

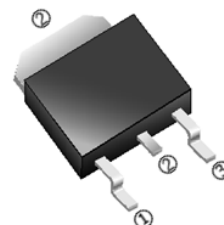
RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

The SSD22N15SV-C is the Shielded Gate Technology N-ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSD22N15SV-C meet the RoHS and Green Product requirement with full function reliability approved.

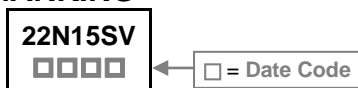
TO-252(D-Pack)



FEATURES

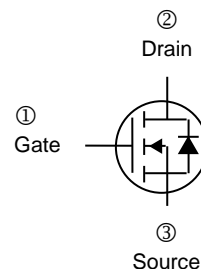
- Shielded Gate Trench Technology
- High Speed Power Switching
- Super Low Gate Charge
- Green Device Available

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch



ORDER INFORMATION

Part Number	Type
SSD22N15SV-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹ @ $V_{GS}=10V$	I_D	$T_C=25^\circ C$	22
		$T_C=100^\circ C$	14
Pulsed Drain Current ²	I_{DM}	74	A
Total Power Dissipation ³	P_D	39	W
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$
Thermal Resistance Ratings			
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	62.5	$^\circ C/W$
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	3.2	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Drain-Source Breakdown Voltage	BV_{DSS}	150	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$	
Gate Threshold Voltage	$V_{GS(th)}$	2	-	4	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	
Forward Transconductance	g_{fs}	-	25	-	S	$V_{DS}=5\text{V}, I_D=6\text{A}$	
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 20\text{V}$	
Drain-Source Leakage Current	I_{DSS}	$T_J=25^\circ\text{C}$	-	-	1	μA	$V_{DS}=120\text{V}, V_{GS}=0$
		$T_J=55^\circ\text{C}$	-	-	5		$V_{DS}=120\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance ²	$R_{DS(ON)}$	-	47	58	m Ω	$V_{GS}=10\text{V}, I_D=6\text{A}$	
Total Gate Charge	Q_g	-	21.39	-	nC	$I_D=6\text{A}$ $V_{DS}=75\text{V}$ $V_{GS}=10\text{V}$	
Gate-Source Charge	Q_{gs}	-	6.5	-			
Gate-Drain Change	Q_{gd}	-	5.1	-			
Turn-on Delay Time	$T_{d(on)}$	-	10.4	-	nS	$V_{DD}=75\text{V}$ $I_D=6\text{A}$ $V_{GS}=10\text{V}$ $R_G=3.3\Omega$	
Rise Time	T_r	-	9.6	-			
Turn-off Delay Time	$T_{d(off)}$	-	18.9	-			
Fall Time	T_f	-	9	-			
Input Capacitance	C_{iss}	-	1284	-	pF	$V_{GS}=0$ $V_{DS}=75\text{V}$ $f=1\text{MHz}$	
Output Capacitance	C_{oss}	-	93	-			
Reverse Transfer Capacitance	C_{rss}	-	3	-			
Source-Drain Diode							
Diode Forward Voltage ²	V_{SD}	-	-	1.2	V	$V_{GS}=0, I_S=1\text{A}$	
Continuous Source Current ¹	I_S	-	-	22	A	$V_G=V_D=0$, Force Current	
Reverse Recovery Time	T_{rr}	-	45	-	nS	$I_F=6\text{A}, dI/dt=100\text{A}/\mu\text{s}$, $T_J=25^\circ\text{C}$	
Reverse Recovery Charge	Q_{rr}	-	138	-	nC		

Notes:

- The data tested by surface mounted on a 1inch² FR4 Board with 2OZ copper.
- The data tested by pulsed, Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
- The power dissipation is limited by 150 $^\circ\text{C}$, junction temperature.

