

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

DESCRIPTION

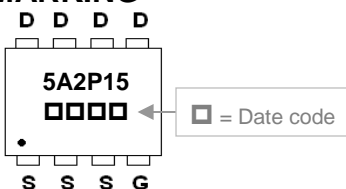
The SSPR5A2P15-C is the highest performance trench P-ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications .

The SSPR5A2P15-C meet the RoHS and Green Product requirement with full function reliability approved.

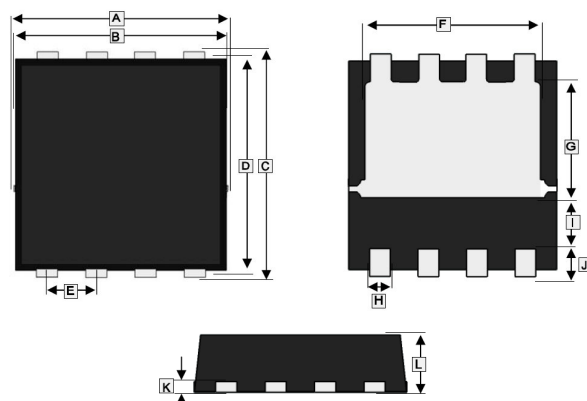
FEATURES

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

MARKING



SPR-8PP



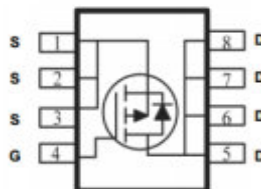
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	3.00	3.40	G	1.35	1.98
B	3.00	3.25	H	0.24	0.35
C	3.20	3.45	I	0.35 TYP.	
D	3.00	3.20	J	0.60 TYP.	
E	0.65 BSC.		K	0.10	0.25
F	2.39	2.60	L	0.70	0.90

PACKAGE INFORMATION

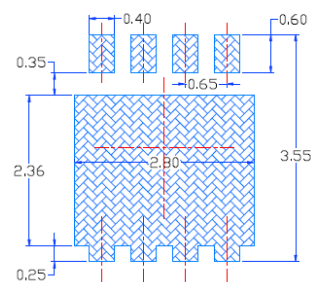
Package	MPQ	Leader Size
SPR-8PP	3K	13 inch

ORDER INFORMATION

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



Mounting Pad Layout



*Dimensions in millimeters

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹ @ $V_{GS} = -10\text{V}$	$T_C=25^\circ\text{C}$	-5.2	A
	$T_C=100^\circ\text{C}$	-3.2	
	$T_A=25^\circ\text{C}$	-1.4	
	$T_A=70^\circ\text{C}$	-1	
Pulsed Drain Current ³	I_{DM}	-10.4	A
Total Power Dissipation	$T_C=25^\circ\text{C}$	39	W
	$T_A=25^\circ\text{C}$	2.1	
Operating Junction & Storage Temperature	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance Rating			
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	60	$^\circ\text{C/W}$
Thermal Resistance Junction-Ambient ²		135	
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	3.2	

ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$ unless otherwise specified)

