

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

DESCRIPTION

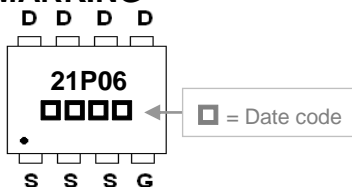
The SSPR21P06-C is the highest performance trench P-ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSPR21P06-C meet the RoHS and Green Product requirement with full function reliability approved.

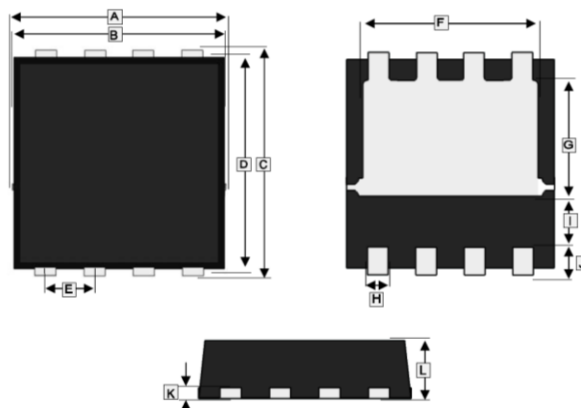
FEATURES

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

MARKING



SPR-8PP



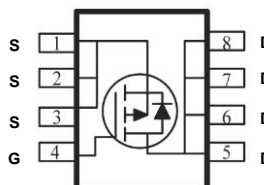
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	3.00	3.40	G	1.35	1.98
B	3.00	3.25	H	0.24	0.35
C	3.20	3.45	I	0.35 TYP.	
D	3.00	3.20	J	0.60 TYP.	
E	0.65 BSC.		K	0.10	0.25
F	2.39	2.60	L	0.70	0.90

PACKAGE INFORMATION

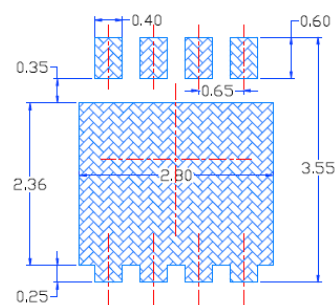
Package	MPQ	Leader Size
SPR-8PP	3K	13 inch

ORDER INFORMATION

Part Number	Type
SSPR21P06-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



MAXIMUM RATINGS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	-60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ¹ @ V _{GS} =10V	T _C =25°C	-21	A
	T _C =100°C	-13	
Pulsed Drain Current ²	I _{DM}	-60	A
Total Power Dissipation ¹	P _D	29	W
Operating Junction & Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance Ratings			
Thermal Resistance Junction-Ambient ¹ (Max.)	R _{θJA}	75	°C/W
Thermal Resistance Junction-Ambient ¹		110	
Thermal Resistance Junction-Case (Max.)		R _{θJC}	