TYPICAL CHARACTERISTICS CURVE

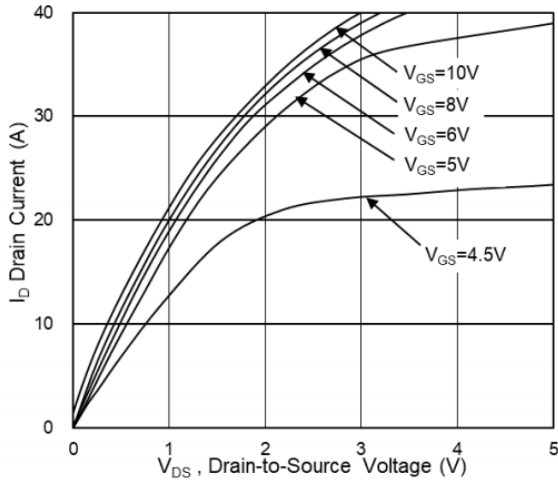


Fig.1 Typical Output Characteristics

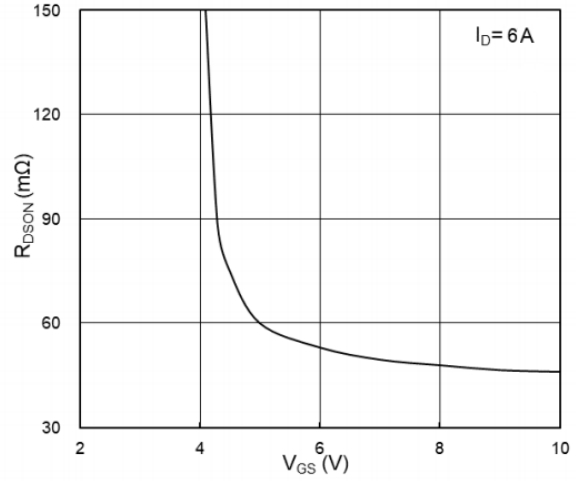


Fig.2 On-Resistance vs G-S Voltage

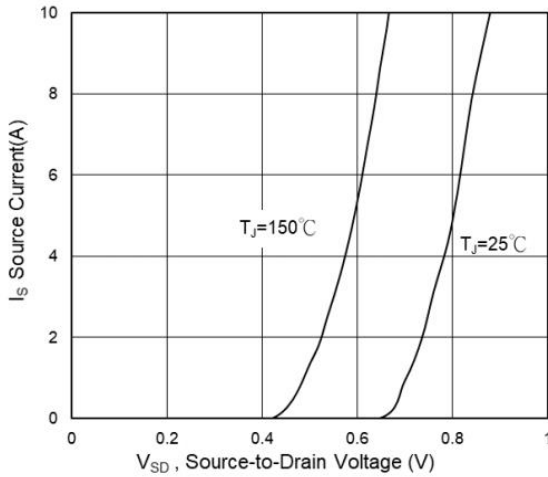


Fig.3 Source Drain Forward Characteristics

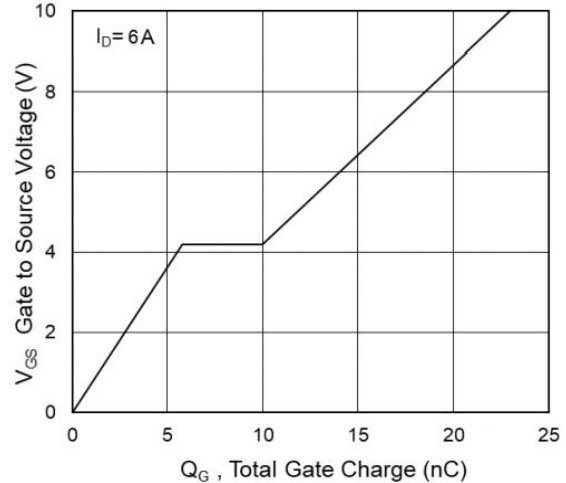


Fig.4 Gate-Charge Characteristics

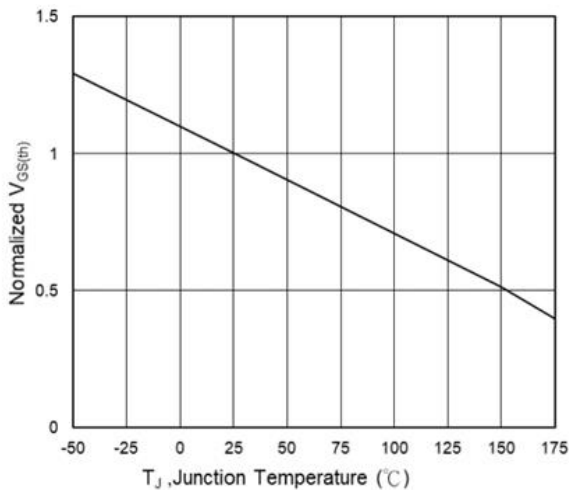


Fig.5 Normalized $V_{GS(th)}$ vs T_J