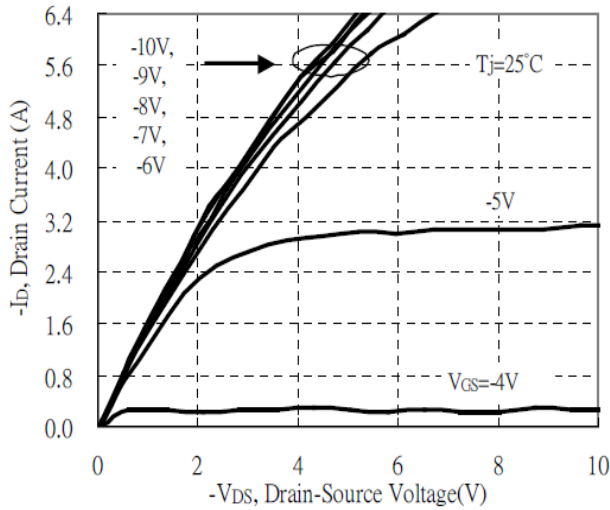
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Drain-Source Breakdown Voltage	BV_{DSS}	-150	-	-	V	$V_{GS}=0, I_D=-250\mu\text{A}$	
Gate-Threshold Voltage	$V_{GS(th)}$	-2	-	-4	V	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	
Forward Transfer conductance	g_{fs}	-	2.5	-	S	$V_{DS}=-10\text{V}, I_D=-1.4\text{A}$	
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 20\text{V}$	
Drain-Source Leakage Current	I_{DSS}	$T_J=25^\circ\text{C}$	-	-	-1	uA	$V_{DS}=-120\text{V}, V_{GS}=0$
		$T_J=125^\circ\text{C}$	-	-	-10		$V_{DS}=-120\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance ⁴	$R_{DS(ON)}$	-	-	780	m Ω	$V_{GS}=-10\text{V}, I_D=-1.4\text{A}$	
Total Gate Charge	Q_g	-	6	-	nC	$I_D=-1\text{A}$ $V_{DS}=-75\text{V}$ $V_{GS}=-10\text{V}$	
Gate-Source Charge	Q_{gs}	-	2	-			
Gate-Drain ("Miller") Change	Q_{gd}	-	1.4	-			
Turn-on Delay Time ²	$T_{d(on)}$	-	8	-	nS	$V_{DD}=-75\text{V}$ $I_D=-1\text{A}$ $V_{GS}=-10\text{V}$ $R_G=1\Omega$	
Rise Time	T_r	-	6	-			
Turn-off Delay Time	$T_{d(off)}$	-	20	-			
Fall Time	T_f	-	4	-			
Input Capacitance	C_{iss}	-	498	-	pF	$V_{GS}=0$ $V_{DS}=-15\text{V}$ $f=1\text{MHz}$	
Output Capacitance	C_{oss}	-	40	-			
Reverse Transfer Capacitance	C_{rss}	-	17	-			
Source-Drain Diode							
Continuous Source Current ¹	I_S	-	-	-1.4	A		
Pulsed Source Current ³	I_{SM}	-	-	-10.4	A		
Diode Forward Voltage ⁴	V_{SD}	-	-	-1.2	V	$I_S=-1\text{A}, V_{GS}=0, T_J=25^\circ\text{C}$	
Reverse Recovery Time	T_{rr}	-	60	-	nS	$I_F=-1\text{A}, dI/dt=100\text{A}/\mu\text{s},$ $T_J=25^\circ\text{C}$	
Reverse Recovery Charge	Q_{rr}	-	120	-	nC		

Notes:

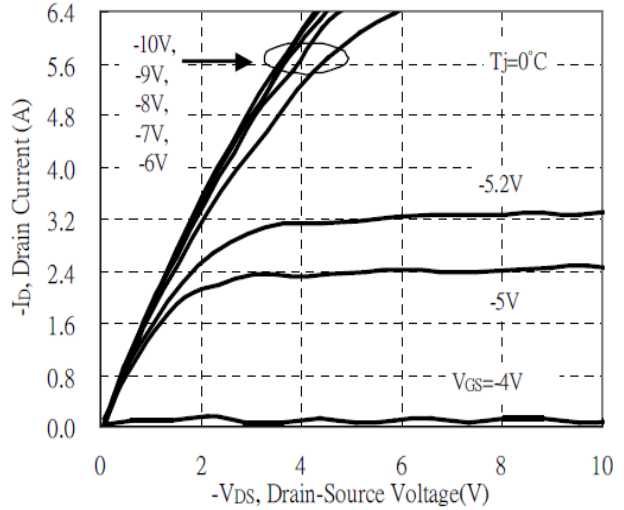
1. Surface mounted on a 1 inch² FR-4 board with 2oz copper.
2. When mounted on minimum pad of 2 oz. copper.
3. The power dissipation is limited by 150 $^\circ\text{C}$ junction temperature.
4. The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