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

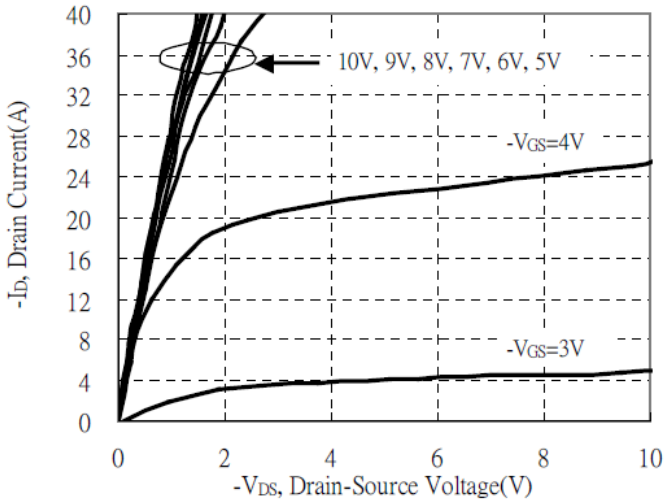
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Drain-Source Breakdown Voltage	BV_{DSS}	-60	-	-	V	$V_{GS}=0V, I_D = -250\mu A$	
Gate Threshold Voltage	$V_{GS(th)}$	-1	-	-2.5	V	$V_{DS}=V_{GS}, I_D = -250\mu A$	
Gate-Body Leakage	I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 20V$	
Drain-Source Leakage Current	I_{DSS}	$T_J=25^\circ\text{C}$	-	-	-1	μA	$V_{DS} = -48V, V_{GS}=0V$
		$T_J=125^\circ\text{C}$	-	-	-25		$V_{DS} = -48V, V_{GS}=0V$
Drain-Source On-Resistance ³	$R_{DS(ON)}$	-	33	40	m Ω	$V_{GS} = -10V, I_D = -10A$	
		-	45	50		$V_{GS} = -4.5V, I_D = -10A$	
Forward Transconductance	g_{fs}	-	13	-	S	$V_{DS} = -5V, I_D = -6A$	
Total Gate Charge	Q_g	-	38.7	-	nC	$I_D = -7A$ $V_{DS} = -30V$ $V_{GS} = -10V$	
Gate-Source Charge	Q_{gs}	-	8.6	-			
Gate-Drain Charge	Q_{gd}	-	9	-			
Turn-On Delay Time	$T_{d(on)}$	-	9.7	-	nS	$V_{DD} = -30V$ $I_D = -7A$ $V_{GS} = -10V$ $R_G = 3\Omega$ $R_L = 4.3\Omega$	
Rise Time	T_r	-	6.2	-			
Turn-Off Delay Time	$T_{d(off)}$	-	34	-			
Fall Time	T_f	-	14.3	-			
Input Capacitance	C_{iss}	-	1910	-	pF	$V_{DS} = -30V$ $V_{GS} = 0V$ $f = 1MHz$	
Output Capacitance	C_{oss}	-	98.3	-			
Reverse Transfer Capacitance	C_{rss}	-	62.8	-			
Source-Drain Diode							
Continuous Source Current ¹	I_S	-	-	-21	A		
Pulsed Source Current ²	I_{SM}	-	-	-60	A		
Diode Forward Voltage ³	V_{SD}	-	-	-1.2	V	$V_{GS}=0V, I_S = -1A$	
Reverse Recovery Time	t_{rr}	-	32	-	nS	$I_F = -6A, dI/dt = 100A/\mu s,$ $T_J = 25^\circ\text{C}$	
Reverse Recovery Charge	Q_{rr}	-	44	-	nC		

Notes:

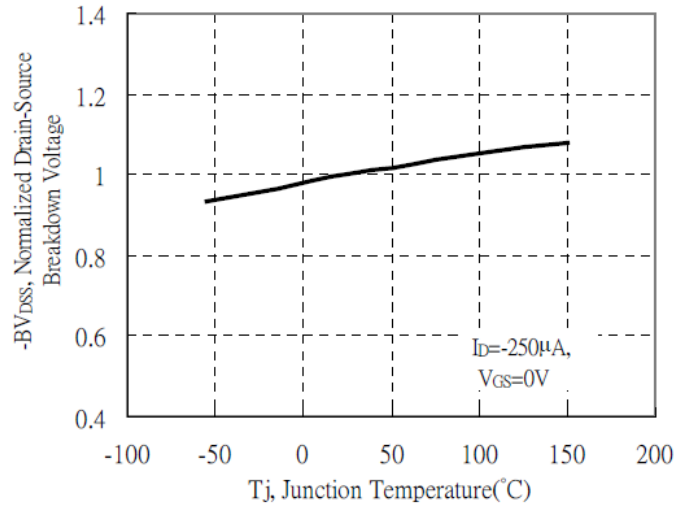
- The data tested by surface mounted on a 1 inch² FR-4 board with 2oz copper.
- The power dissipation is limited by 150°C junction temperature.
- The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

CHARACTERISTIC CURVES

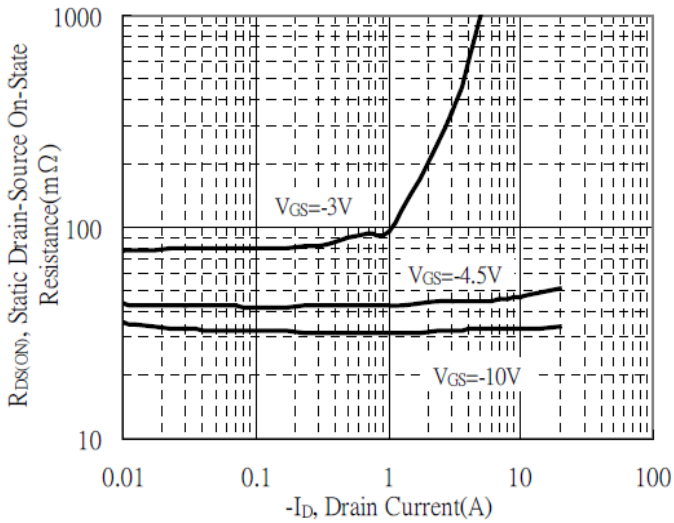
Typical Output Characteristics



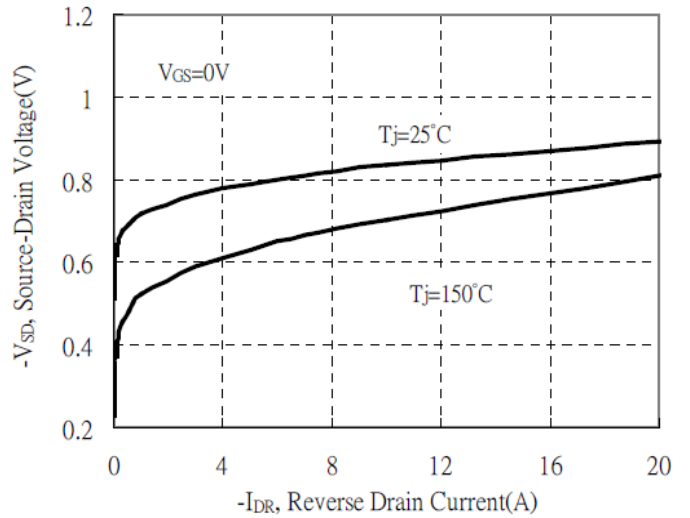
Brekdown Voltage vs Temperature



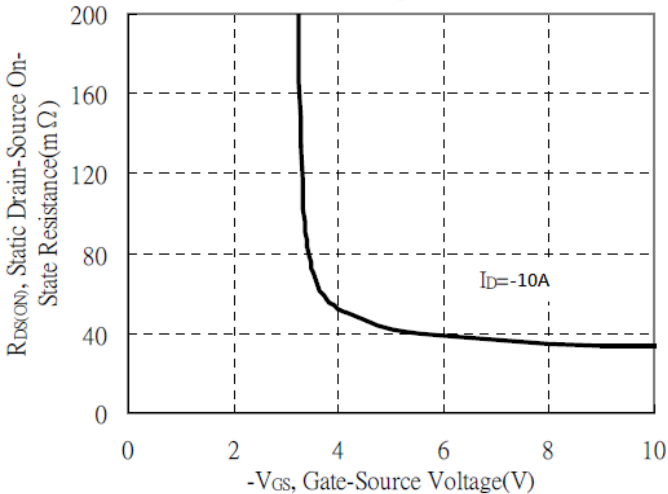
Static Drain-Source On-State resistance vs Drain Current



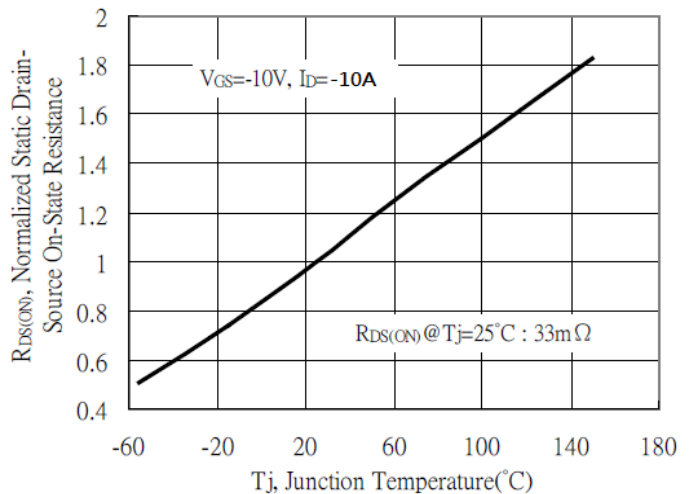
Reverse Drain Current vs Source-Drain Voltage



