

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

DESCRIPTION

SJP110SN10J-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.

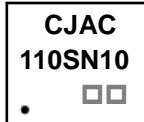
FEATURES

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

APPLICATIONS

- SMPS and general purpose applications
- Hard switched and high frequency circuits
- Uninterruptible Power Supply
- Power management

MARKING



□ = Production Line Indication

PACKAGE INFORMATION

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

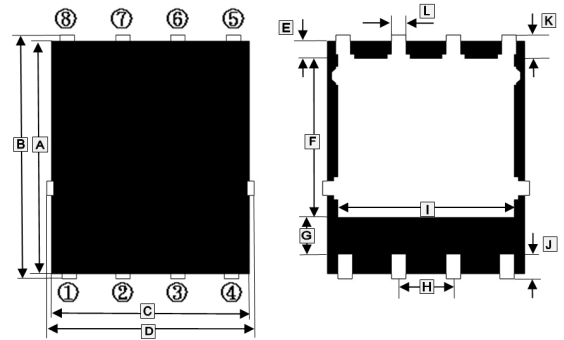
ORDER INFORMATION

Part Number	Type
SJP110SN10J-C	Lead (Pb)-free and Halogen-free

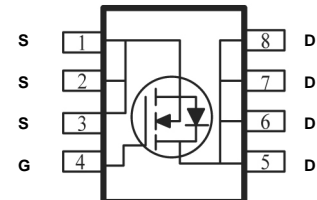
ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	110	A
Pulsed Drain Current ²	I_{DM}	390	A
Single Pulsed Avalanche Energy ³	E_{AS}	65	mJ
Power Dissipation ¹	P_D	83	W
Thermal Resistance from Junction-Ambient ⁵	$R_{\theta JA}$	62.5	°C/W
Thermal Resistance from Junction-Case ¹	$R_{\theta JC}$	1.51	
Operating Junction & Storage Temperature Range	T_J, T_{STG}	150, -55~150	°C