CHARACTERISTIC CURVES

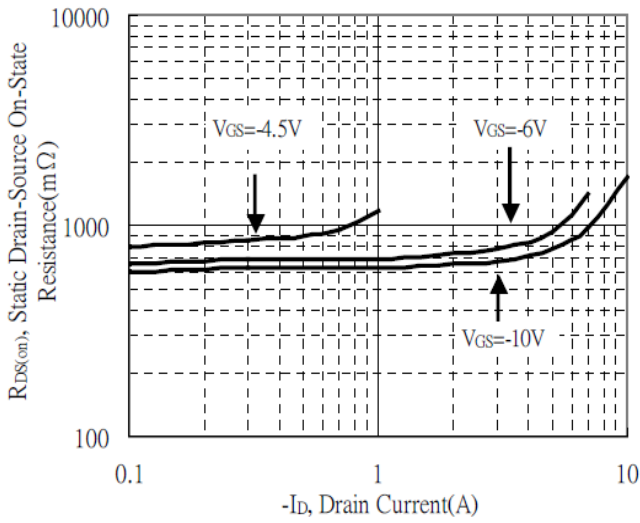
Typical Output Characteristics



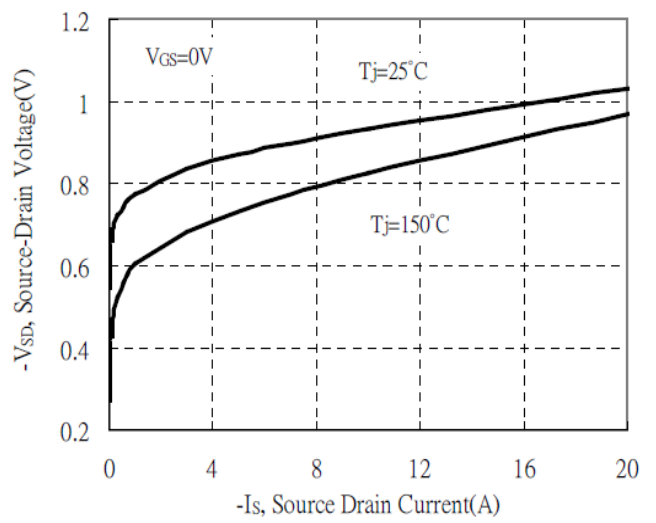
Typical Output Characteristics



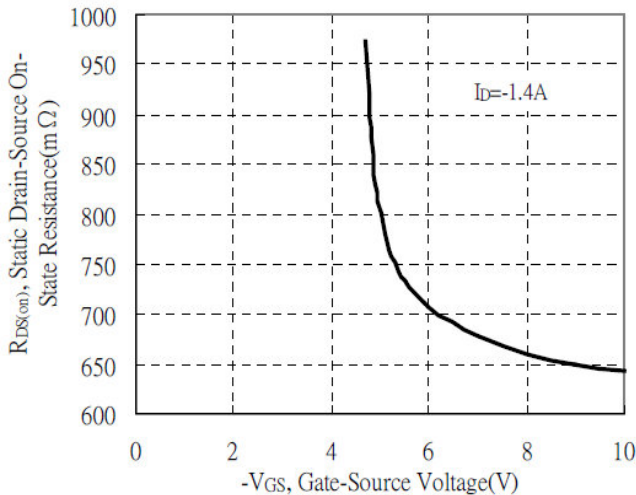
Static Drain-Source On-State resistance vs Drain Current



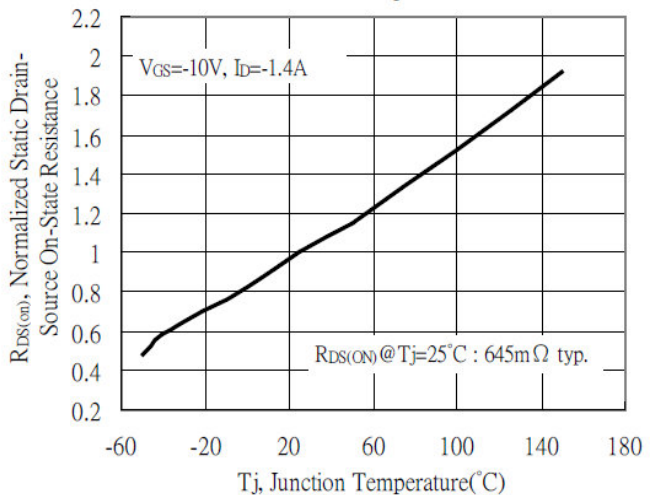
Source Drain Current vs Source-Drain Voltage



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



Normalized Drain-Source On-State Resistance vs Junction Temperature



CHARACTERISTIC CURVES

