Elektronische Bauelemente

SSPRDJ4228-C

25A, 30V, $R_{DS(ON)}$ 17mΩ

Dual N-Ch Enhancement Mode Power MOSFET

RoHS Compliant Product

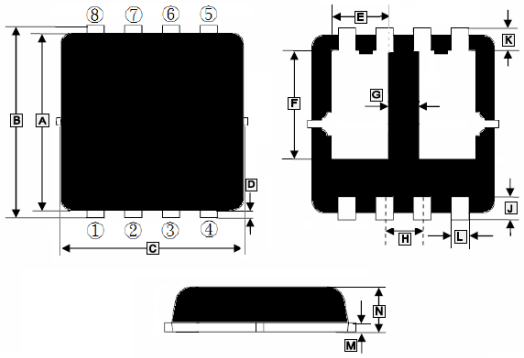
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSPRDJ4228-C is the highest performance trench Dual 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 SSPRDJ4228-C meet the RoHS and Green Product requirement with full function reliability approved.

DFN3x3-8DJ

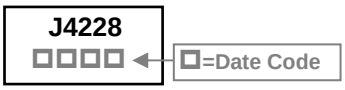


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.9	3.1	H	0.55	0.75
B	3.15	3.45	J	0.3	0.5
C	2.9	3.1	K	0.315	0.515
D	0.15 BSC		L	0.2	0.4
E	0.935	1.135	M	0.152 REF.	
F	1.535	1.935	N	0.65	0.85
G	0.28	0.48			

FEATURES

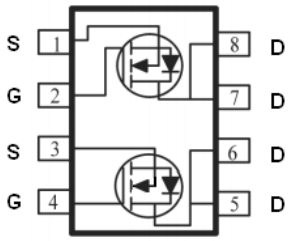
- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING



PACKAGE INFORMATION

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



ORDER INFORMATION

Part Number	Type
SSPRDJ4228-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℃	I_D	25	A
	T_C=100℃		16	
	T_A=25℃		8.4	
	T_A=70℃		6.7	
Pulsed Drain Current [2]		I_{DM}	50	A
Total Power Dissipation	T_C=25℃	P_D	16.67	W
	T_A=25℃		1.6	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Data				
Thermal Resistance Junction-Ambient [1] Max		$R_{\theta JA}$	75	℃/W
Thermal Resistance Junction-Case [1] Max		$R_{\theta JC}$	7.5	

ELECTRICAL CHARACTERISTICS (T_J=25℃ 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=10A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0
	T_J=55℃		-	-	5		
Static Drain-Source On-Resistance [3]		$R_{DS(ON)}$	-	-	17	mΩ	V_{GS}=10V, I_D=10A
			-	-	26		V_{GS}=4.5V, I_D=5A
Gate Resistance		R_g	-	3.5	-	Ω	f=1MHz
Total Gate Charge		Q_g	-	7.2	-	nC	I_D=10A V_{DS}=20V V_{GS}=4.5V
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}=12V 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	-	-	7.4	A	
Pulsed Source Current [2]		I_{SM}	-	-	15		
Diode Forward Voltage [3]		V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=1A, T_J=25℃
Reverse Recovery Time		t_{rr}	-	20	-	nS	I_F=7A, dI/dt=100A/μs, T_J=25℃
Reverse Recovery Charge		Q_{rr}	-	1.1	-	nC	

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

TYPICAL CHARACTERISTIC

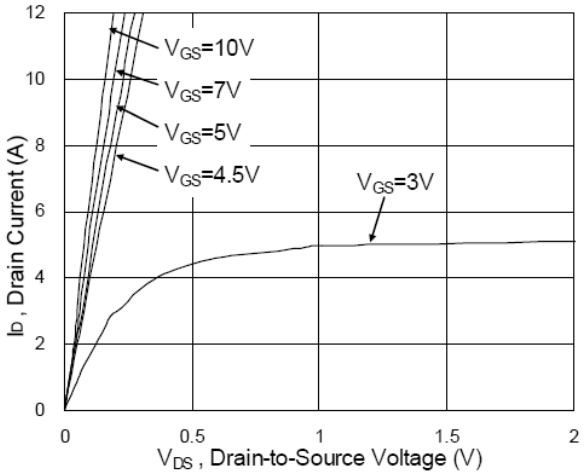


Fig.1 Typical Output Characteristics

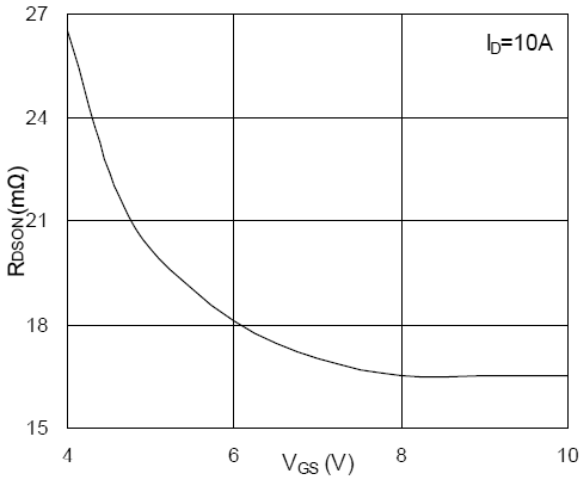


Fig.2 On-Resistance vs. Gate-Source

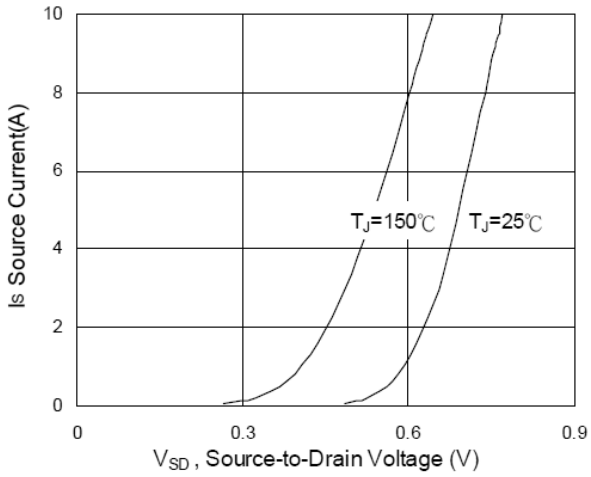


Fig.3 Forward Characteristics Of Reverse

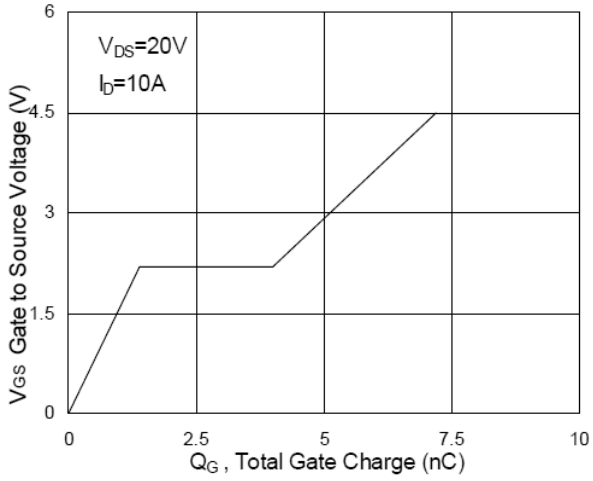


Fig.4 Gate-Charge Characteristics

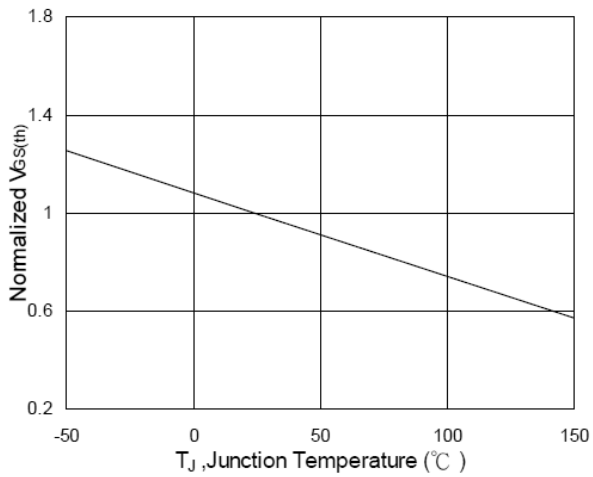


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

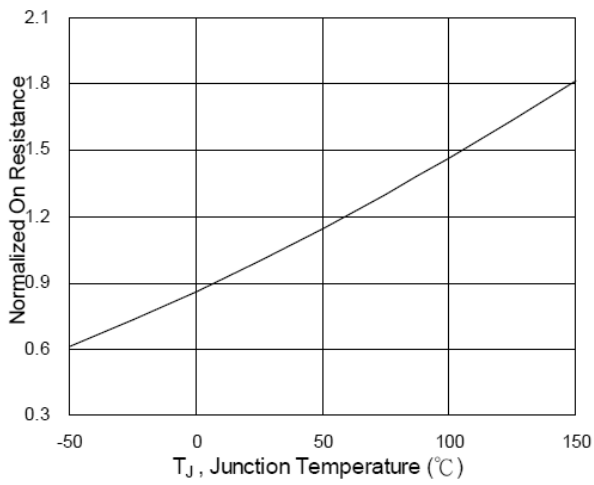


Fig.6 Normalized R_{DSON} vs. T_J

TYPICAL CHARACTERISTIC

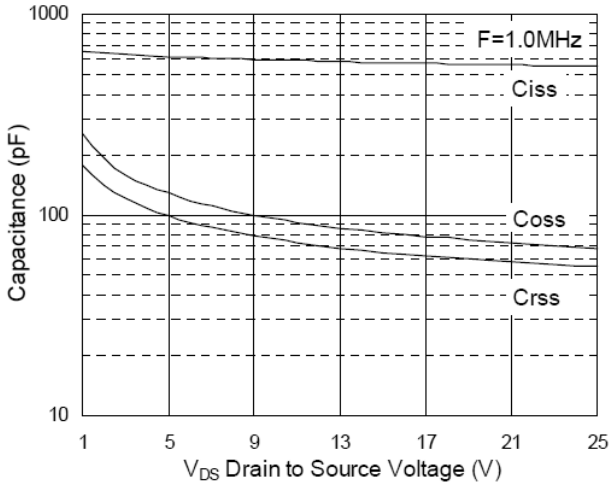


Fig.7 Capacitance

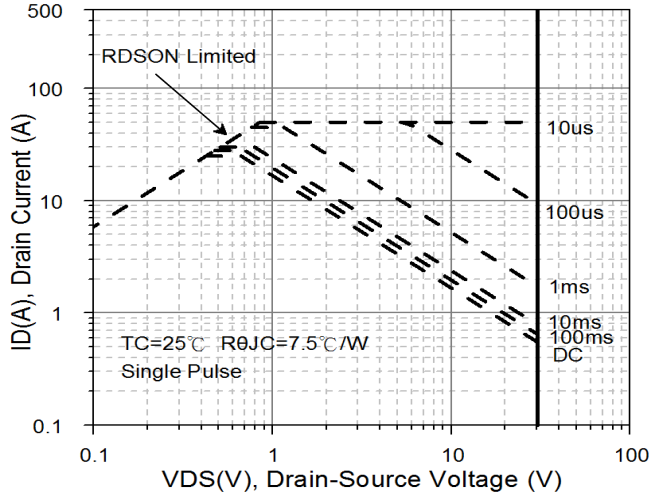


Fig.8 Safe Operating Area

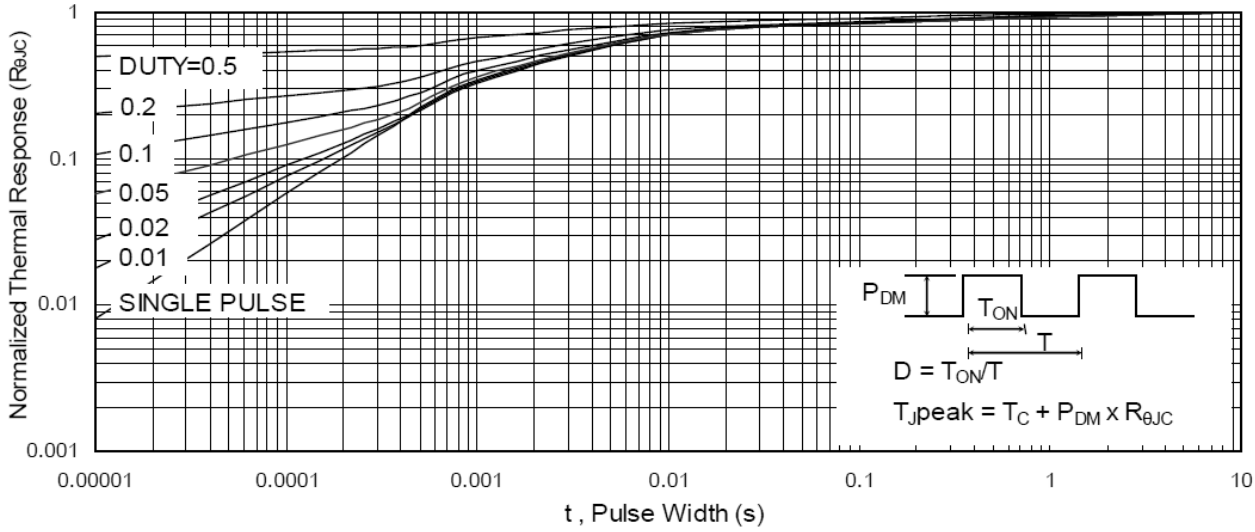


Fig.9 Normalized Maximum Transient Thermal Impedance

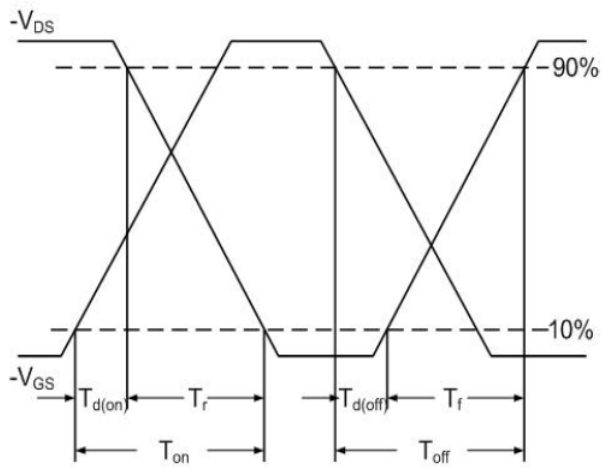


Fig.10 Switching Time Waveform

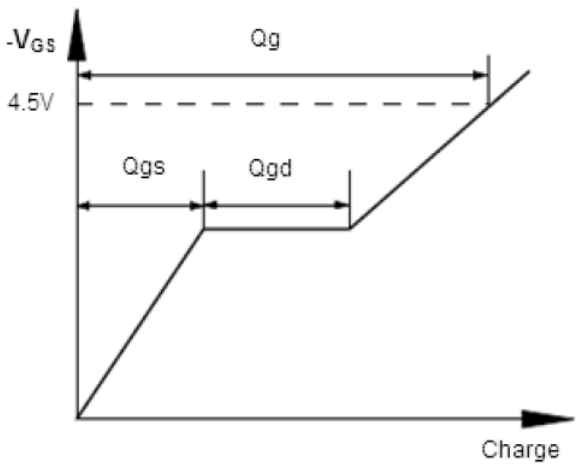


Fig.11 Gate Charge Waveform