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



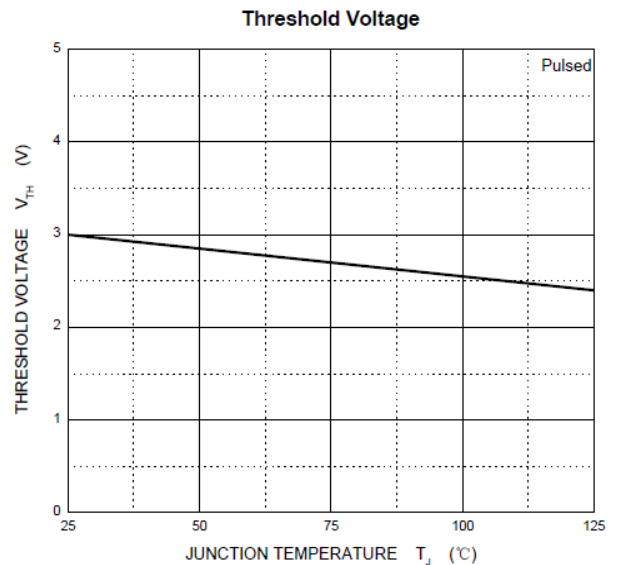
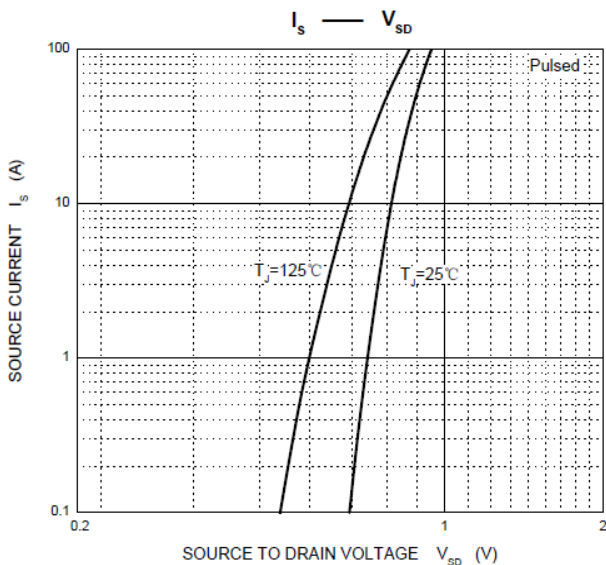
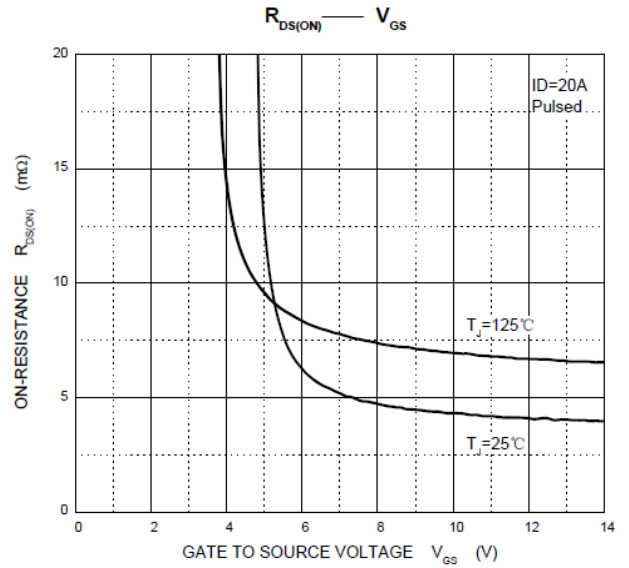
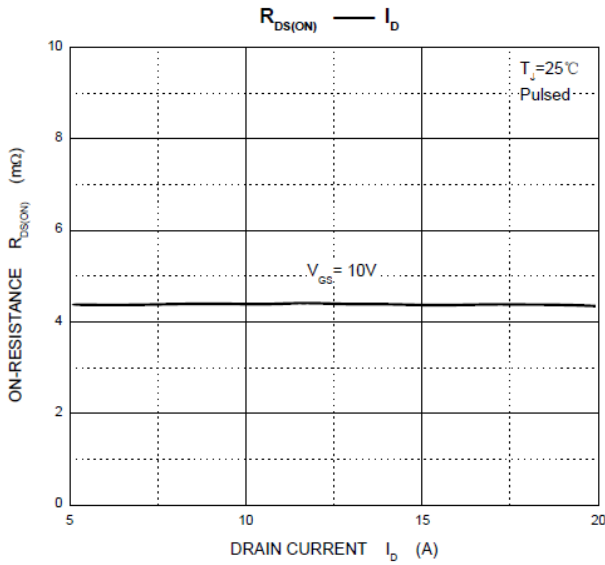
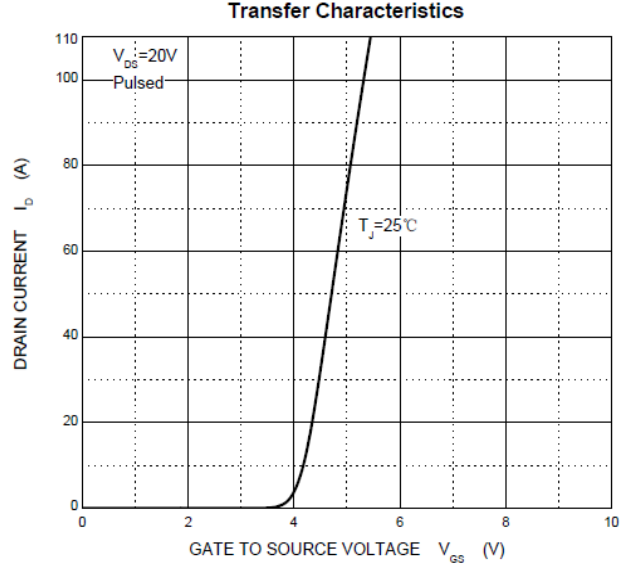
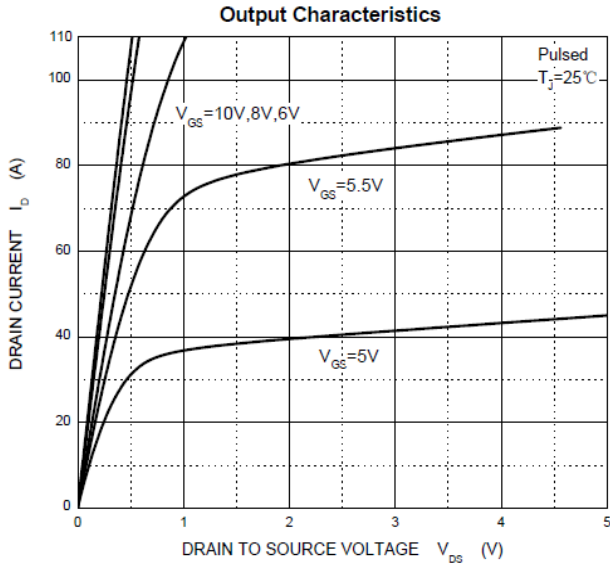
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	V _{(BR)DSS}	100	-	-	V	V _{GS} =0V, I _D =250μA
Drain-Source Leakage Current	I _{DSS}	-	-	1	μA	V _{DS} =80V, V _{GS} =0V
				100		V _{DS} =80V, V _{GS} =0V
Gate-Body Leakage Current	I _{GSS}	-	-	±100	nA	V _{DS} =0V, V _{GS} =±20V
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)}	-	4.3	5	mΩ	V _{GS} =10V, I _D =20A
Gate Resistance	R _g	-	1.9	-	Ω	f=1MHz
Total Gate Charge	Q _g	-	66.5	-	nC	V _{DS} =50V V _{GS} =10V I _D =22A
Gate-Source Charge	Q _{gs}	-	15.9	-		
Gate-Drain Charge	Q _{gd}	-	19.8	-		
Turn-on Delay Time	T _{d(on)}	-	28.2	-	nS	V _{DS} =50V V _{GS} =10V R _G =2.2Ω I _D =22A
Rise Time	T _r	-	7.5	-		
Turn-off Delay Time	T _{d(off)}	-	81.9	-		
Fall Time	T _f	-	20.1	-		
Input Capacitance	C _{iss}	-	3907	-	pF	V _{DS} =45V V _{GS} =0V f=100kHz
Output Capacitance	C _{oss}	-	794	-		
Reverse Transfer Capacitance	C _{rss}	-	16	-		
Drain-Source Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	-	-	1	V	V _{GS} =0V, I _S =25A
Continuous Source Current ¹	I _S	-	-	110	A	
Pulsed Source Current ²	I _{SM}	-	-	390	A	

