Elektronische Bauelemente

SSPR5A2P15-C

-2A, -150V, $R_{DS(ON)}$ 780mΩ

P-Channel Enhancement Mode Power MOSFET

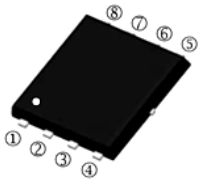
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSPR5A2P15-C is the highest performance trench P-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 SSPR5A2P15-C meet the RoHS and Green Product requirement with full function reliability approved.

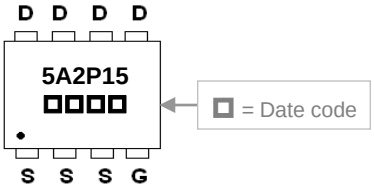
SPR-8PP



FEATURES

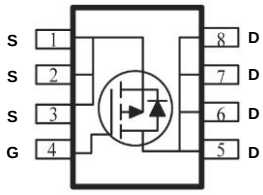
- Super Low Gate Charge
- Advanced high cell density Trench technology
- Green Device Available

MARKING



PACKAGE INFORMATION

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



ORDER INFORMATION

Part Number	Type
SSPR5A2P15-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Rating	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	-2	A
	T_C=100°C		-1.5	
Pulsed Drain Current [3]		I_{DM}	-8	A
Total Power Dissipation [2]	T_C=25°C	P_D	7.8	W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	°C
Thermal Resistance Rating				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62	°C/W
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	16	

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	-150	-	-	V	V_{GS}=0, I_D= -250uA
Gate-Threshold Voltage		$V_{GS(th)}$	-2	-	-4	V	V_{DS}=V_{GS}, I_D= -250uA
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	1	uA	V_{DS}= -120V, V_{GS}=0
	T_J=85°C		-	-	30		V_{DS}= -120V, V_{GS}=0
Static Drain-Source On-Resistance [3]		$R_{DS(ON)}$	-	650	780	mΩ	V_{GS}= -10V, I_D= -1A
			-	700	980		V_{GS}= -6V, I_D= -0.5A
Total Gate Charge		Q_g	-	10.8	-	nC	V_{DS}= -75V V_{GS}= -10V I_D= -1A
Gate-Source Charge		Q_{gs}	-	3.1	-		
Gate-Drain (“Miller”) Change		Q_{gd}	-	2.2	-		
Turn-on Delay Time		$T_{d(on)}$	-	21	-	nS	V_{DD}= -30V V_{GS}= -10V I_D= -1A R_G=6Ω
Rise Time		T_r	-	16	-		
Turn-off Delay Time		$T_{d(off)}$	-	40	-		
Fall Time		T_f	-	18	-		
Input Capacitance		C_{iss}	-	706	-	pF	V_{DS}= -75V V_{GS}=0 f=1MHz
Output Capacitance		C_{oss}	-	23	-		
Reverse Transfer Capacitance		C_{rss}	-	13	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	-1.4	A	V_G=V_D=0, Force Current
Diode Forward Voltage [3]		V_{SD}	-	-	-1.2	V	I_S= -1A, V_{GS}=0, T_J=25°C

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≦ 300us, duty cycle≦ 2%.

