

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

DESCRIPTION

The SSPRDJ4411-C is the highest performance trench Dual 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 SSPRDJ4411-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

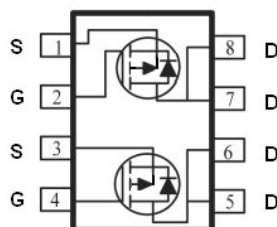


PACKAGE INFORMATION

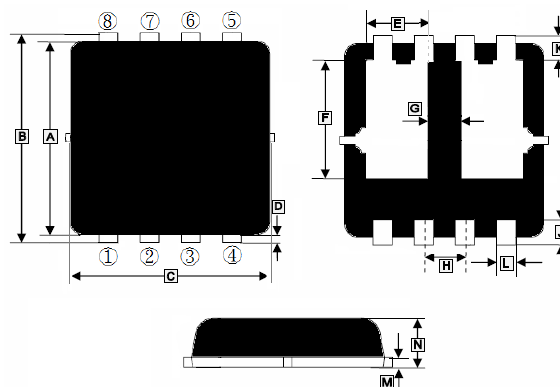
Package	MPQ	Leader Size
DFN3x3-8DJ	5K	13 inch

ORDER INFORMATION

Part Number	Type
SSPRDJ4411-C	Lead (Pb)-free and Halogen-free

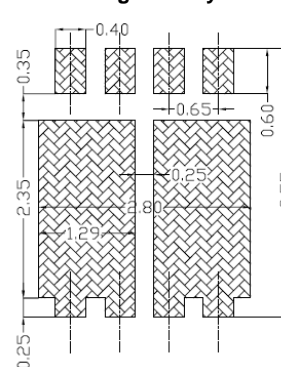


DFN3x3-8DJ



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.9	3.1	H	0.55	0.75
B	3.15	3.45	J	0.3	0.5
C	2.9	3.1	K	0.315	0.515
D	0.15 BSC		L	0.2	0.4
E	0.935	1.135	M	0.152 REF.	
F	1.535	1.935	N	0.65	0.85
G	0.28	0.48			

Mounting Pad Layout



*Dimensions in millimeters

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 @ $V_{GS} = -10V$	I_D	$T_C = 25^\circ C$	-16
		$T_C = 100^\circ C$	-11
Pulsed Drain Current ³	I_{DM}	-40	A
Total Power Dissipation	P_D	16.67	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$
Thermal Data			
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	75	$^\circ C/W$
Thermal Resistance Junction-Ambient ²		135	
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	7.5	

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}	-30	-	-	V	$V_{GS}=0, I_D = -250\mu\text{A}$	
Gate Threshold Voltage	$V_{GS(th)}$	-1	-	-3	V	$V_{DS}=V_{GS}, I_D = -250\mu\text{A}$	
Forward Transconductance	g_{fs}	-	13	-	S	$V_{DS} = -5\text{V}, I_D = -6\text{A}$	
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	μA	$V_{DS} = -24\text{V}, V_{GS}=0$
		$T_J=55^\circ\text{C}$	-	-	-5		
Static Drain-Source On-Resistance ⁴	$R_{DS(ON)}$	-	-	32	m Ω	$V_{GS} = -10\text{V}, I_D = -6\text{A}$	
		-	-	50		$V_{GS} = -4.5\text{V}, I_D = -4\text{A}$	
Total Gate Charge	Q_g	-	9.8	-	nC	$I_D = -6\text{A}$ $V_{DS} = -20\text{V}$ $V_{GS} = -4.5\text{V}$	
Gate-Source Charge	Q_{gs}	-	2.2	-			
Gate-Drain Change	Q_{gd}	-	3.4	-			
Turn-on Delay Time	$T_{d(on)}$	-	16.4	-	nS	$V_{DS} = -24\text{V}$ $I_D = -1\text{A}$ $V_{GS} = -10\text{V}$ $R_G = 3.3\Omega$	
Rise Time	T_r	-	20.2	-			
Turn-off Delay Time	$T_{d(off)}$	-	55	-			
Fall Time	T_f	-	10	-			
Input Capacitance	C_{iss}	-	930	-	pF	$V_{GS}=0$ $V_{DS} = -15\text{V}$ $f=1\text{MHz}$	
Output Capacitance	C_{oss}	-	148	-			
Reverse Transfer Capacitance	C_{rss}	-	115	-			
Source-Drain Diode							
Continuous Source Current ¹	I_S	-	-	-16	A		
Pulsed Source Current ³	I_{SM}	-	-	-40			
Diode Forward Voltage ⁴	V_{SD}	-	-	-1.2	V	$V_{GS}=0, I_S = -1\text{A}, T_J=25^\circ\text{C}$	

Notes:

1. Surface mounted on a 1 inch² FR-4 board with 2oz copper.
2. When mounted on Min. copper pad.
3. Pulse width limited by maximum junction temperature, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
4. The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTIC

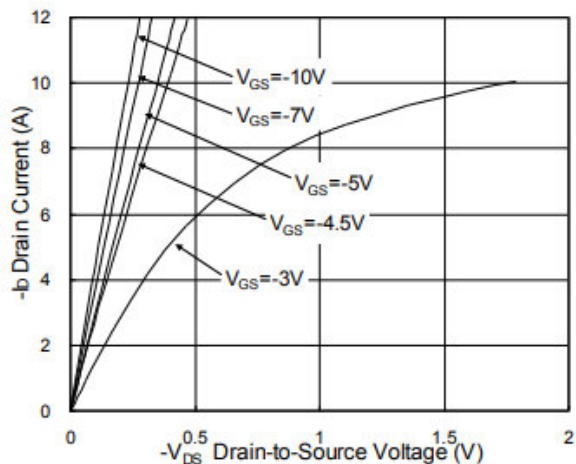


Fig.1 Typical Output Characteristics

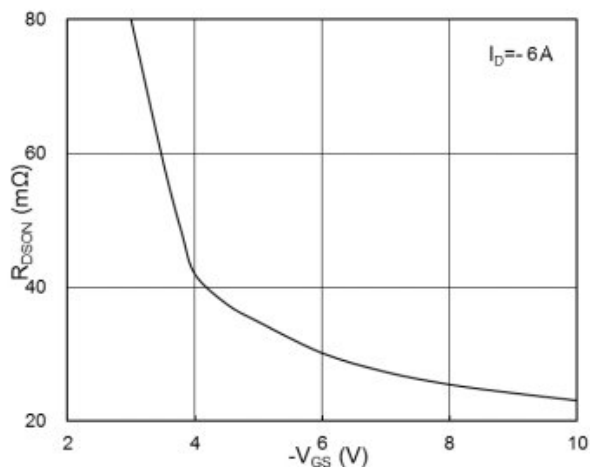