Notes:

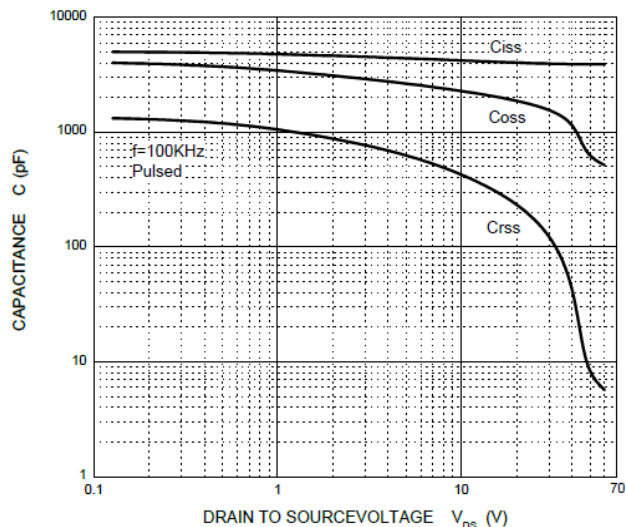
1. T_C=25°C Limited only by maximum temperature allowed.
2. Pulse test: Pulse width ≤ 10μs, duty cycle ≤ 1%.
3. E_{AS} condition: V_{DD}=50V, V_{GS}=10V, L=0.1mH, R_G=25Ω Starting T_J=25°C.
4. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%.
5. The value of R_{θJA} is measured with the device mounted on 1 in 2 FR-4 board with 1.5oz.Copper, in a still air environment with T_A=25°C.

CHARACTERISTICS CURVE

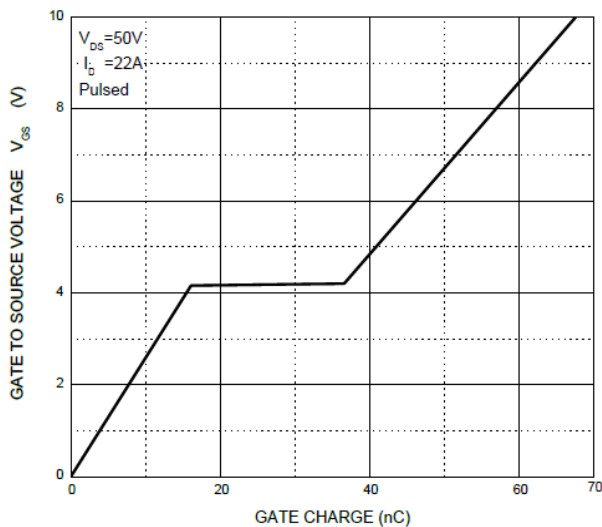


CHARACTERISTICS CURVE

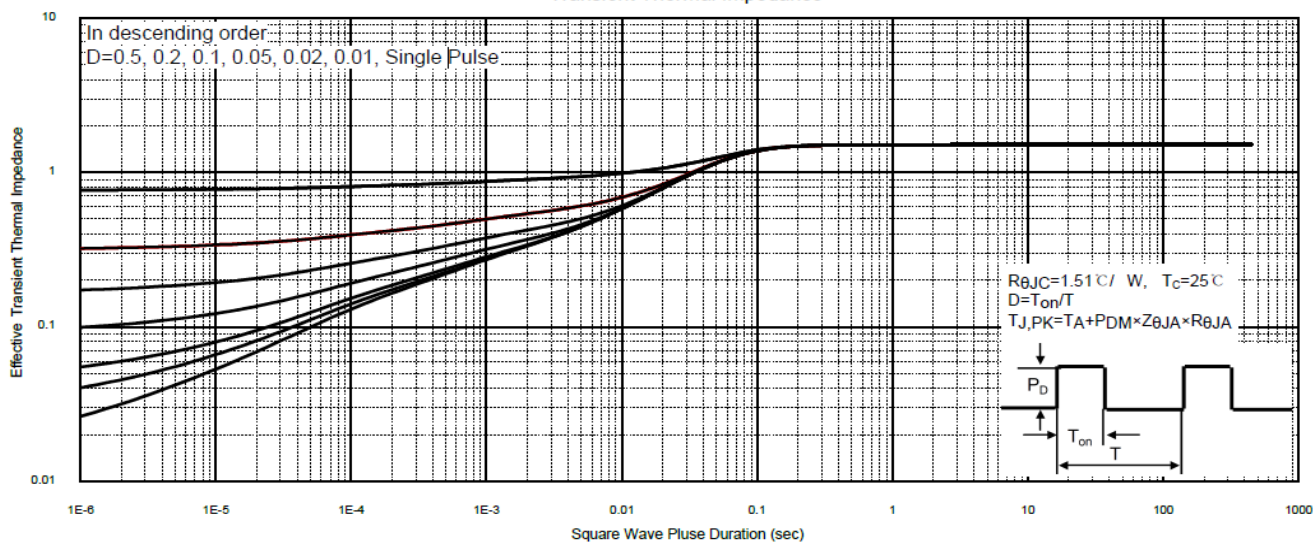
Capacitances



Gate Charge



Transient Thermal Impedance



Maximum Forward Biased Safe Operating Area