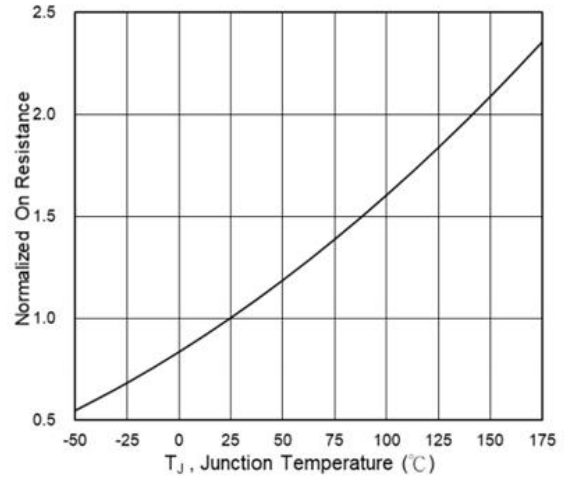


Fig.6 Normalized $R_{DS(ON)}$ vs T_J

TYPICAL CHARACTERISTICS CURVE

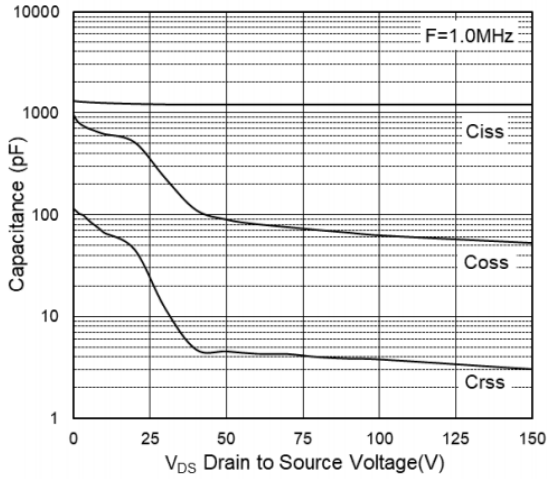


Fig.7 Capacitance

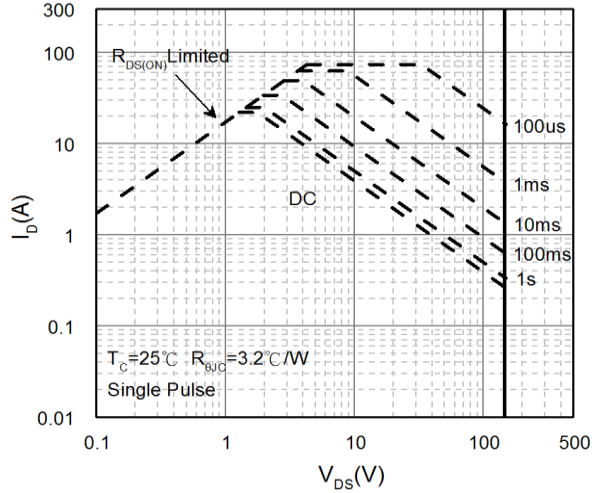


Fig.8 Safe Operating Area

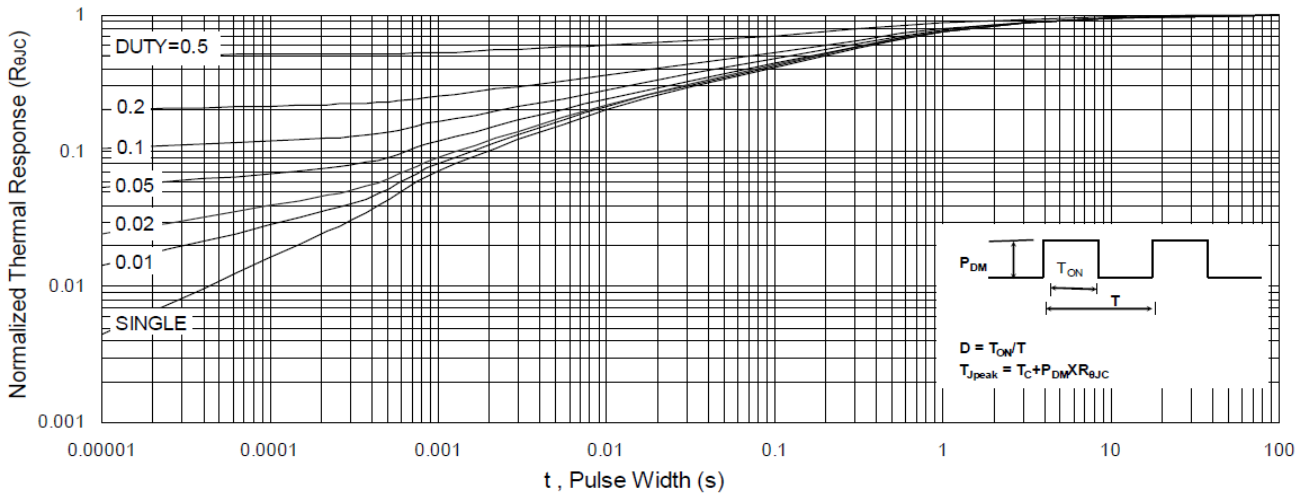


Fig.9 Normalized Maximum Transient Thermal Impedance

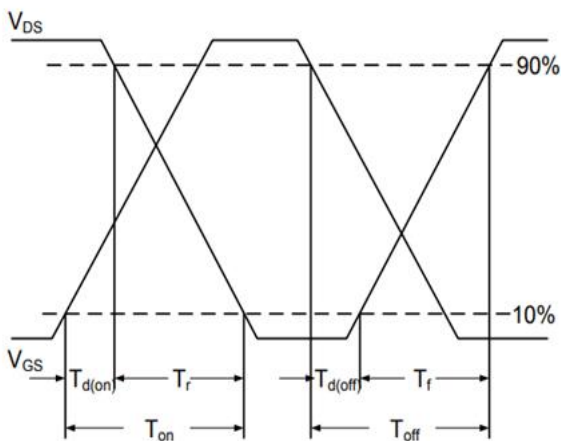


Fig.10 Switching Time Waveform

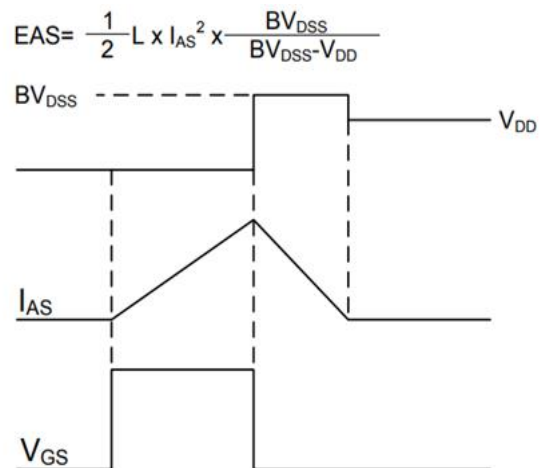