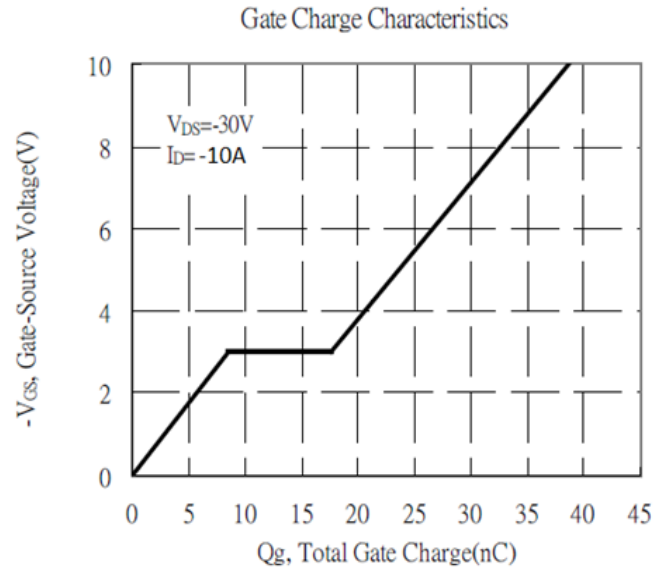
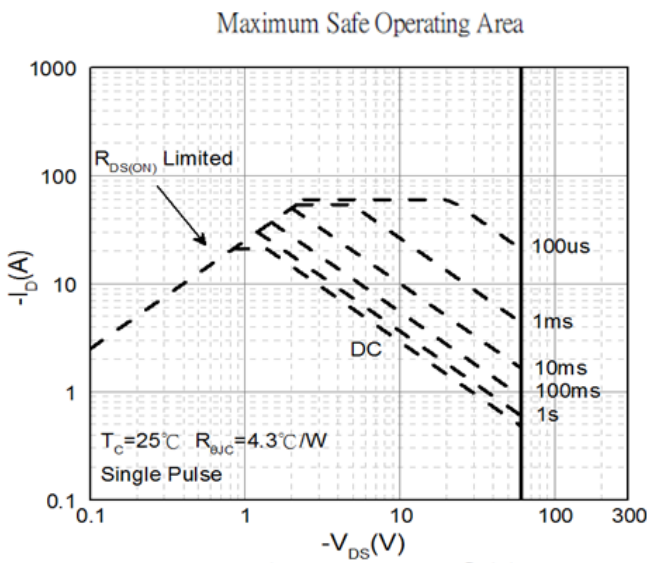
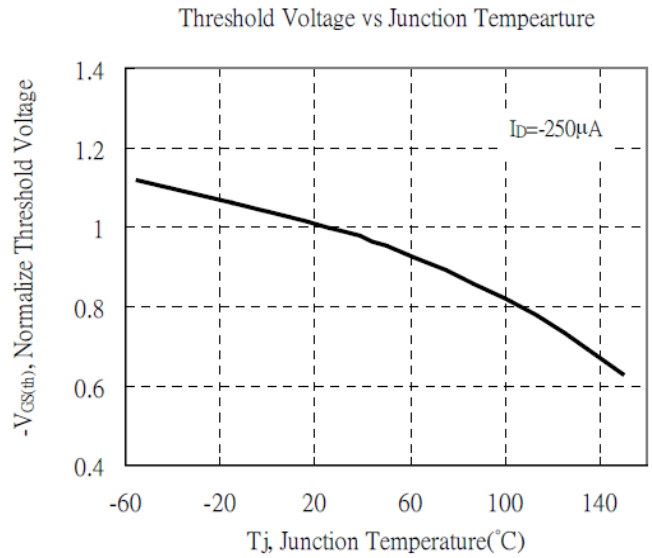
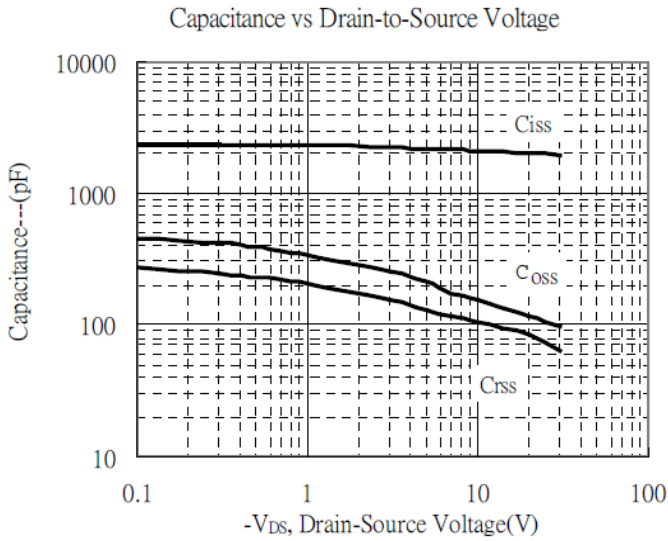
Static Drain-Source On-State Resistance vs Gate-Source Voltage



Drain-Source On-State Resistance vs Junction Temperature



CHARACTERISTIC CURVES



Transient Thermal Response Curves

