Elektronische Bauelemente

SSE70N15SV-C

70A, 150V, $R_{DS(ON)}$ 19.5mΩ

N-Channel Shielded Gate Trench Power MOSFET

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

DESCRIPTION

The SSE70N15SV-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 SSE70N15SV-C meet the RoHS and Green Product requirement with full function reliability approved.

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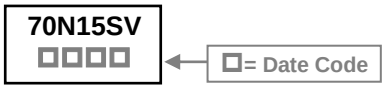
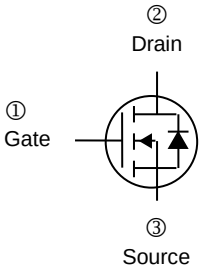
FEATURES

- Shielded Gate Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING





ORDER INFORMATION

Part Number	Type
SSE70N15SV-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}	150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25°C	I_D	70	A
	T_C=100°C		44	
Pulsed Drain Current [2]		I_{DM}	160	A
Power Dissipation	T_C=25°C	P_D	156	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	0.8	

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	150	-	-	V	V_{GS}=0V, I_D=250μA
Gate Threshold Voltage		$V_{GS(th)}$	2	-	4	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	1	μA	V_{DS}=120V, V_{GS}=0V
	T_J=55°C		-	-	100		V_{DS}=120V, V_{GS}=0V
Static Drain-Source On-Resistance [3]		$R_{DS(ON)}$	-	17	19.5	mΩ	V_{GS}=10V, I_D=20A
Total Gate Charge		Q_g	-	25	-	nC	I_D=20A V_{DS}=75V V_{GS}=10V
Gate-Source Charge		Q_{gs}	-	9	-		
Gate-Drain Change		Q_{gd}	-	3	-		
Turn-on Delay Time		$T_{d(on)}$	-	9	-	nS	V_{DD}=75V I_D=20A V_{GS}=10V R_G=10Ω
Rise Time		T_r	-	8	-		
Turn-off Delay Time		$T_{d(off)}$	-	15	-		
Fall Time		T_f	-	9	-		
Input Capacitance		C_{iss}	-	1960	-	pF	V_{GS}=0V V_{DS}=75V f=1MHz
Output Capacitance		C_{oss}	-	130	-		
Reverse Transfer Capacitance		C_{rss}	-	8	-		
Source-Drain Diode							
Diode Forward Voltage [3]		V_{SD}	-	-	1.2	V	I_S=20A, V_{GS}=0V
Continuous Source Current [1]		I_S	-	-	70	A	
Pulsed Source Current [2]		I_{SM}	-	-	160	A	
Reverse Recovery Time		t_{rr}	-	60	-	nS	I_F=20A, V_R=75V, dI/dt=100A/μs,
Reverse Recovery Charge		Q_{rr}	-	120	-	nC	

Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2oz copper.
2. Pulse width limited by maximum junction temperature, pulse width≦ 300us, duty cycle≦ 2%.
3. The Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.

TYPICAL CHARACTERISTIC

Fig 1. Typical Output Characteristics

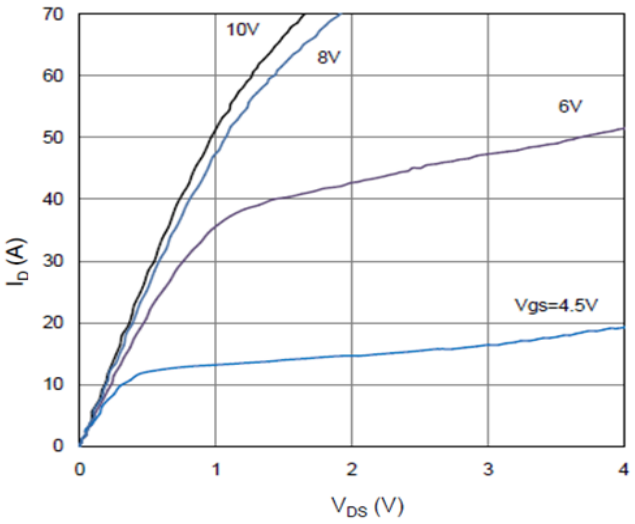


Figure 2. On-Resistance vs. Gate-Source Voltage

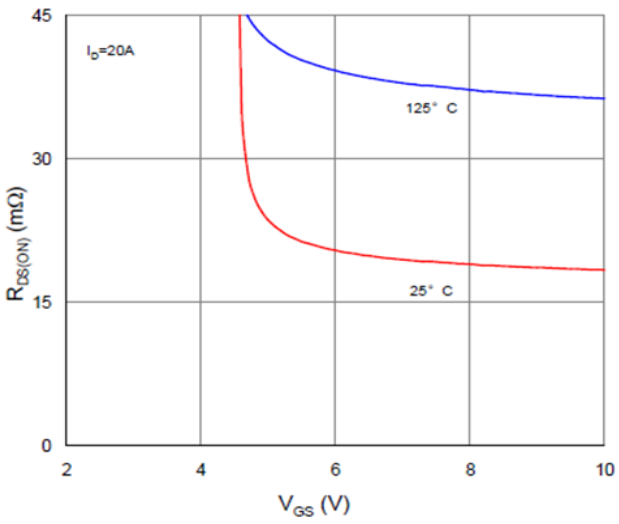


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

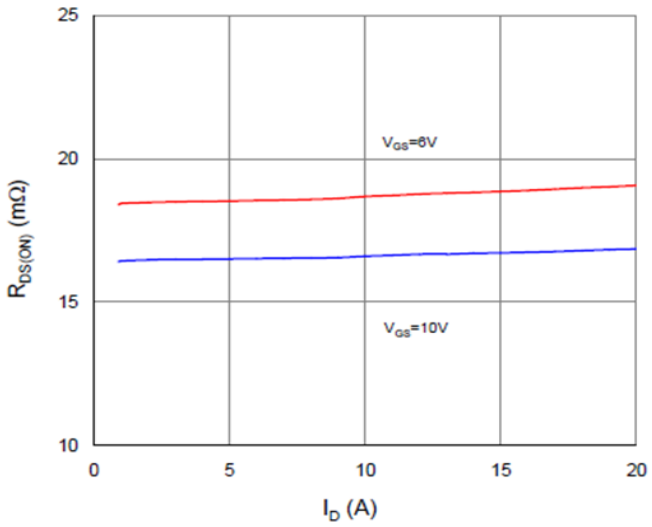


Figure 4. Normalized On-Resistance vs. Junction Temperature

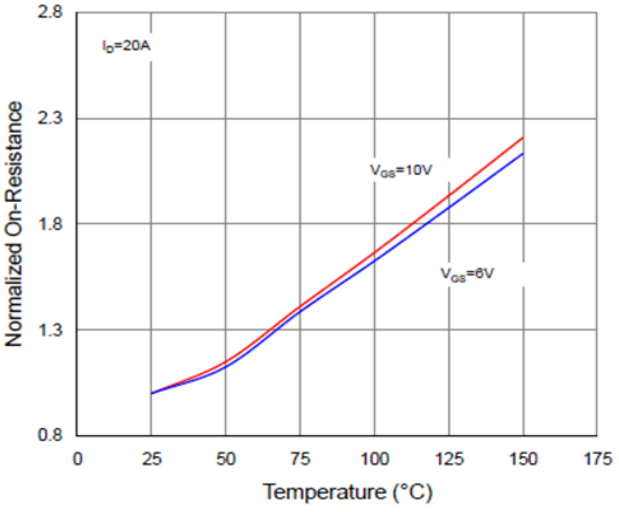


Figure 5. Typical Transfer Characteristics

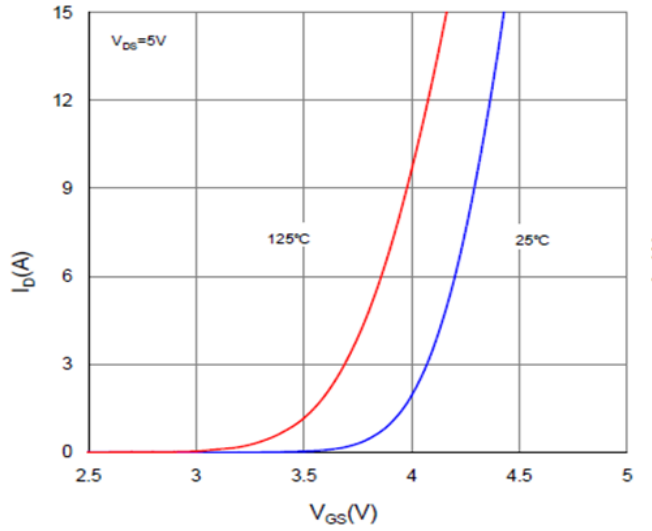
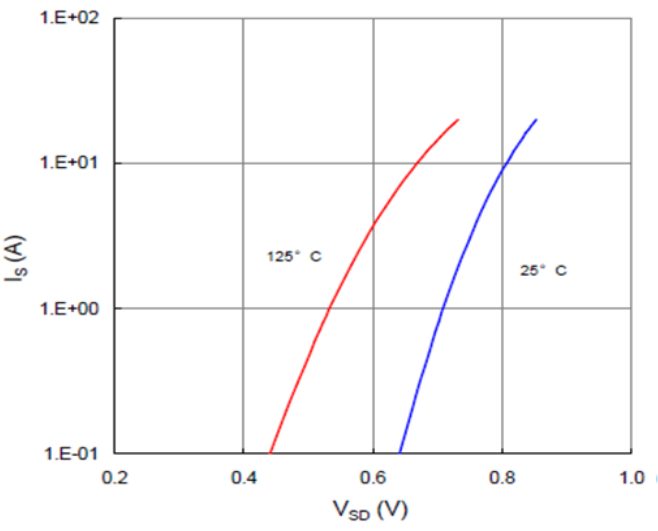


Figure 6. Typical Source-Drain Diode Forward Voltage



TYPICAL CHARACTERISTIC

Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

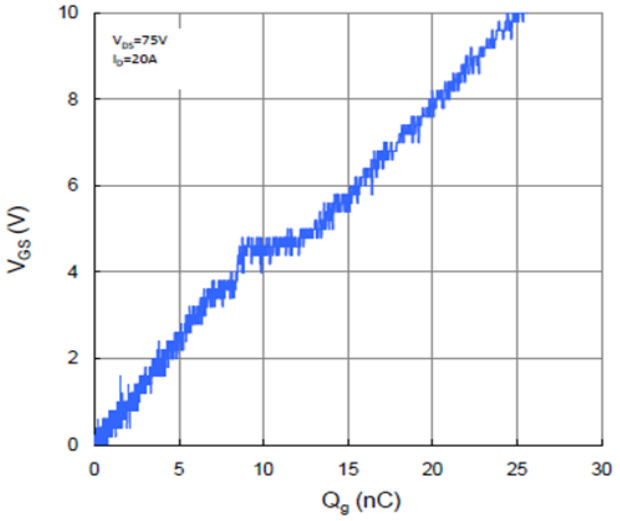


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

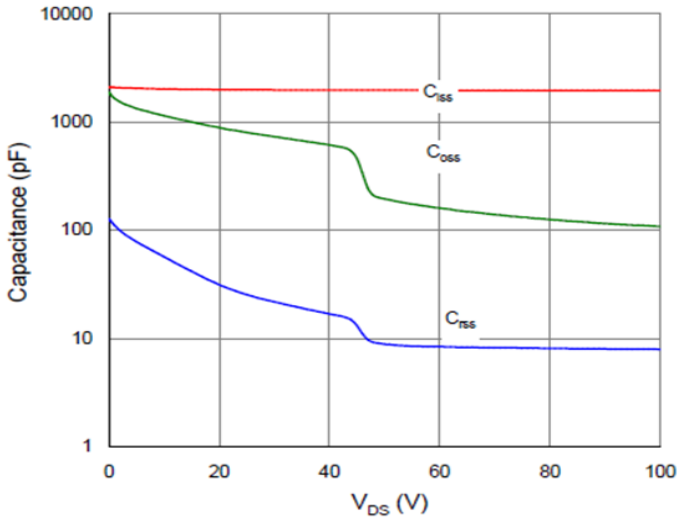


Figure 9. Maximum Safe Operating Area

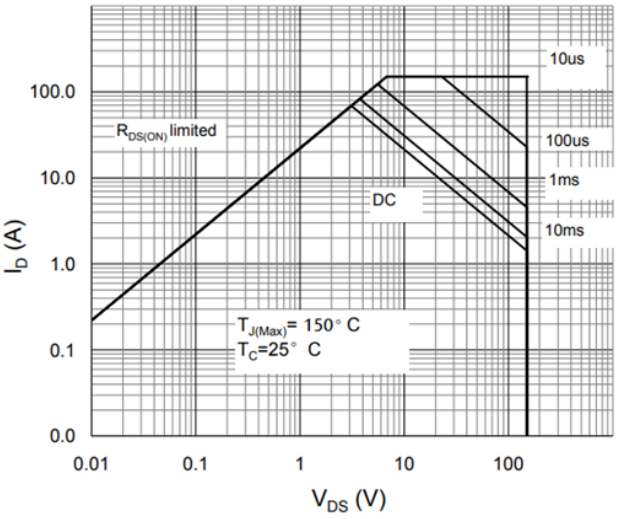


Figure 10. Maximun Drain Current vs. Case Temperature

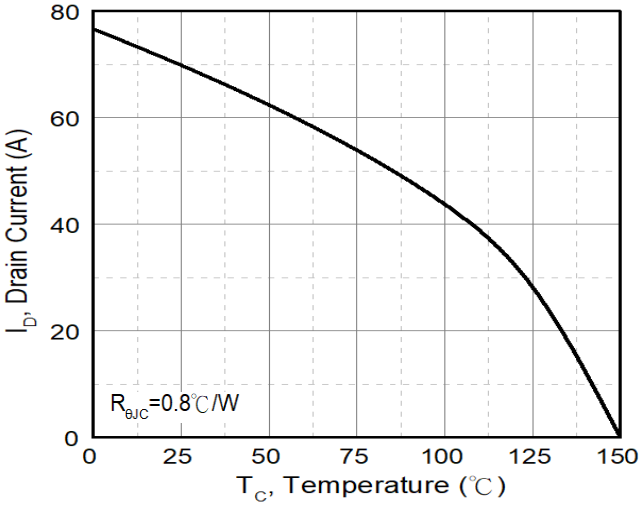
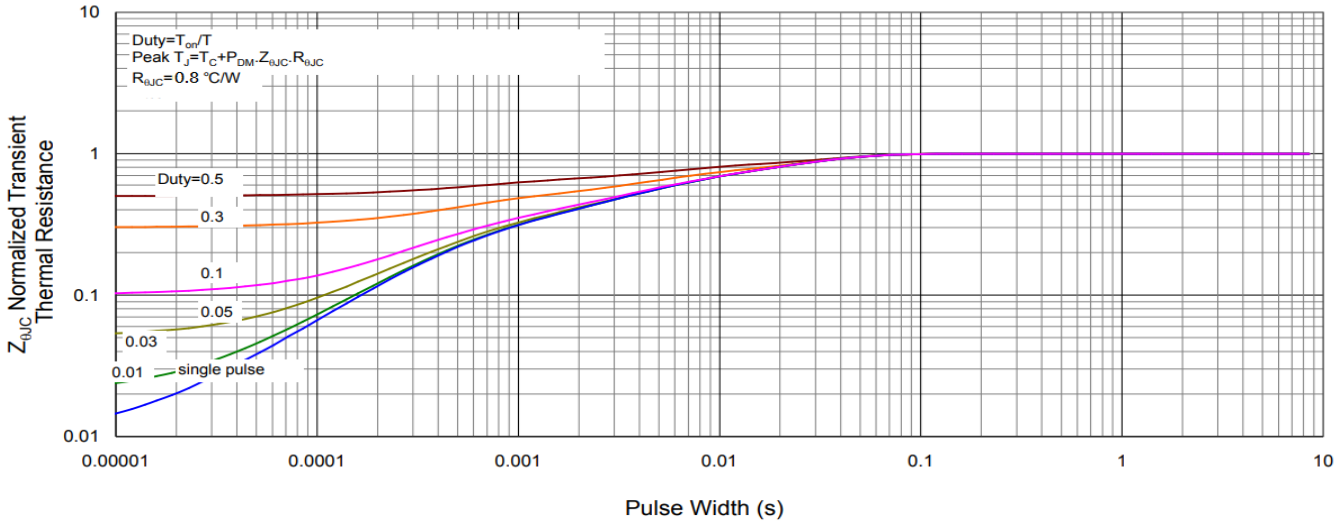


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Case



PACKAGE OUTLINE DIMENSIONS

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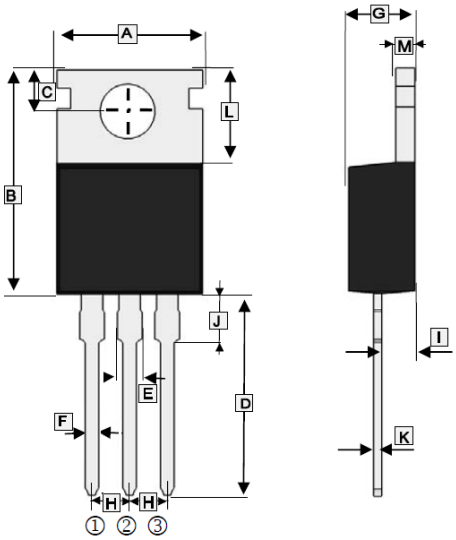

REF.	Millimeter	
	Min.	Max.
A	9.70	10.60
B	14.22	16.50
C	2.54	3.40
D	12.70	14.70
E	1.17	1.78
F	0.40	1.00
G	3.60	4.82
H	2.54 TYP.	
I	2.03	2.92
J	2.70	4.00
K	0.33	0.65
L	5.50	7.00
M	1.15	1.40