CHARACTERISTIC CURVES

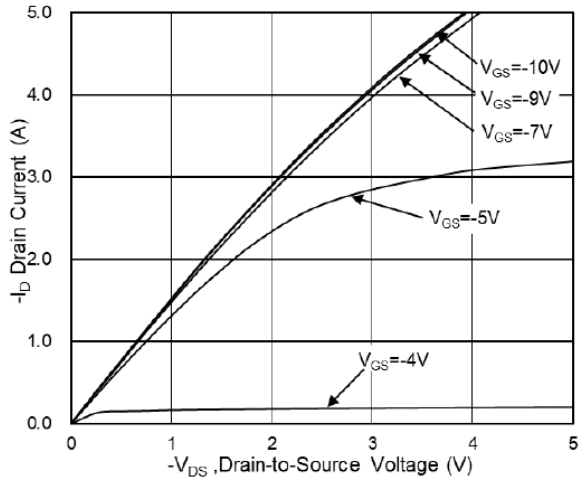


Fig.1 Typical Output Characteristics

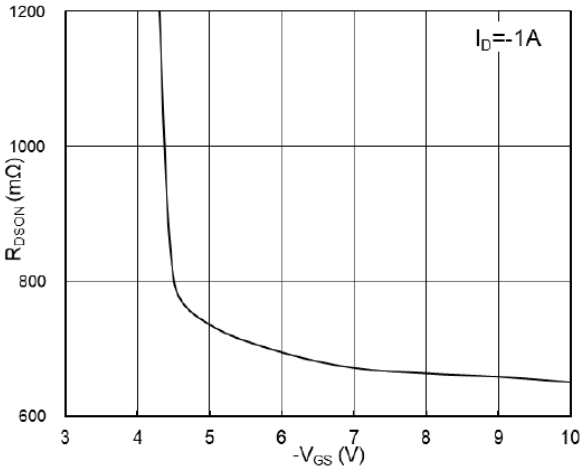


Fig.2 On-Resistance vs G-S Voltage

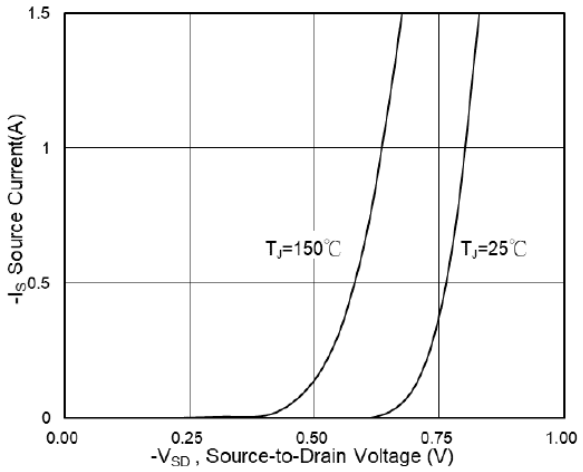


Fig.3 Source Drain Forward Characteristics

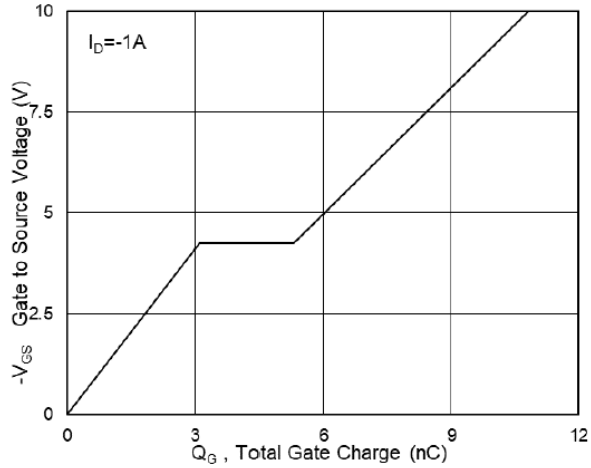


Fig.4 Gate-Charge Characteristics

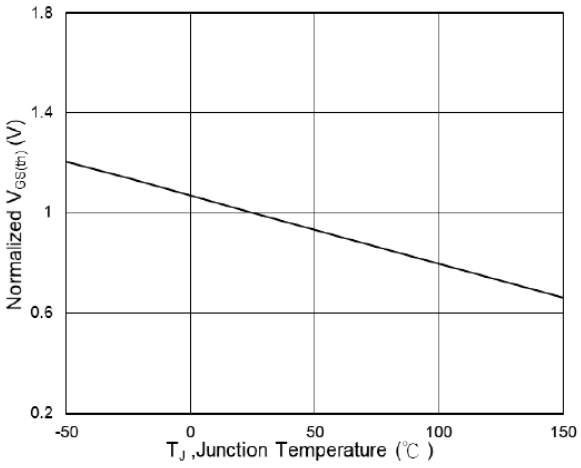


Fig.5 Normalized $V_{GS(th)}$ vs T_J

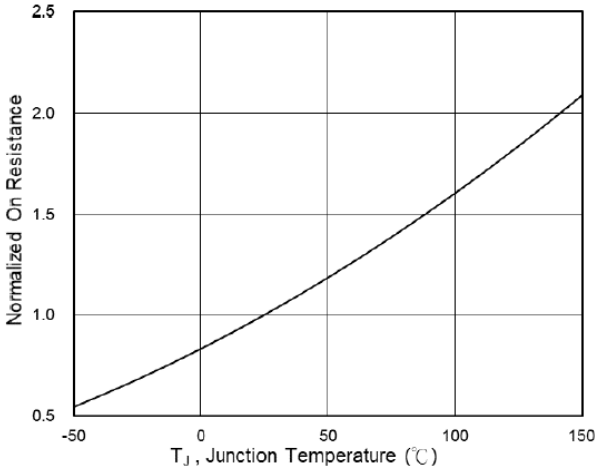


Fig.6 Normalized R_{DSON} vs T_J

CHARACTERISTIC CURVES

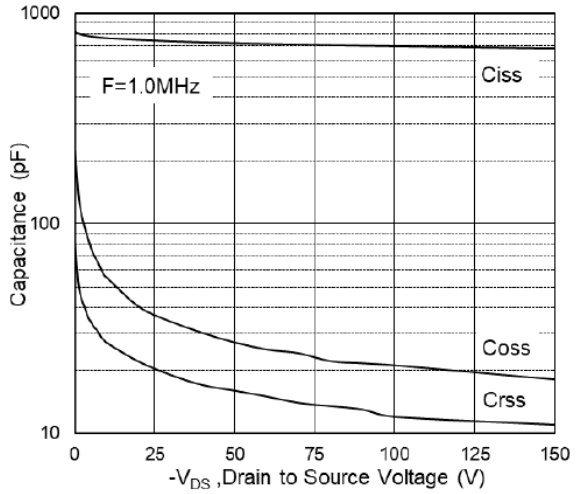


Fig.7 Capacitance

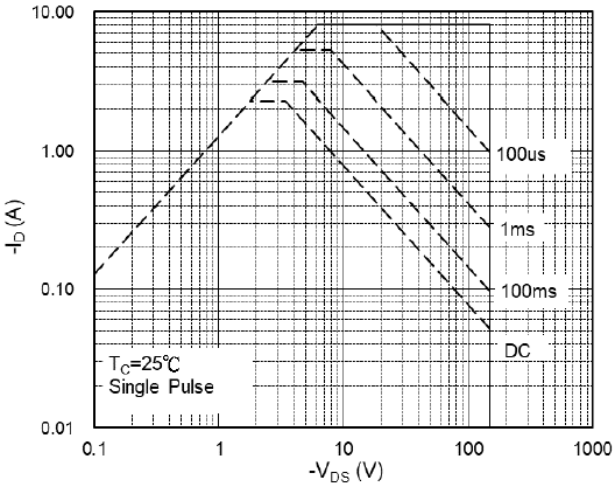


Fig.8 Safe Operating Area

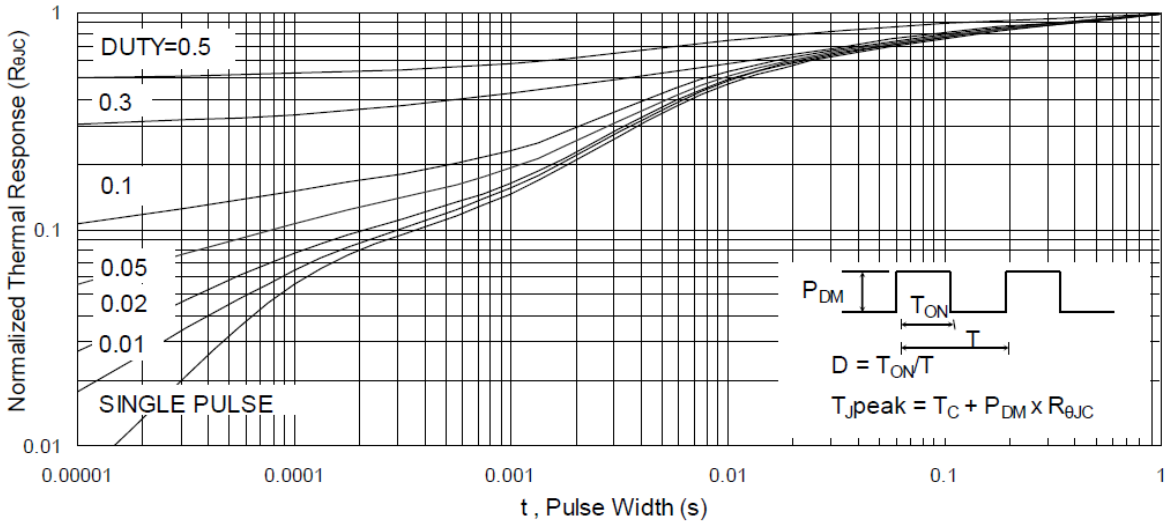


Fig.9 Normalized Maximum Transient Thermal Impedance

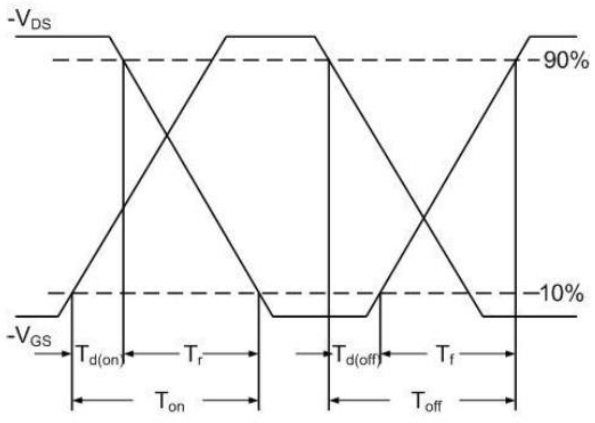


Fig.10 Switching Time Waveform

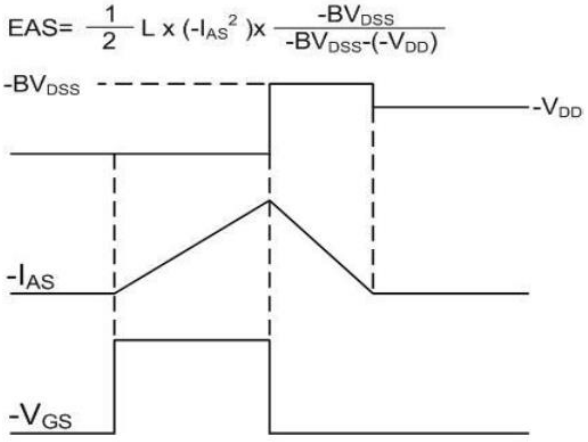
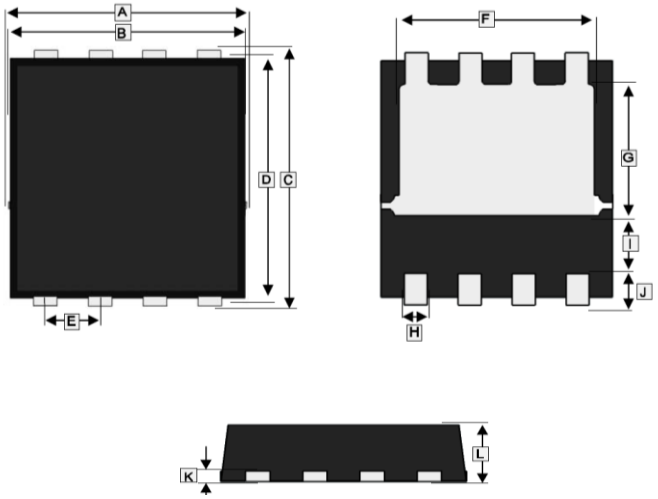


Fig.11 Unclamped Inductive Waveform

PACKAGE OUTLINE DIMENSIONS

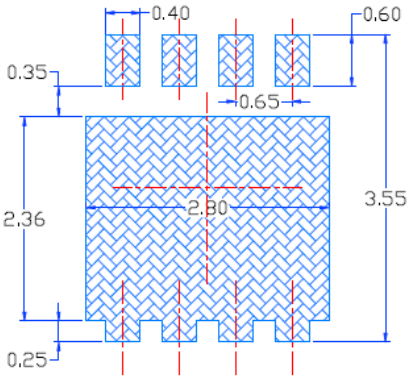
SPR-8PP



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