Elektronische Bauelemente

SSE14N20-C

14A, 200V, $R_{DS(ON)}$ 380mΩ
N-Ch Enhancement Mode Power MOSFET

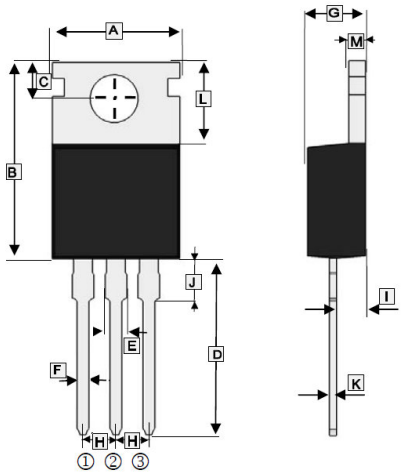
RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

The SSE14N20-C is the highest performance 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 SSE14N20-C meet the RoHS and Green Product requirement with full function reliability approved.

TO-220



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	9.70	10.60	H	2.54 TYP.	
B	14.22	16.5	I	2.03	2.92
C	2.54.	3.40	J	2.70	3.30
D	12.7	14.7	K	0.33	0.65
E	1.17	1.78	L	5.5	7
F	0.4	1.00	M	1.20	1.40
G	3.60	4.82			

FEATURES

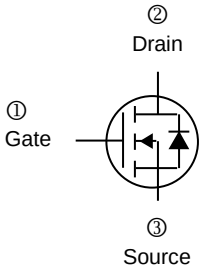
- High Speed Power Switching
- Super Low Gate Charge
- Green Device Available

MARKING

14N20
□□□□
□=Date Code

ORDER INFORMATION

Part Number	Type
SSE14N20-C	Lead (Pb)-free and Halogen-free



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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25℃	I_D	14	A
	T_C=100℃		8.8	
Pulsed Drain Current [4]		I_{DM}	38	A
Power Dissipation [3]	T_C=25℃	P_D	119	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62.5	℃/W
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	1.05	

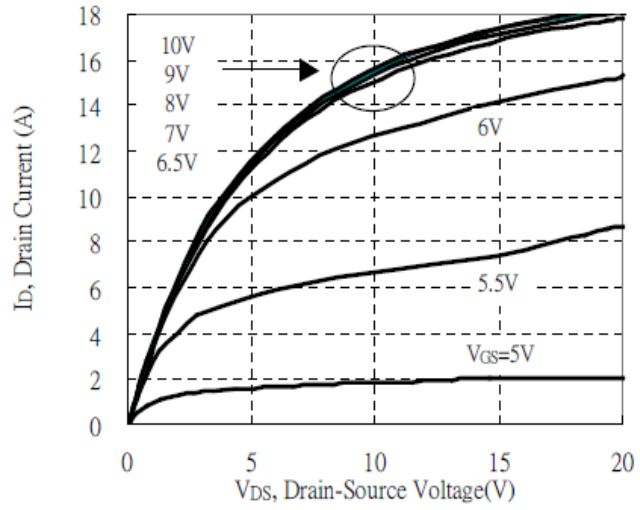
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	200	-	-	V	V_{GS}=0V, I_D=250μA
Gate Threshold Voltage		$V_{GS(th)}$	2	-	4	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance		g_{fs}	-	5.3	-	S	V_{DS}=15V, I_D=5A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=160V, V_{GS}=0V
	T_J=55℃			-	5		V_{DS}=160V, V_{GS}=0V
Static Drain-Source On-Resistance [2]		$R_{DS(ON)}$	-	300	380	mΩ	V_{GS}=10V, I_D=4A
Total Gate Charge		Q_g	-	10.6	-	nC	I_D=3A V_{DS}=160V V_{GS}=10V
Gate-Source Charge		Q_{gs}	-	2.3	-		
Gate-Drain Change		Q_{gd}	-	3.9	-		
Turn-on Delay Time		$T_{d(on)}$	-	8.8	-	nS	V_{DS}=100V I_D=3A V_{GS}=10V R_G=25Ω
Rise Time		T_r	-	16.8	-		
Turn-off Delay Time		$T_{d(off)}$	-	21.2	-		
Fall Time		T_f	-	19.6	-		
Input Capacitance		C_{iss}	-	395	-	pF	V_{GS}=0V V_{DS}=25V f=1MHz
Output Capacitance		C_{oss}	-	47	-		
Reverse Transfer Capacitance		C_{rss}	-	23	-		
Source-Drain Diode							
Diode Forward Voltage [2]		V_{SD}	-	-	1.2	V	I_S=1A, V_{GS}=0V
Continuous Source Current [1]		I_S	-	-	14	A	V_{DS}=V_{GS}=0V, Force Current
Pulsed Source Current [4]		I_{SM}	-	-	38	A	
Reverse Recovery Time		t_{rr}	-	50	-	nS	I_F=3A, dI/dt=100A/μs, T_J=25℃
Reverse Recovery Charge		Q_{rr}	-	86	-	nC	