Fig.2 On-Resistance vs G-S Voltage

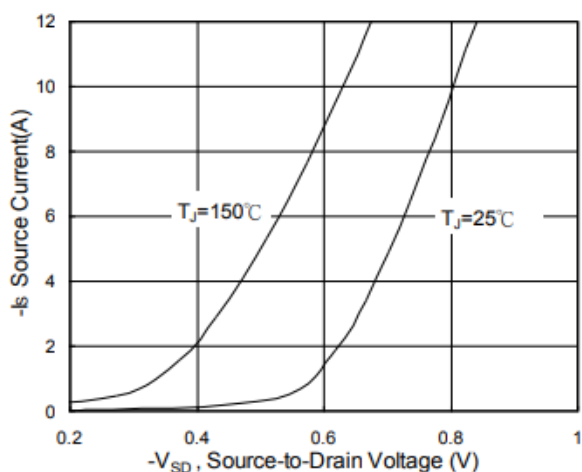


Fig.3 Source Drain Forward Characteristics

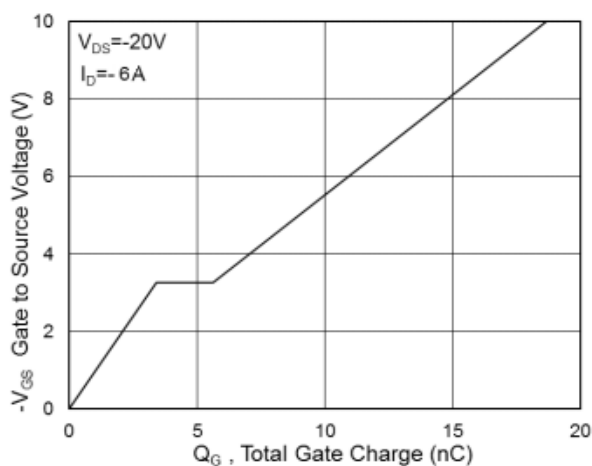


Fig.4 Gate-Charge Characteristics

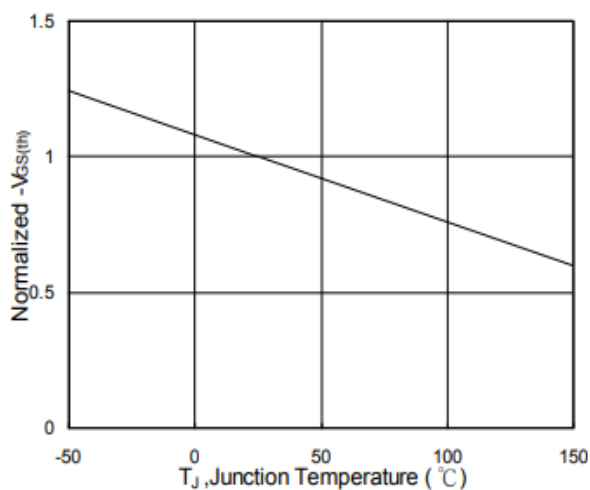


Fig.5 Normalized $V_{GS(th)}$ vs T_J

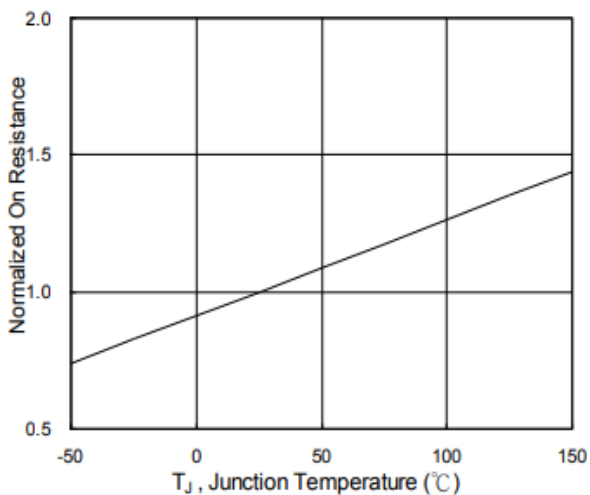


Fig.6 Normalized $R_{DS(ON)}$ vs T_J

TYPICAL CHARACTERISTIC

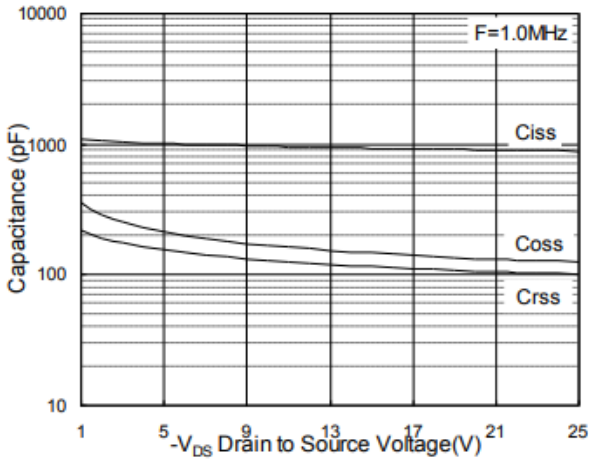


Fig.7 Capacitance

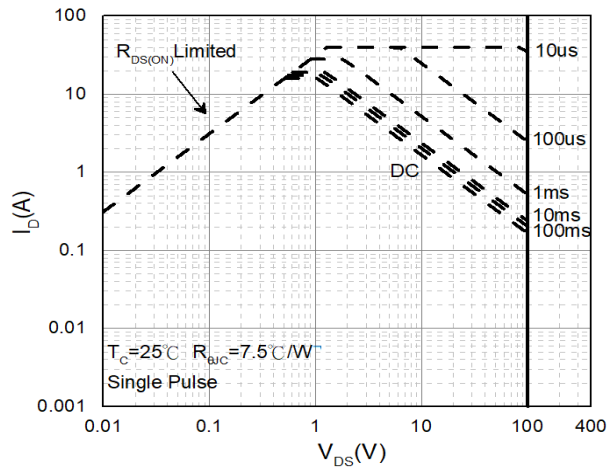


Fig.8 Safe Operating Area

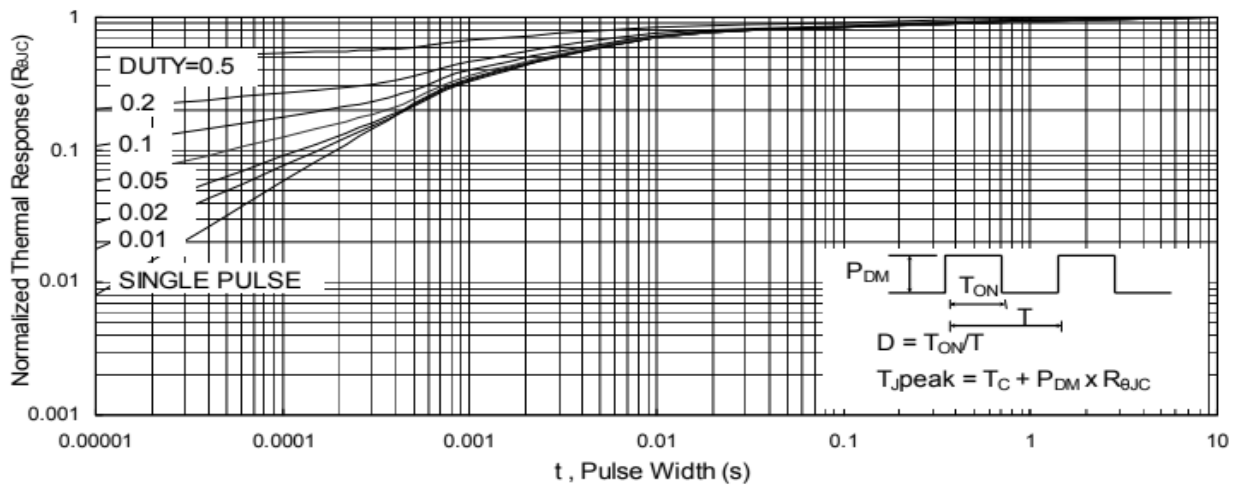


Fig.9 Normalized Maximum Transient Thermal Impedance

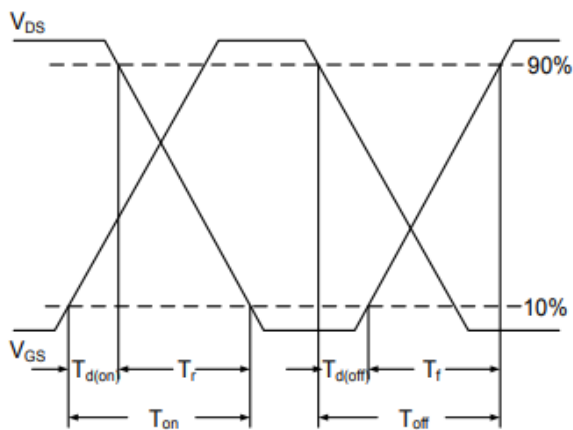


Fig.10 Switching Time Waveform

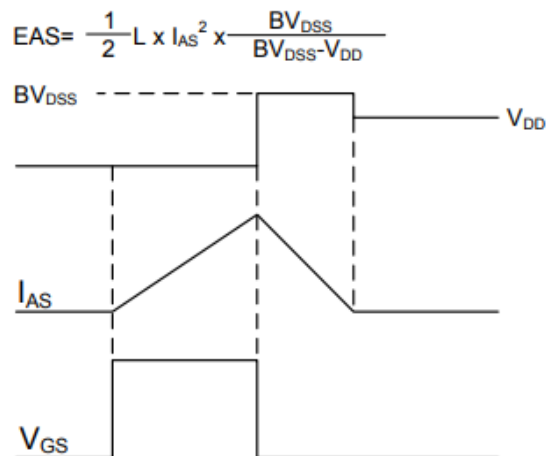


Fig.11 Unclamped Inductive Waveform