

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

DESCRIPTION

SSG3110 is the highest performance trench dual N-ch MOSFETs with extreme high cell density, which provides excellent $R_{DS(ON)}$ and gate charge for most synchronous buck converter applications.

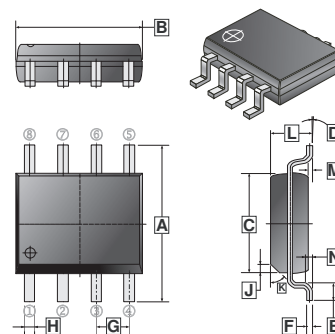
FEATURES

- Advanced high cell density Trench technology
- Super low gate charge
- Excellent CdV/dt effect decline
- Green Device Available

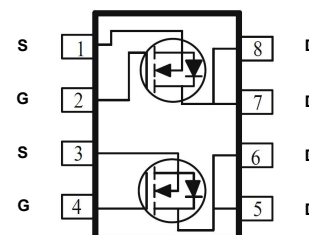
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

SOP-8



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.33	0.51
B	4.70	5.10	J	0.375 REF.	
C	3.80	4.00	K	45° REF.	
D	0°	8°	L	1.35	1.75
E	0.40	1.27	M	0.10	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current @ $V_{GS}=10V$ ¹	$T_A=25^\circ C$	2.2	A
	$T_A=70^\circ C$	1.5	
Pulsed Drain Current ³	I_{DM}	5.5	A
Power Dissipation @ $T_A=25^\circ C$	P_D	1.5	W
Maximum Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	83	$^\circ C / W$
Maximum Thermal Resistance from Junction to Ambient		135	
Maximum Thermal Resistance from Junction to Case ¹	$R_{\theta JC}$	50	$^\circ C / W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	BV _{DSS}	100	-	-	V	V _{GS} =0, I _D =250μA
Gate-Threshold Voltage	V _{GS(th)}	1	-	2.5	V	V _{DS} =V _{GS} , I _D =250μA
Gate-Body Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±20V
Zero Gate Voltage Drain Current	I _{DSS}	-	-	1	μA	V _{DS} =80V, V _{GS} =0, T _J =25°C
		-	-	5		V _{DS} =80V, V _{GS} =0, T _J =55°C
Drain-Source On-Resistance ²	R _{DS(ON)}	-	260	310	mΩ	V _{GS} =10V, I _D =2A
		-	270	320		V _{GS} =4.5V, I _D =1A
Forward Transconductance	g _{fs}	-	4	-	S	V _{DS} =5V, I _D =2A
Input Capacitance	C _{iss}	-	508	-	pF	V _{DS} =15V V _{GS} =0 f=1MHz
Output Capacitance	C _{oss}	-	29	-		
Reverse Transfer Capacitance	C _{rss}	-	16.4	-		
Total Gate Charge	Q _g	-	9.1	-	nC	V _{DS} =50V, V _{GS} =10V I _D =2A
Gate-Source Charge	Q _{gs}	-	2	-		
Gate-Drain Charge	Q _{gd}	-	1.4	-		
Turn-On Delay Time	T _{d(on)}	-	2	-	nS	V _{DD} =50V V _{GS} =10V I _D =2A R _L =30Ω R _G =3.3Ω
Rise Time	T _r	-	21.6	-		
Turn-Off Delay Time	T _{d(off)}	-	11.2	-		
Fall Time	T _f	-	18.8	-		
Source-Drain Diode						
Diode Forward Voltage ²	V _{SD}	-	-	1.2	V	I _S =1A, V _{GS} =0
Continuous Source Current ¹	I _S	-	-	2.2	A	V _D =V _G =0V, Force Current
Pulsed Source Current ³	I _{SM}	-	-	5.5	A	
Reverse Recovery Time	T _{rr}	-	17.5	-	nS	I _F =2A, dI/dt=100A/μs, T _J =25°C
Reverse Recovery Charge	Q _{rr}	-	14	-	nC	

Notes:

1. Surface mounted on a 1 inch² FR-4 board with 20Z copper pad.
2. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. The power dissipation is limited by 150°C junction temperature.

CHARACTERISTICS CURVE

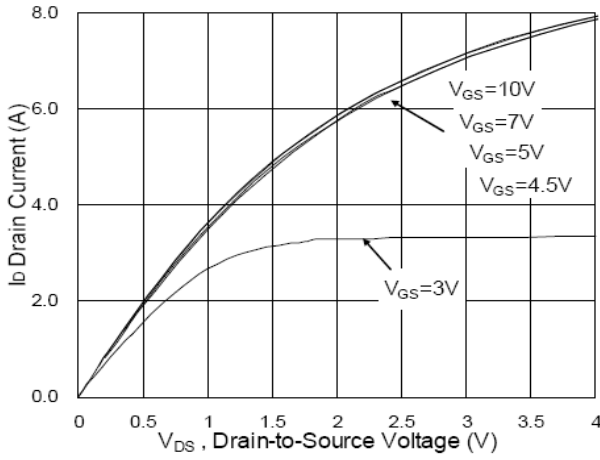


Fig.1 Typical Output Characteristics

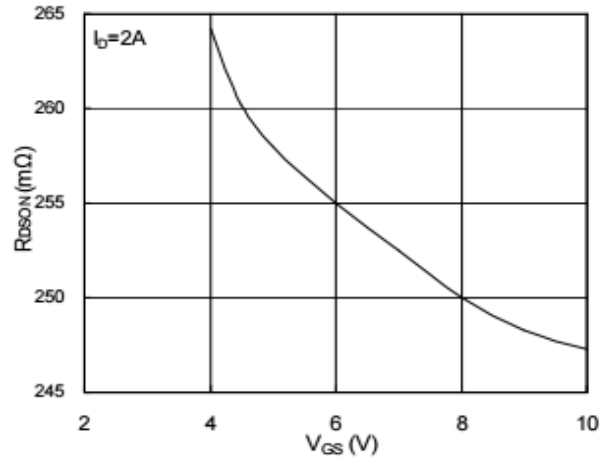


Fig.2 On-Resistance vs. Gate-Source

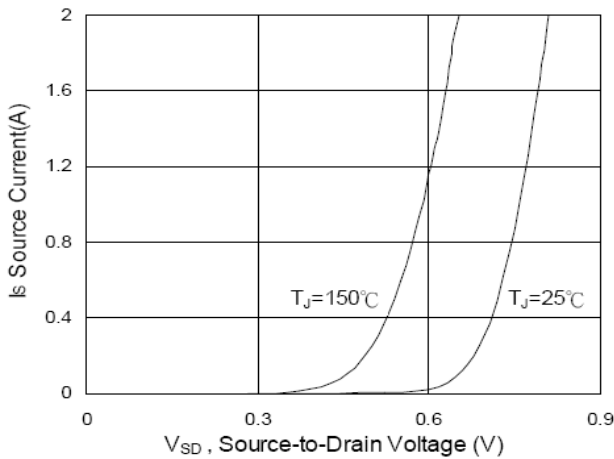


Fig.3 Forward Characteristics of Reverse

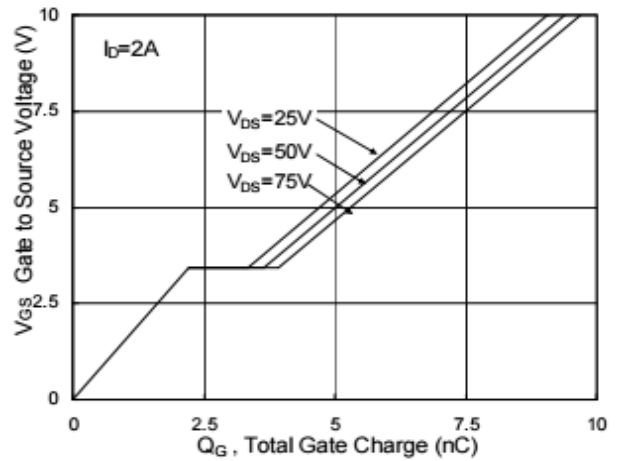


Fig.4 Gate-Charge Characteristics

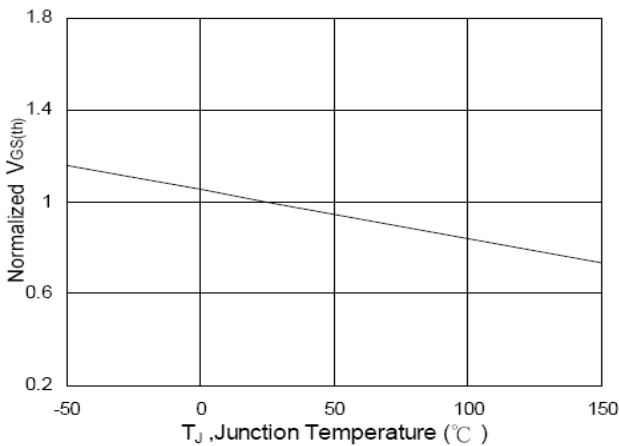


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

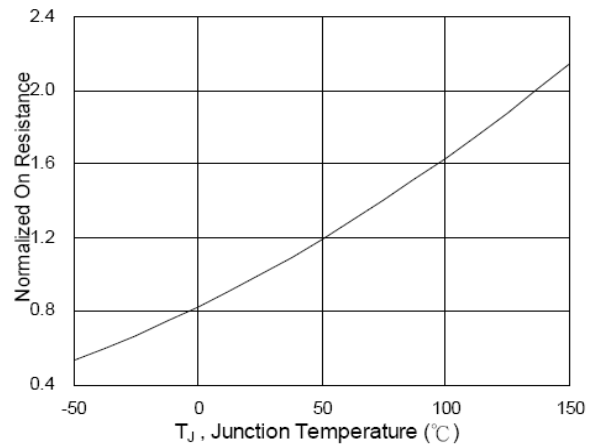


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

CHARACTERISTICS CURVE

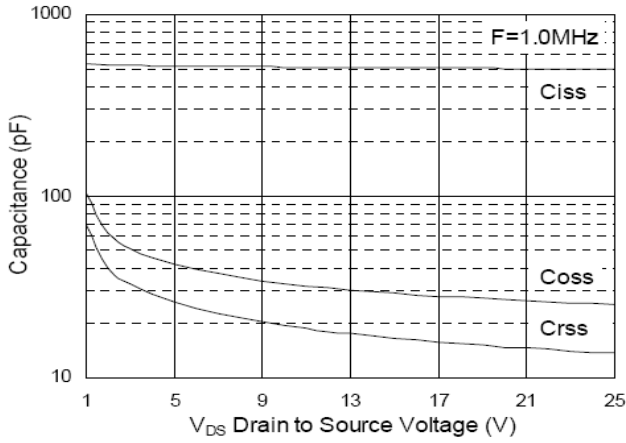


Fig.7 Capacitance