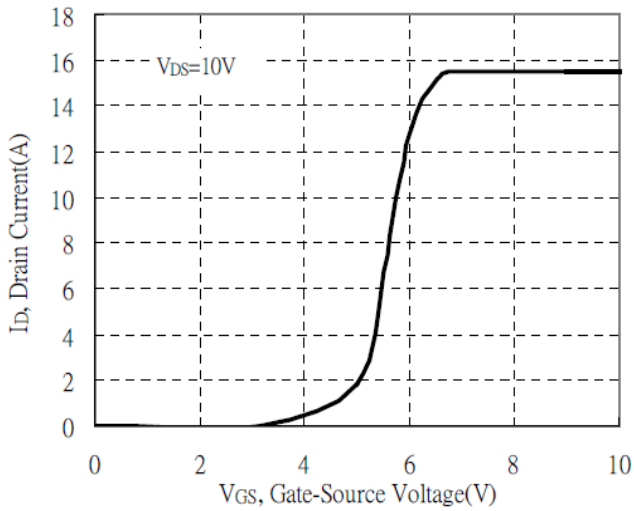
Notes:
1. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. The data tested by pulsed pulse width≦ 300us, duty cycle≦ 2%.
3. The power dissipation is limited by 150℃ juncti on temperature.
4. Pulse width limited by maximum junction temperature, pulse width≦10us, duty cycle≦2%

TYPICAL CHARACTERISTIC

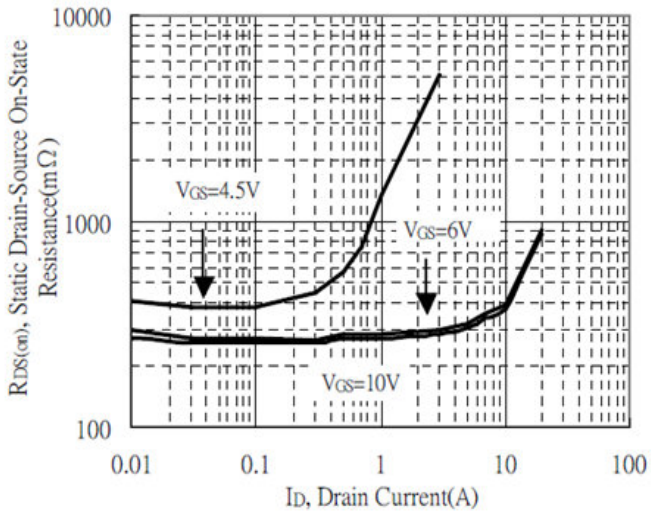
Typical Output Characteristics



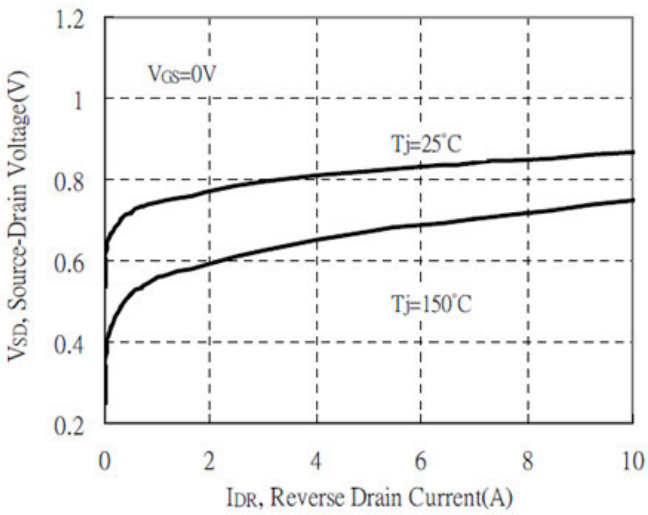
Typical Transfer Characteristics



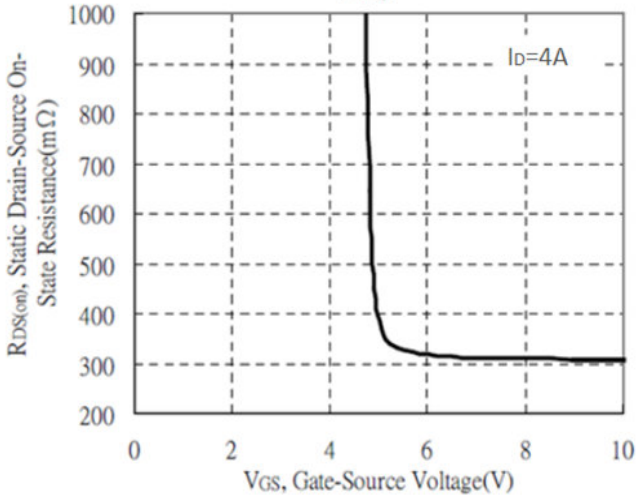
Static Drain-Source On-State resistance vs Drain Current



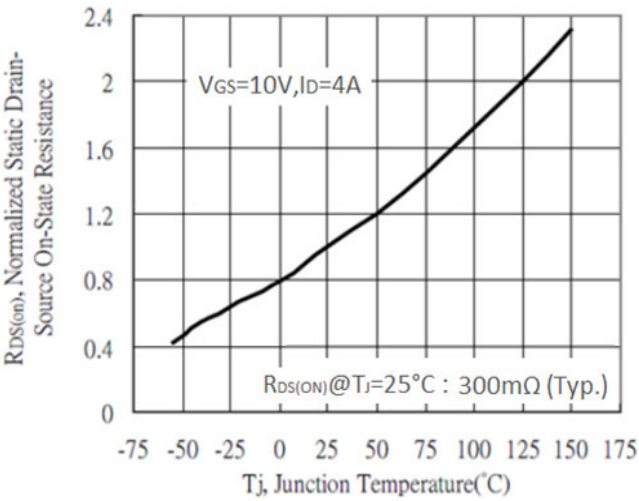
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

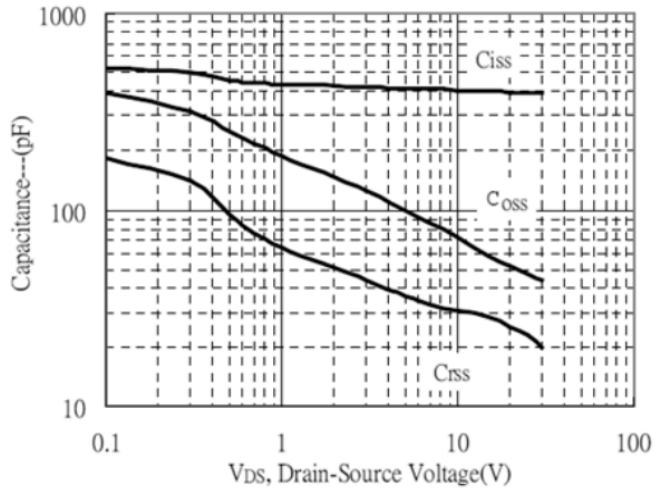


Drain-Source On-State Resistance vs Junction Tempearture

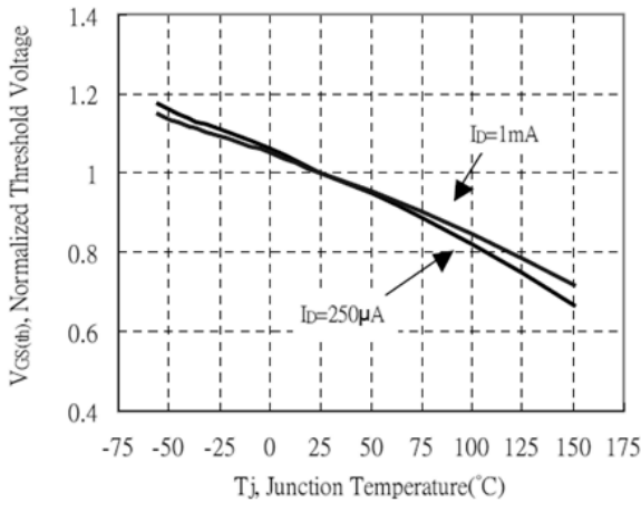


TYPICAL CHARACTERISTIC

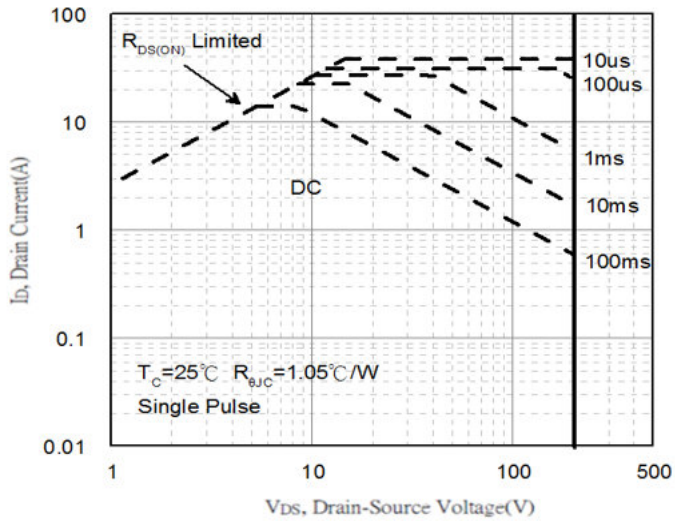
Capacitance vs Drain-to-Source Voltage



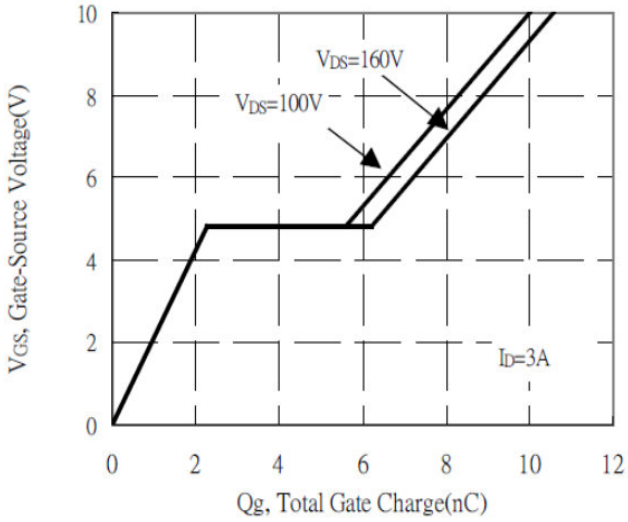
Threshold Voltage vs Junction Tempearture



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves