Elektronische Bauelemente

SSPRDJ11P02-C

-11A, -20V, $R_{DS(ON)}$ 24mΩ

Dual P-Ch Enhancement Mode Power MOSFET

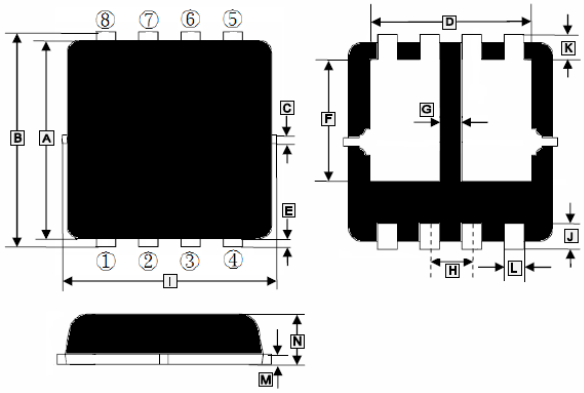
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSPRDJ11P02-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 SSPRDJ11P02-C meet the RoHS and Green Product requirement with full function reliability approved.

DFN3x3-8DJ



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	3	3.2	H	0.65 BSC	
B	3.25	3.45	I	3.2	3.4
C	0.13 BSC.		J	0.3	0.5
D	2.39	2.59	K	0.3	0.5
E	0.13 BSC		L	0.25	0.35
F	1.78	1.98	M	0.1	0.25
G	0.3 BSC		N	0.7	0.8

FEATURES

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

MARKING

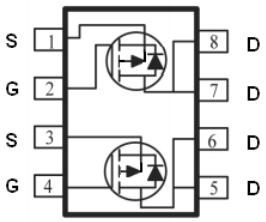
J11P02
□□□□ ← □=Date Code

PACKAGE INFORMATION

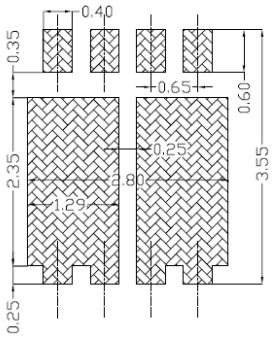
Package	MPQ	Leader Size
DFN3x3-8DJ	3K	13 inch

ORDER INFORMATION

Part Number	Type
SSPRDJ11P02-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1], @V_{GS}= -4.5V	T_C=25°C	I_D	-11	A
	T_C=100°C		-7	
	T_A=25°C		-6.5	
	T_A=70°C		-5.2	
Pulsed Drain Current [2]		I_{DM}	-40	A
Total Power Dissipation	T_C=25°C	P_D	5	W
	T_A =25°C		1.67	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Data				
Thermal Resistance Junction-Ambient [1] Max		$R_{\theta JA}$	75	°C/W
Thermal Resistance Junction-Case [1] Max		$R_{\theta JC}$	25	

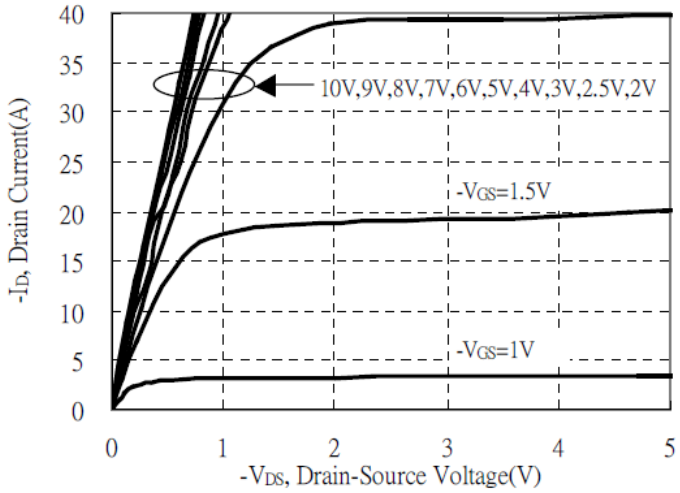
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	-20	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage		$V_{GS(th)}$	-0.3	-	-1	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transconductance		g_{fs}	-	19.1	-	S	V_{DS}= -5V, I_D= -4.8A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±12V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	-1	μA	V_{DS}= -16V, V_{GS}=0
	T_J=55°C		-	-	-5		
Static Drain-Source On-Resistance [3]		$R_{DS(ON)}$	-	-	24	mΩ	V_{GS}= -4.5V, I_D= -6.5A
			-	-	26		V_{GS}= -2.5V, I_D= -4.2A
			-	-	40		V_{GS}= -1.8V, I_D= -3.5A
Total Gate Charge		Q_g	-	28	-	nC	I_D= -10A V_{DS}= -16V V_{GS}= -4.5V
Gate-Source Charge		Q_{gs}	-	6.6	-		
Gate-Drain Change		Q_{gd}	-	11	-		
Turn-on Delay Time		$T_{d(on)}$	-	16	-	nS	V_{DD}= -10V I_D= -2A V_{GS}= -4.5V R_G=3.3Ω
Rise Time		T_r	-	48	-		
Turn-off Delay Time		$T_{d(off)}$	-	80	-		
Fall Time		T_f	-	36	-		
Input Capacitance		C_{iss}	-	2754	-	pF	V_{GS}=0 V_{DS}= -10V f=1MHz
Output Capacitance		C_{oss}	-	264	-		
Reverse Transfer Capacitance		C_{rss}	-	223	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	-11	A	
Pulsed Source Current [2]		I_{SM}	-	-	-40		
Diode Forward Voltage [3]		V_{SD}	-	-	-1.2	V	V_{GS}=0, I_S= -2.5A, T_J=25°C
Reverse Recovery Time		t_{rr}	-	45	-	nS	I_F= -10A, dI/dt=100A/μs, T_J=25°C
Reverse Recovery Charge		Q_{rr}	-	60	-	nC	

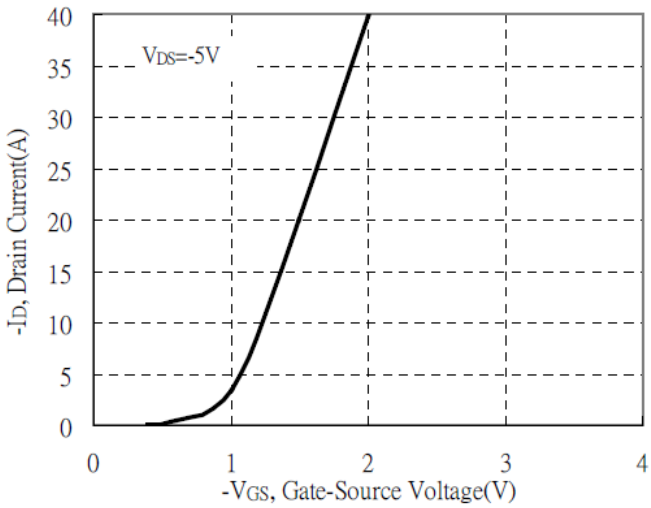
Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. Pulse width limited by maximum junction temperature, pulse width≦300μs, duty cycle≦1%.
3. The data tested by pulsed, pulse width≦300μs, duty cycle≦2%.

TYPICAL CHARACTERISTIC

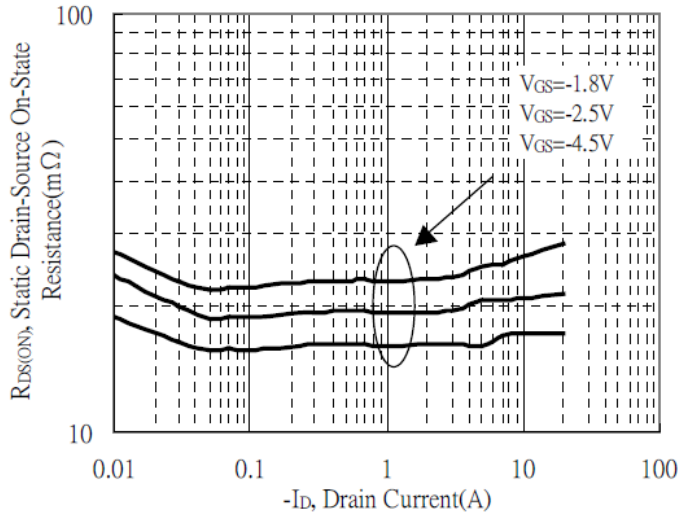
Typical Output Characteristics



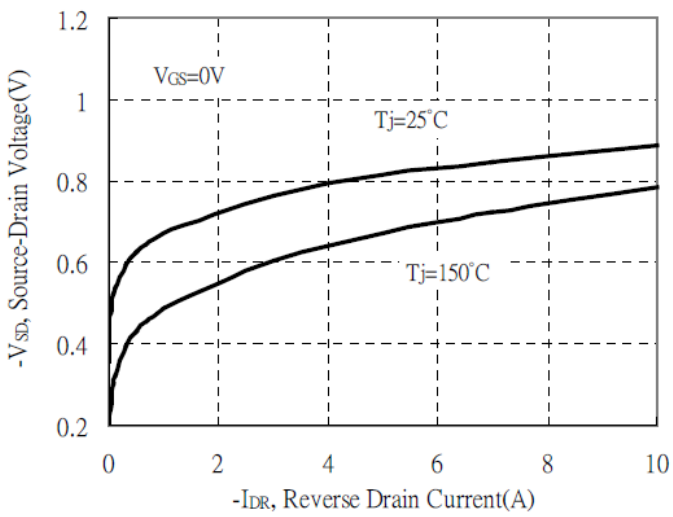
Typical Transfer Characteristics



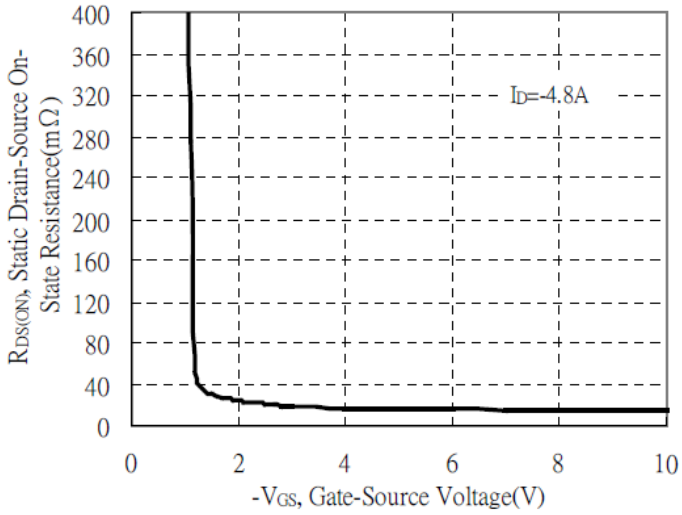
Static Drain-Source On-State resistance vs Drain Current



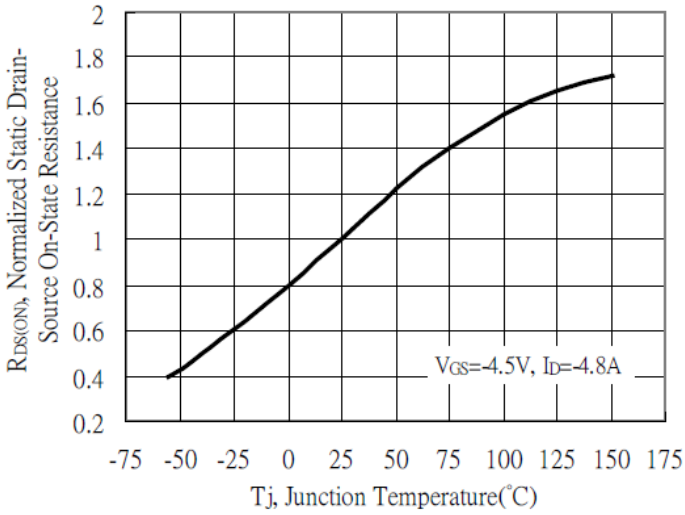
Reverse Drain Current vs Source-Drain Voltage