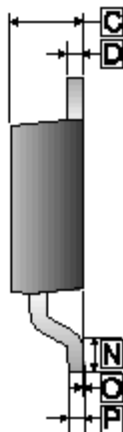
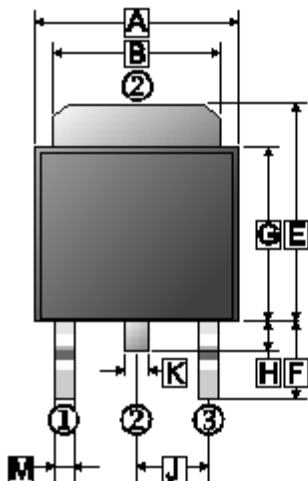


Fig.11 Unclamped Inductive Switching Waveform

PACKAGE OUTLINE DIMENSIONS

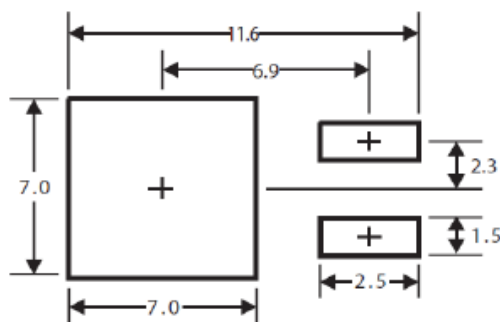
TO-252



REF.	Millimeter	
	Min.	Max.
A	6.30	6.90
B	4.95	5.53
C	2.10	2.50
D	0.35	0.90
E	6.00	7.70
F	2.90 REF.	
G	5.30	6.40
H	0.60	1.20
J	2.30 REF.	
K	0.89 REF.	
M	0.45	1.14
N	1.55 TYP.	
O	0	0.15
P	0.58 REF.	

MOUNTING PAD LAYOUT

TO-252



*Dimensions in millimeters