Elektronische Bauelemente

SSPR62N03-C

62A, 30V, $R_{DS(ON)}$ 5.8mΩ
N-Channel Enhancement Mode Power MOSFET

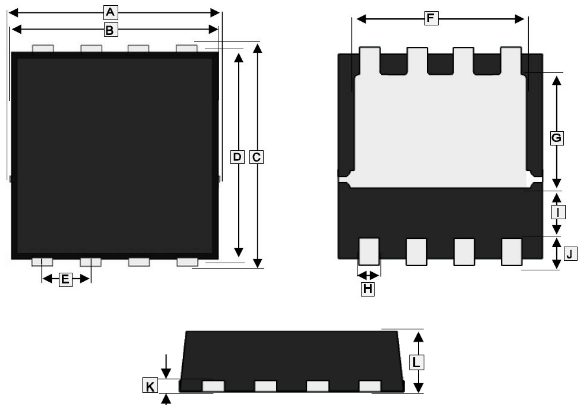
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSPR62N03-C is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications .

The SSPR62N03-C meet the RoHS and Green Product requirement with full function reliability approved.

SPR-8PP

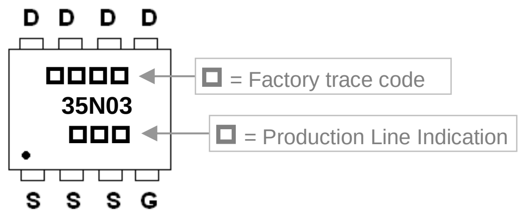


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	3.00	3.40	G	1.35	1.98
B	3.00	3.25	H	0.24	0.35
C	3.20	3.45	I	0.35 TYP.	
D	3.00	3.20	J	0.60 TYP.	
E	0.65 BSC.		K	0.10	0.25
F	2.39	2.60	L	0.70	0.90

FEATURES

- Lower Gate Charge
- Simple Drive Requirement
- Fast Switching Characteristic

MARKING

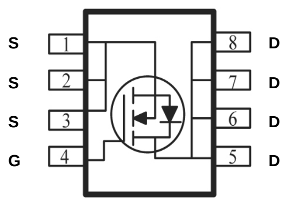


PACKAGE INFORMATION

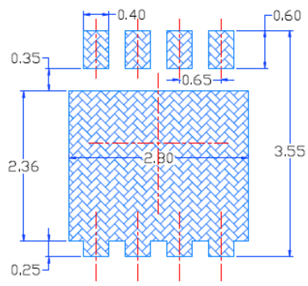
Package	MPQ	Leader Size
SPR-8PP	3K	13 inch

ORDER INFORMATION

Part Number	Type
SSPR62N03-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25℃	I_D	62	A
	T_C=100℃		39	
Pulsed Drain Current [2]		I_{DM}	150	A
Single Pulse Avalanche Energy [3]		E_{AS}	80	mJ
Avalanche Current		I_{AS}	40	A
Power Dissipation [4]	T_C=25℃	P_D	39	W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	℃
Thermal Resistance Rating				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	65	℃/W
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	3.2	

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS}=0, I_D= 250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	3	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transfer conductance	g_{fs}	-	43	-	S	V_{DS}=5V, I_D=30A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current, T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0
Drain-Source Leakage Current, T_J=55℃		-	-	5		V_{DS}=24V, V_{GS}=0
Static Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	4.3	5.8	mΩ	V_{GS}=10V, I_D=12A
		-	5.6	8		V_{GS}=4.5V, I_D=10A
Gate Resistance	R_g	-	2	-	Ω	f=1MHz
Total Gate Charge	Q_g	-	20	-	nC	I_D=15A V_{DS}=15V V_{GS}=4.5V
Gate-Source Charge	Q_{gs}	-	7.6	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	7.2	-		
Turn-on Delay Time [2]	$T_{d(on)}$	-	7.8	-	nS	V_{DD}=15V I_D=15A V_{GS}=10V R_G=3.3Ω
Rise Time	T_r	-	15	-		
Turn-off Delay Time	$T_{d(off)}$	-	37.3	-		
Fall Time	T_f	-	10.6	-		
Input Capacitance	C_{iss}	-	2295	-	pF	V_{GS}=0 V_{DS}=15V f=1MHz
Output Capacitance	C_{oss}	-	267	-		
Reverse Transfer Capacitance	C_{rss}	-	210	-		
Guaranteed Avalanche Characteristics						
Single Pulse Avalanche Energy [5]	E_{AS}	31	-	-	mJ	V_{DD}=15V, L=0.1mH, I_{AS}=25A
Source-Drain Diode						
Diode Forward Voltage [2]	V_{SD}	-	-	1.2	V	I_S=12A, V_{GS}=0V
Continuous Source Current [1,6]	I_S	-	-	62	A	V_G=V_D=0, Force Current
Pulsed Source Current [2,6]	I_{SM}	-	-	150	A	
Reverse Recovery Time	T_{rr}	-	14	-	nS	I_F=30A, dI/dt=100A/μs, T_J=25℃
Reverse Recovery Charge	Q_{rr}	-	5	-	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 E_{AS} data shows Max. rating, The test condition is V_{DD}=15V, V_{GS}=10V, L=0.1mH, I_{AS}=40A.
4. The power dissipation is limited by 150℃ juncti on temperature.
5. The Min. value is 100% E_{AS} tested guarantee.
6. The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.

CHARACTERISTIC CURVES

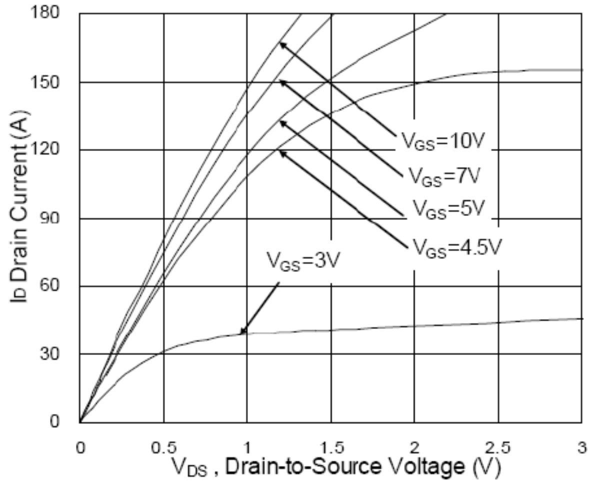


Fig.1 Typical Output Characteristics

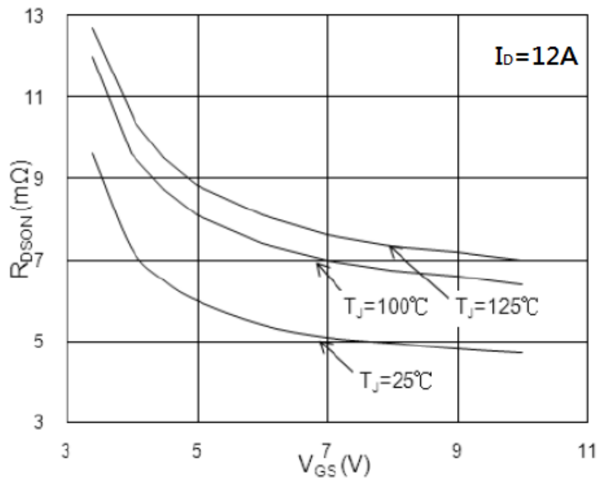


Fig.2 On-Resistance vs. G-S Voltage

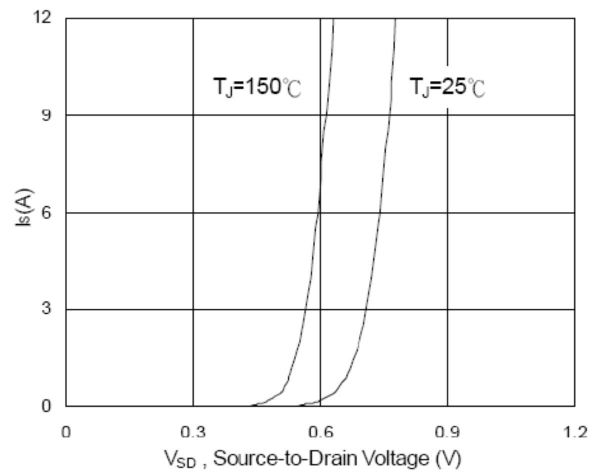


Fig.3 Forward Characteristics of Reverse

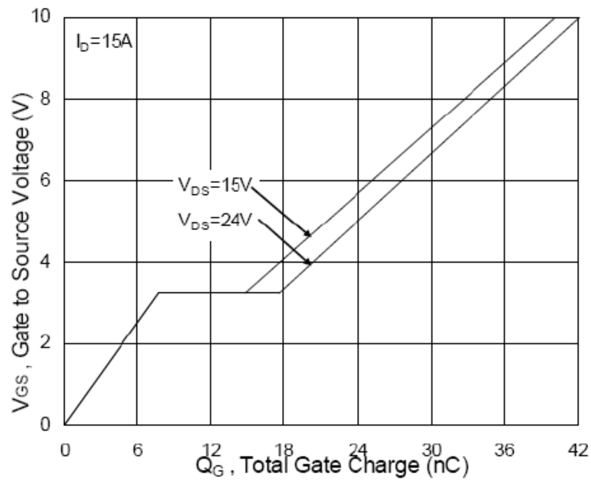


Fig.4 Gate-Charge Characteristics

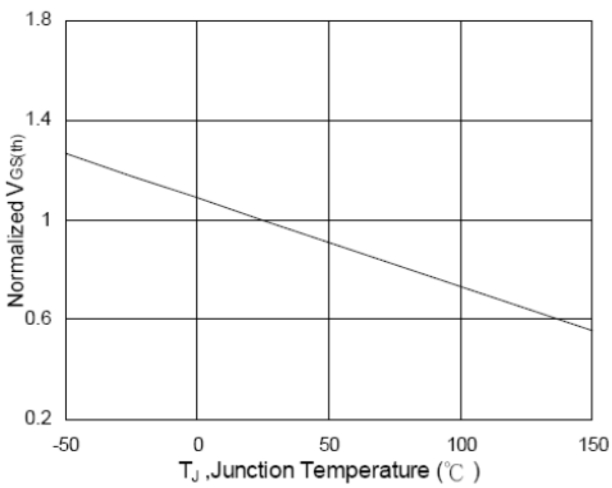


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

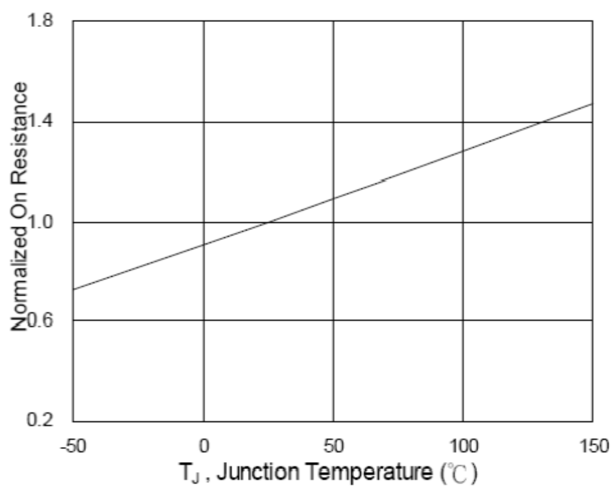


Fig.6 Normalized R_{DSON} vs. T_J

CHARACTERISTIC CURVES

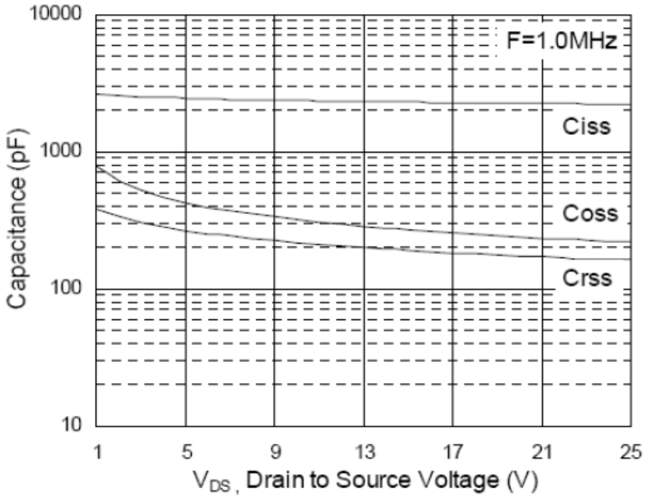


Fig.7 Capacitance

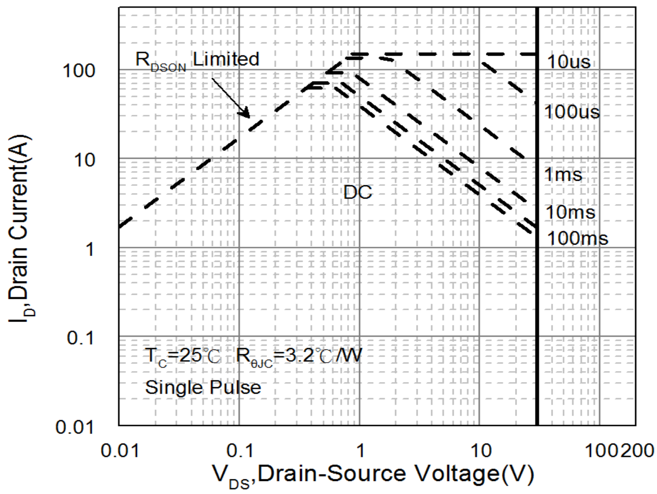


Fig.8 Safe Operating Area

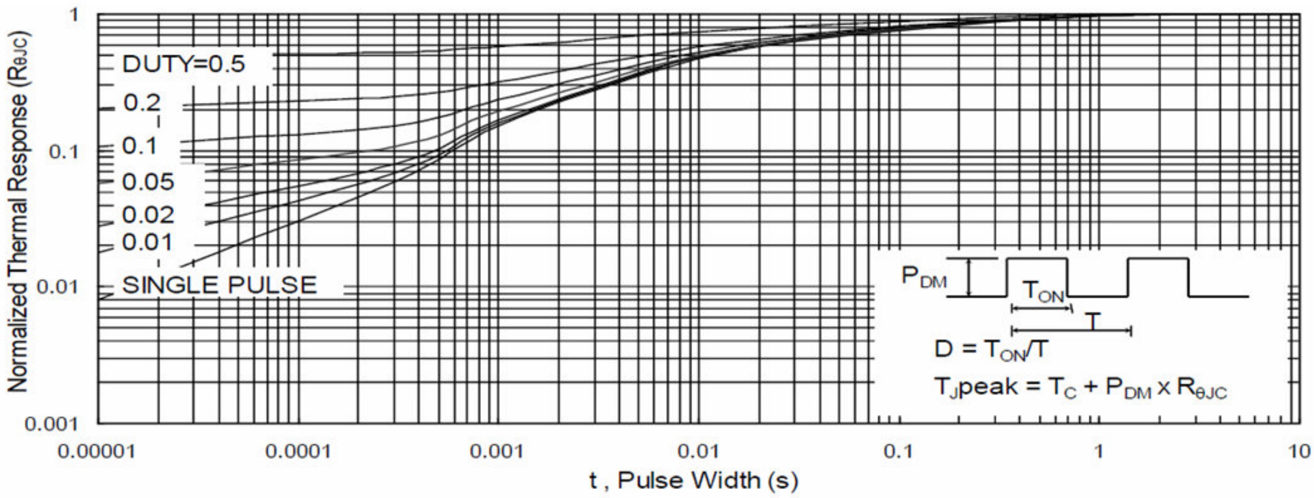


Fig.9 Normalized Maximum Transient Thermal Impedance

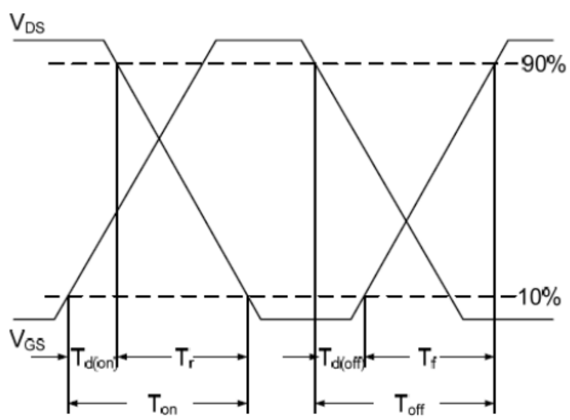


Fig.10 Switching Time Waveform

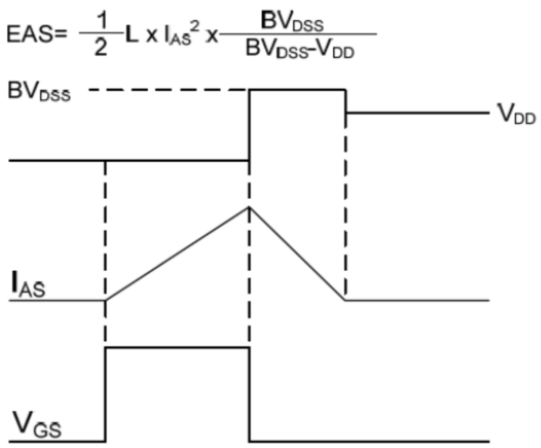


Fig.11 Unclamped Inductive Switching Waveform