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

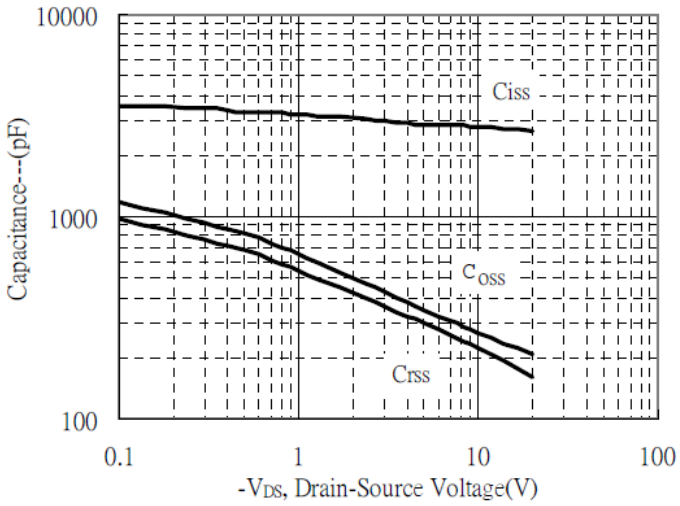


Drain-Source On-State Resistance vs Junction Tempearture

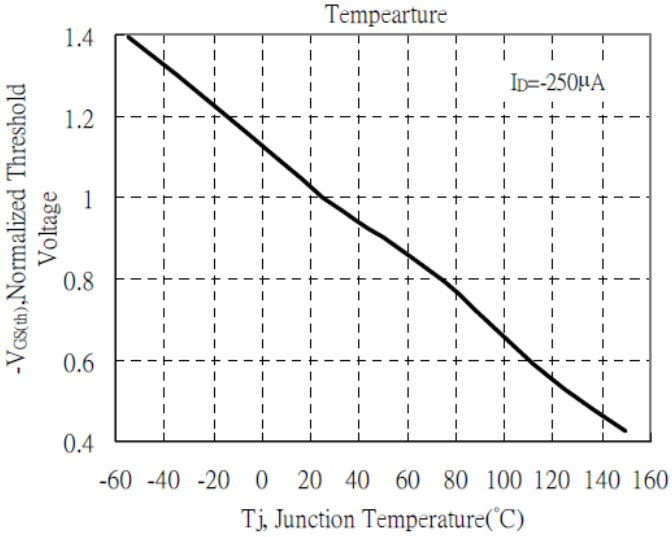


TYPICAL CHARACTERISTIC

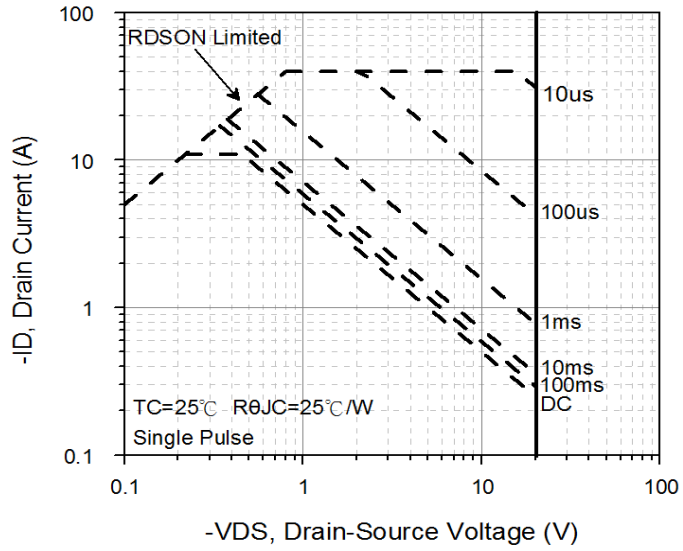
Capacitance vs Drain-to-Source Voltage



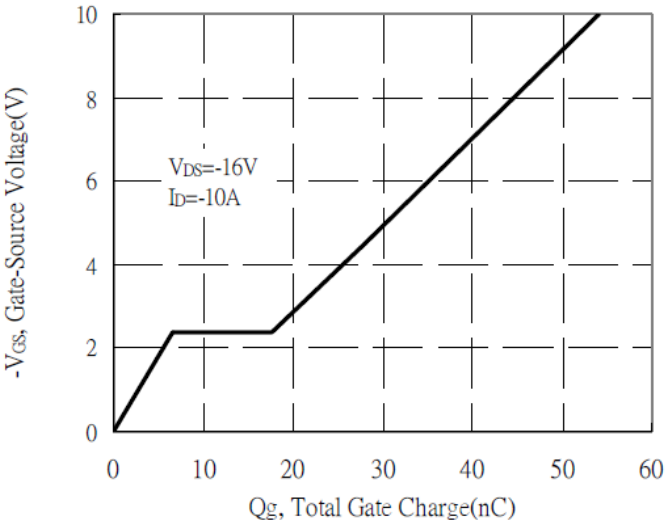
Normalized Threshold Voltage vs Junction Tempearture



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves