfer Capacitance		C_{rss}	-	120	-		
Drain-Source Diode Characteristics							
Diode Forward Voltage [4]		V_{SD}	-	-	1.2	V	V_{GS}=0V, I_S=10A
Continuous Source Current [1]		I_S	-	-	110	A	
Pulsed Source Current [2]		I_{SM}	-	-	440	A	

Notes:

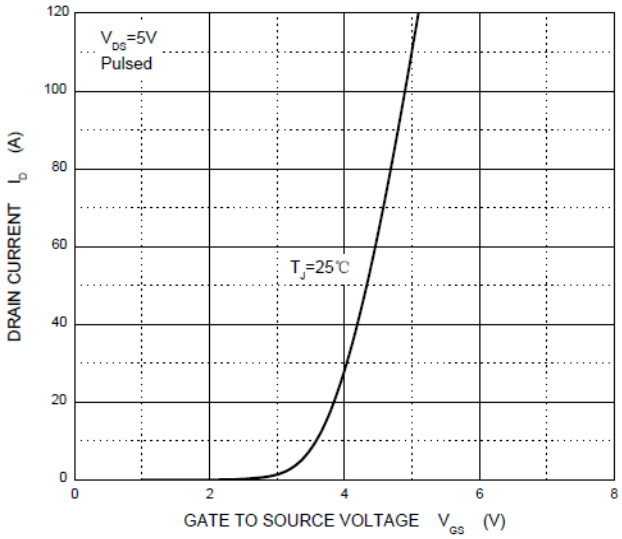
1. T_C=25℃ Limited only by maximum temperature allowed.
2. Pulse test: Pulse width≦10μs, duty cycle≦1%.
3. E_{AS} condition: V_{DD}=25V, V_{GS}=10V, L=0.1mH, R_g=25Ω Starting T_J=25℃.
4. The data tested by pulsed, pulse width≦300us, duty cycle≦2%.
5. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 1.5oz.Copper, in a still air environment with T_A=25℃.

CHARACTERISTICS CURVE

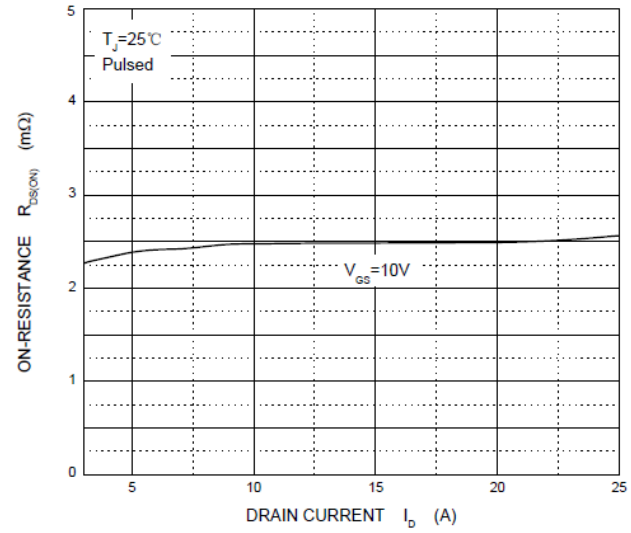
Output Characteristics



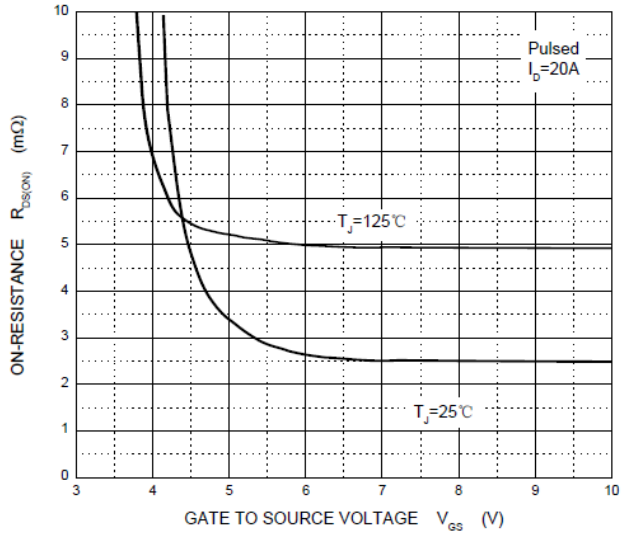
Transfer Characteristics



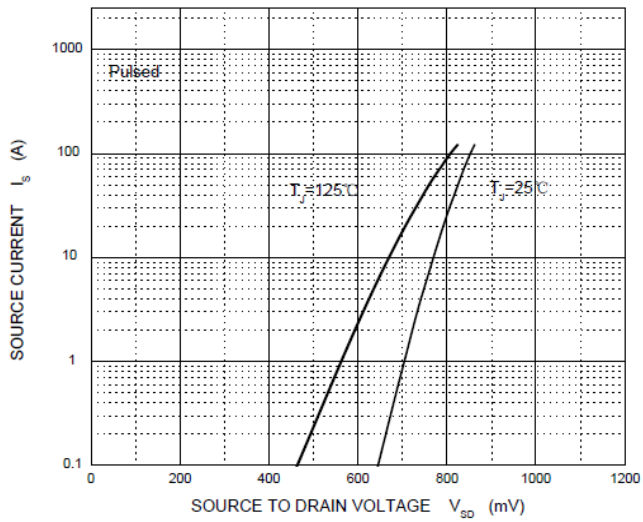
$R_{DS(ON)}$ —— I_D



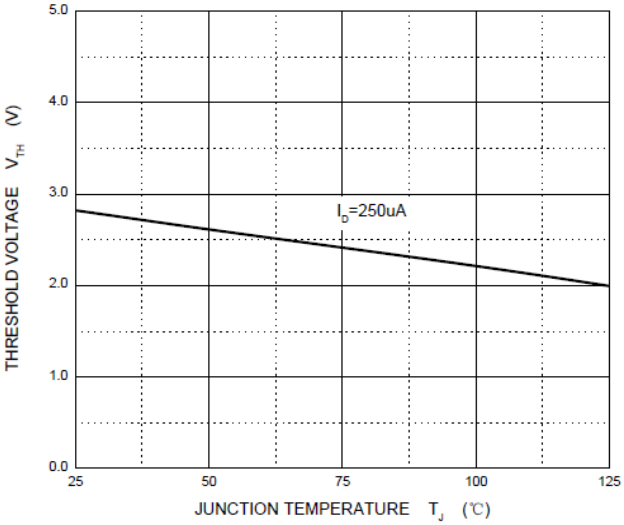
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage



CHARACTERISTICS CURVE