Elektronische Bauelemente

SSPR28N03-C

28A, 30V, $R_{DS(ON)}$ 18mΩ
N-Ch Enhancement Mode Power MOSFET

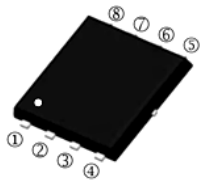
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSPR28N03-C is the highest performance trench 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 SSPR28N03-C meet the RoHS and Green Product requirement with full function reliability approved.

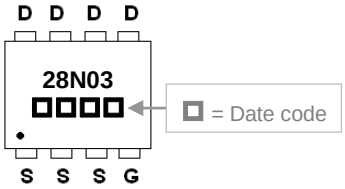
SPR-8PP



FEATURES

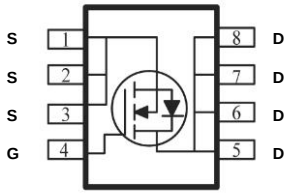
- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING



PACKAGE INFORMATION

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



ORDER INFORMATION

Part Number	Type
SSPR28N03-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	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°C	I_D	28	A
	T_C=100°C		18	
Pulsed Drain Current [3]		I_{DM}	55	A
Total Power Dissipation [1,2]	T_C=25°C	P_D	21	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Data				
Thermal Resistance Junction-Ambient [1] (Max.)		$R_{\theta JA}$	75	°C/W
Thermal Resistance Junction-Ambient			110	
Thermal Resistance Junction-Case [1] (Max.)		$R_{\theta JC}$	6	

ELECTRICAL CHARACTERISTICS (T_J=25°C 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	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance		g_{fs}	-	4.5	-	S	V_{DS}=5V, I_D=1A
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}=24V, V_{GS}=0
	T_J=55°C		-	-	5		
Static Drain-Source On-Resistance [3]		$R_{DS(ON)}$	-	15	18	mΩ	V_{GS}=10V, I_D=10A
			-	21	30		V_{GS}=4.5V, I_D=5A
Total Gate Charge		Q_g	-	7.2	-	nC	I_D=10A V_{DS}=20V V_{GS}=10V
Gate-Source Charge		Q_{gs}	-	1.4	-		
Gate-Drain Change		Q_{gd}	-	2.2	-		
Turn-on Delay Time		$T_{d(on)}$	-	4.1	-	nS	V_{DD}=15V I_D=5A V_{GS}=10V R_G=3.3Ω
Rise Time		T_r	-	9.8	-		
Turn-off Delay Time		$T_{d(off)}$	-	15.5	-		
Fall Time		T_f	-	6	-		
Input Capacitance		C_{iss}	-	572	-	pF	V_{GS}=0 V_{DS}=15V f=1MHz
Output Capacitance		C_{oss}	-	81	-		
Reverse Transfer Capacitance		C_{rss}	-	65	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	28	A	
Pulsed Source Current [3]		I_{SM}	-	-	55		
Diode Forward Voltage [3]		V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=1A

Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. The power dissipation is limited by 150°C junction temperature.
3. The data tested by pulsed, pulse width≦300μs, duty cycle≦2%.

TYPICAL CHARACTERISTIC

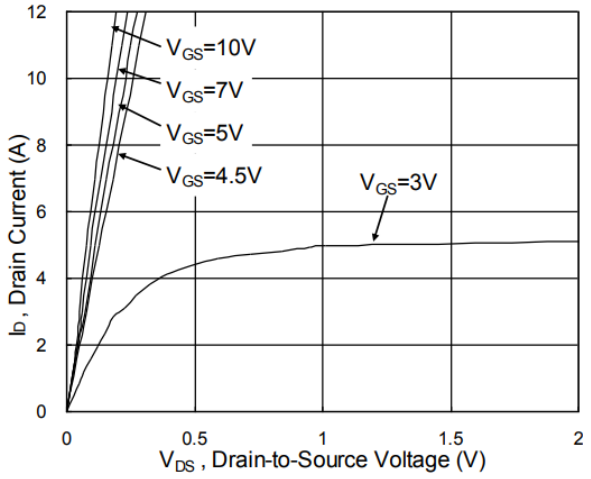


Fig.1 Typical Output Characteristics

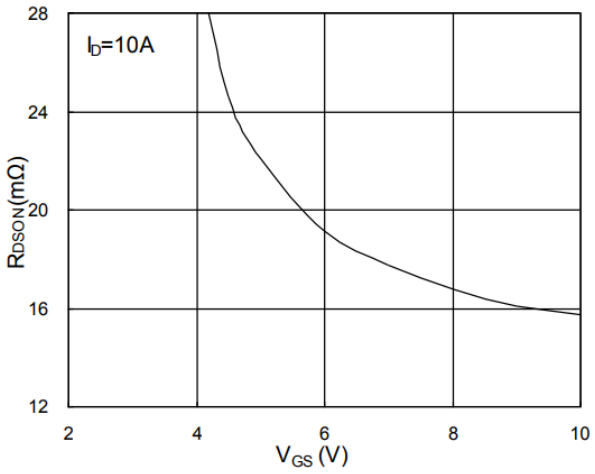


Fig.2 On-Resistance vs. Gate-Source

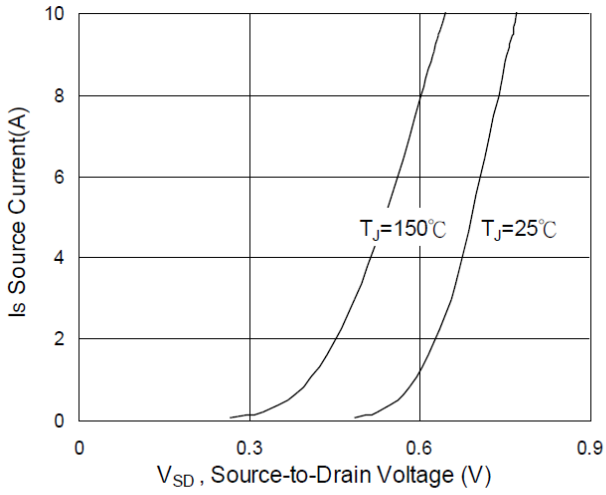


Fig.3 Forward Characteristics Of Reverse

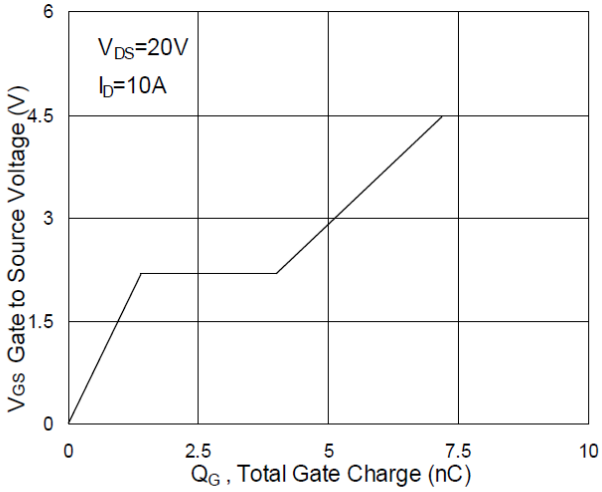


Fig.4 Gate-Charge Characteristics

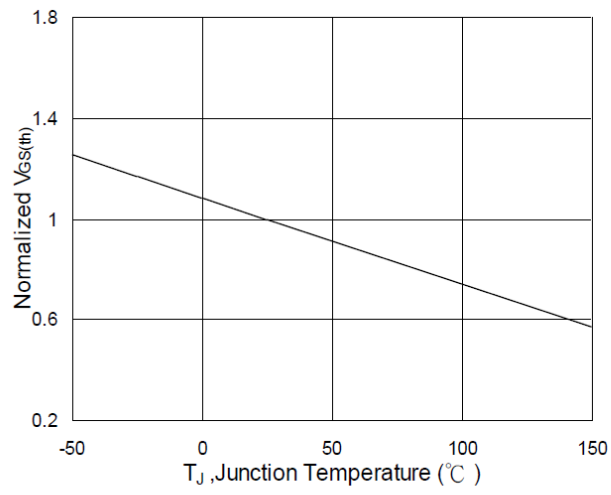


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

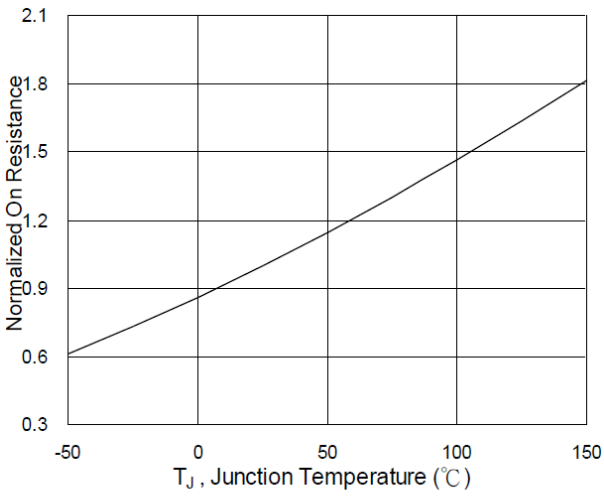


Fig.6 Normalized R_{DSON} vs. T_J

TYPICAL CHARACTERISTIC

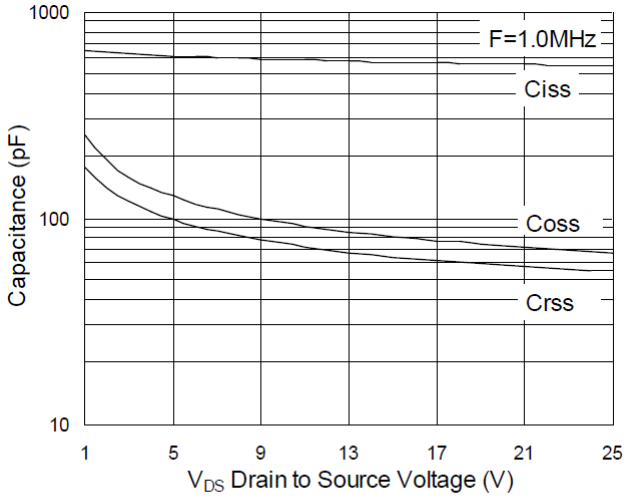


Fig.7 Capacitance

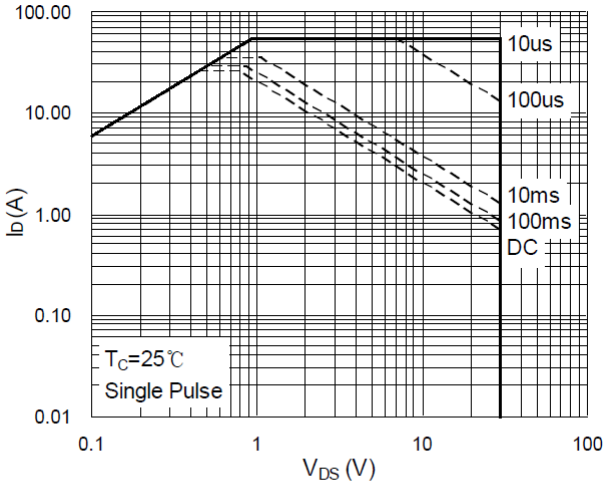


Fig.8 Safe Operating Area

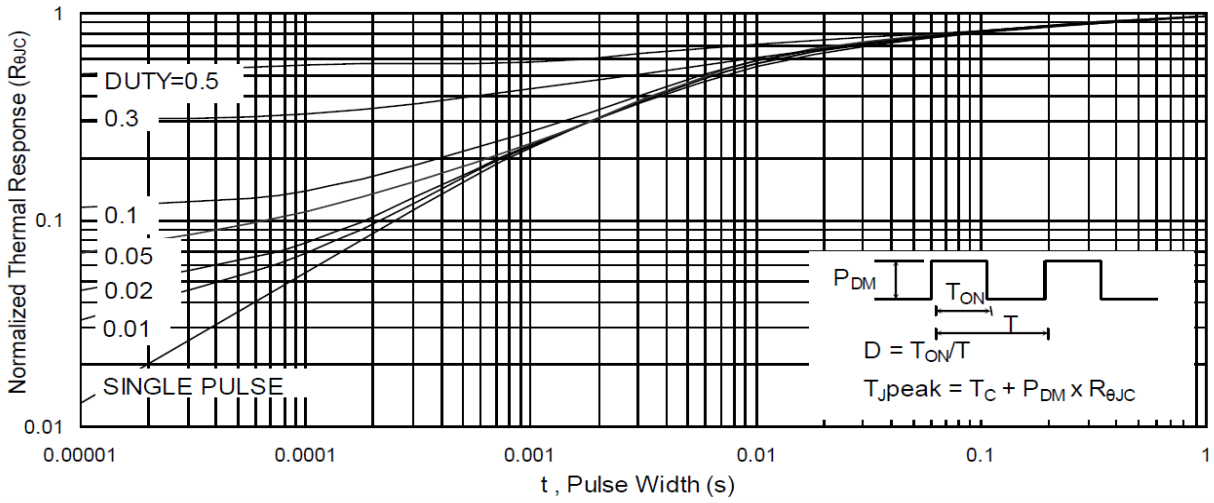


Fig.9 Normalized Maximum Transient Thermal Impedance

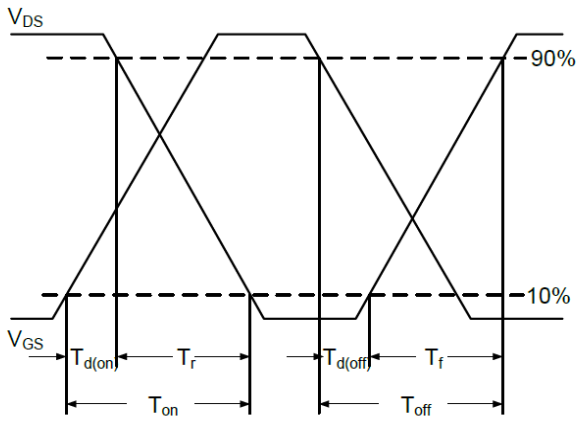


Fig.10 Switching Time Waveform

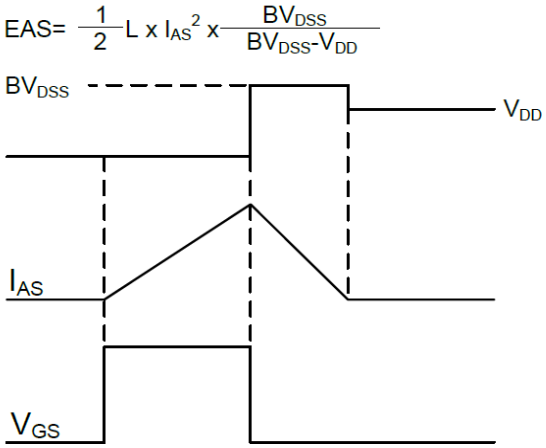
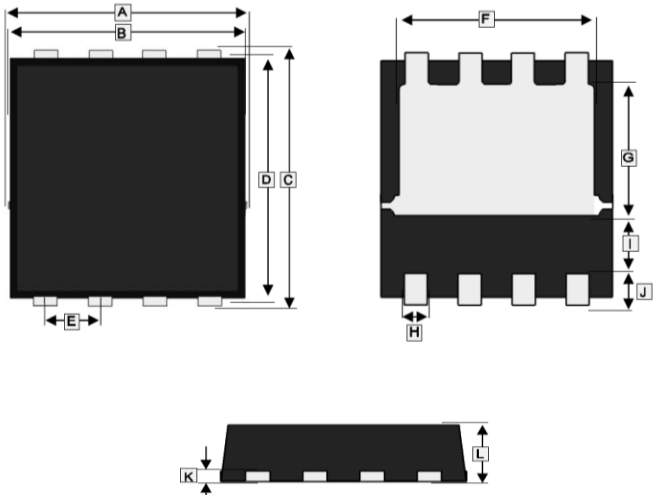


Fig.11 Unclamped Inductive Waveform

PACKAGE OUTLINE DIMENSIONS

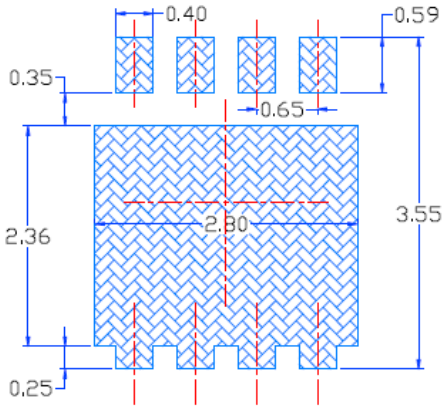
SPR-8PP



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

MOUNTING PAD LAYOUT

SPR-8PP



*Dimensions in millimeters