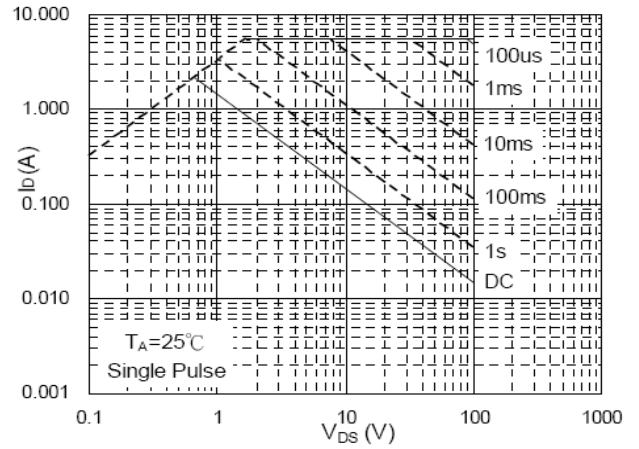


Fig.8 Safe Operating Area

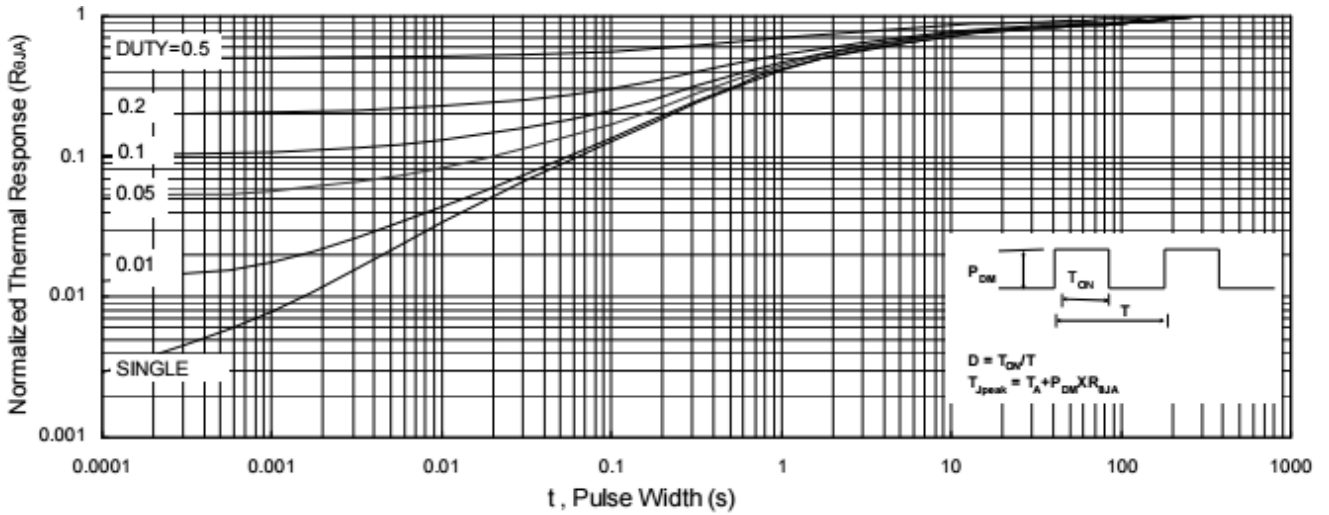


Fig.9 Normalized Maximum Transient Thermal Impedance

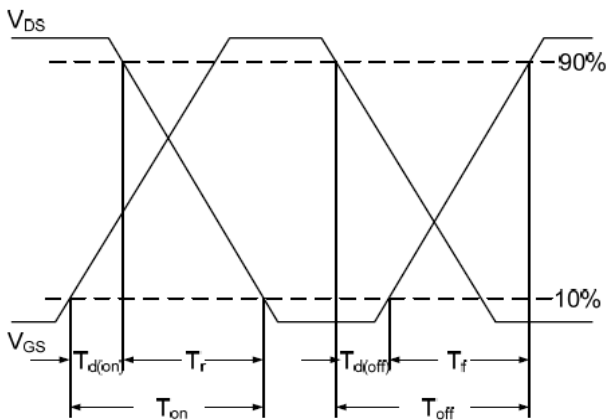


Fig.10 Switching Time Waveform

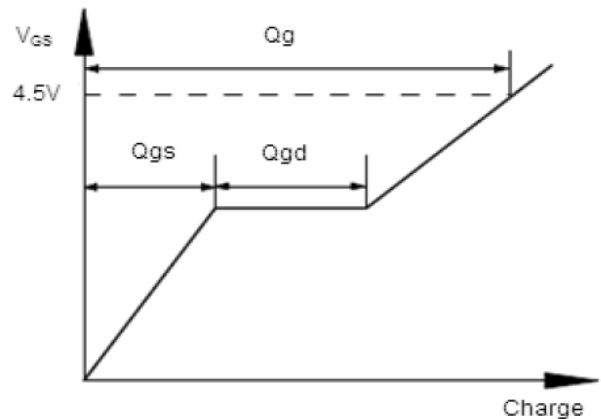


Fig.11 Gate Charge Waveform