

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

DESCRIPTIONS

The SSI318-C is the highest performance trench 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 SSI318-C meet the RoHS and Green Product requirement with full function reliability approved.

FEATURES

- Reliable and Rugged
- Green Device Available
- ESD Protection

MARKING

318

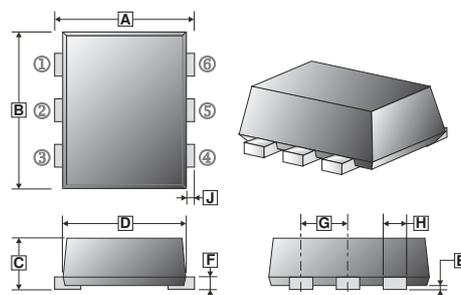
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-563	3K	7 inch

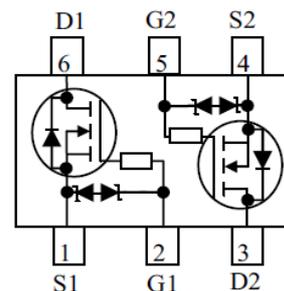
ORDER INFORMATION

Part Number	Type
SSI318-C	Lead (Pb)-free and Halogen-free

SOT-563



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	F	0.09	0.16
B	1.50	1.70	G	0.45	0.55
C	0.525	0.60	H	0.17	0.27
D	1.10	1.30	J	0.10	0.30
E	-	0.05			



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	50	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current ¹ , @V _{GS} =4.5V	I _D	T _A =25°C	0.25
		T _A =85°C	0.18
Pulsed Drain Current ²	I _{DM}	1	A
Power Dissipation	P _D	150	mW
Operating Junction & Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance Ratings			
Thermal Resistance Junction-Ambient ¹	R _{θJA}	833	°C/W

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

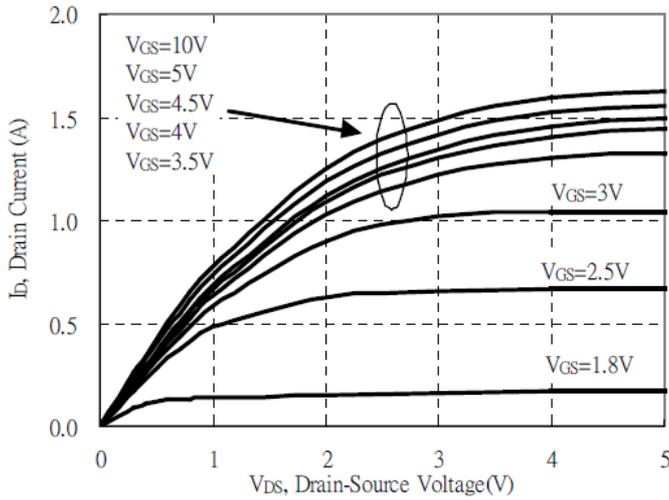
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Drain-Source Breakdown Voltage	BV _{DSS}	50	-	-	V	V _{GS} =0, I _D =250μA	
Gate Threshold Voltage	V _{GS(th)}	0.5	-	1.5	V	V _{DS} =V _{GS} , I _D =1mA	
Gate-Source Leakage Current	I _{GSS}	-	-	±10	μA	V _{GS} = ±20V	
Drain-Source Leakage Current	I _{DSS}	T _J =25°C	-	-	1	μA	V _{DS} =50V, V _{GS} =0
		T _J =70°C	-	-	10		V _{DS} =40V, V _{GS} =0
Static Drain-Source On-Resistance ³	R _{DS(ON)}		-	-	1.6	Ω	V _{GS} =10V, I _D =220mA
			-	-	2		V _{GS} =4.5V, I _D =220mA
			-	-	4.5		V _{GS} =2.5V, I _D =120mA
Total Gate Charge	Q _g	-	0.76	-	nC	I _{DS} =0.25A V _{DS} =30V V _{GS} =4.5V	
Gate-Source Charge	Q _{gs}	-	0.085	-			
Gate-Drain ("Miller") Charge	Q _{gd}	-	0.26	-			
Turn-on Delay Time	T _{d(on)}	-	4	-	nS	V _{DD} =30V I _{DS} =0.1A V _{GS} =4.5V R _{GEN} =10Ω	
Rise Time	T _r	-	7	-			
Turn-off Delay Time	T _{d(off)}	-	15	-			
Fall Time	T _f	-	15	-			
Input Capacitance	C _{iss}	-	43	-	pF	V _{GS} =0 V _{DS} =10V f=1MHz	
Output Capacitance	C _{oss}	-	7.2	-			
Reverse Transfer Capacitance	C _{rss}	-	4	-			
Source-Drain Diode							
Continuous Source Current ¹	I _S	-	-	0.25	A		
Pulsed Source Current ²	I _{SM}	-	-	1	A		
Diode Forward Voltage ³	V _{SD}	-	-	1.2	V	I _S =200mA, V _{GS} =0	

Notes:

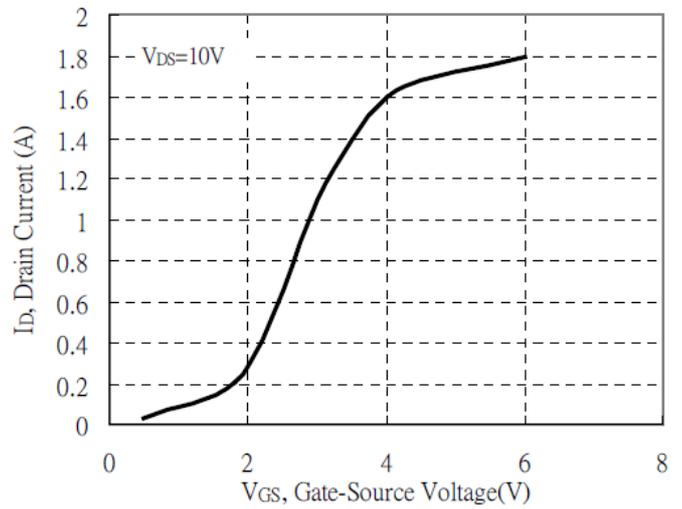
- Surface mounted on FR4 board.
- Pulse width limited by maximum junction temperature, Pw ≤ 300μs, Duty cycle ≤ 1%.
- The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%.

CHARACTERISTIC CURVES

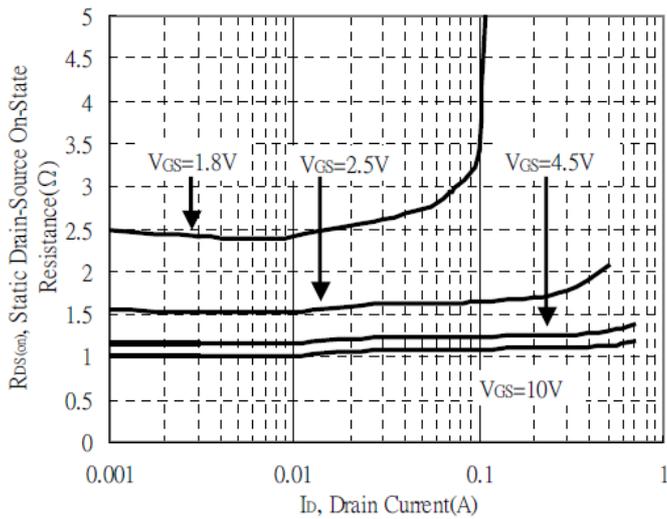
Typical Output Characteristics



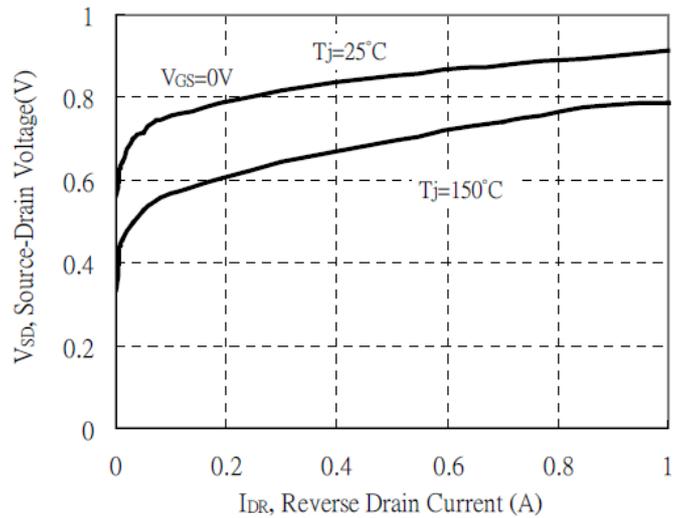
Typical Transfer Characteristics



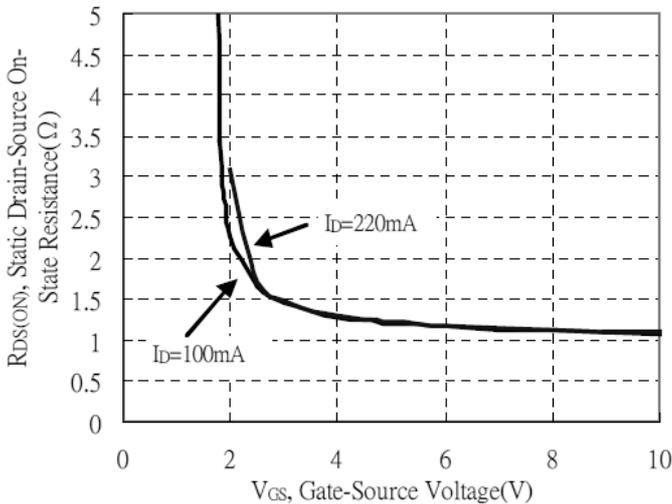
Static Drain-Source On-State resistance vs Drain Current



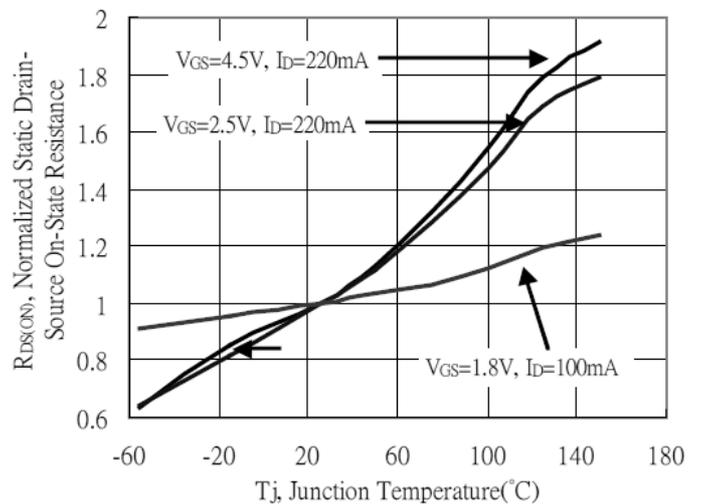
Reverse Drain Current vs Source-Drain Voltage



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

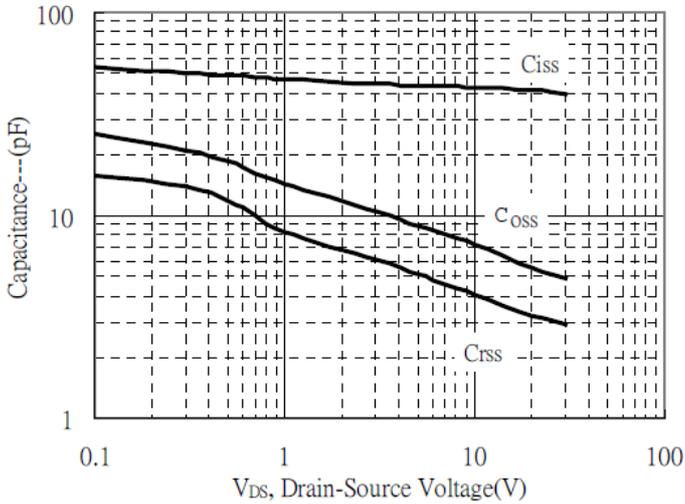


Drain-Source On-State Resistance vs Junction Temperature

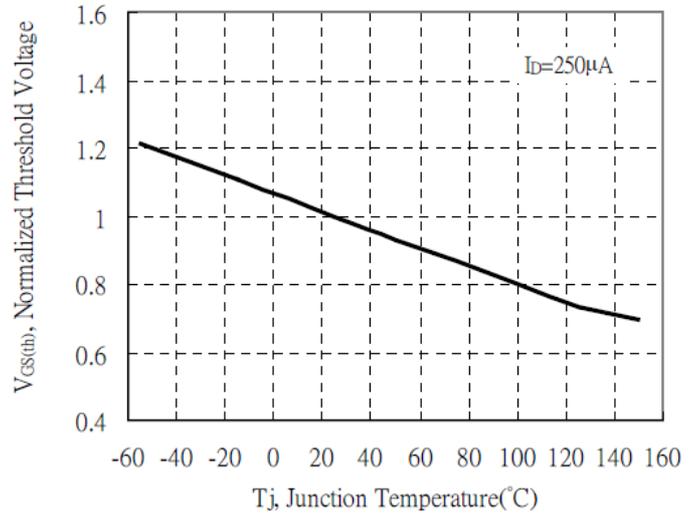


CHARACTERISTIC CURVES

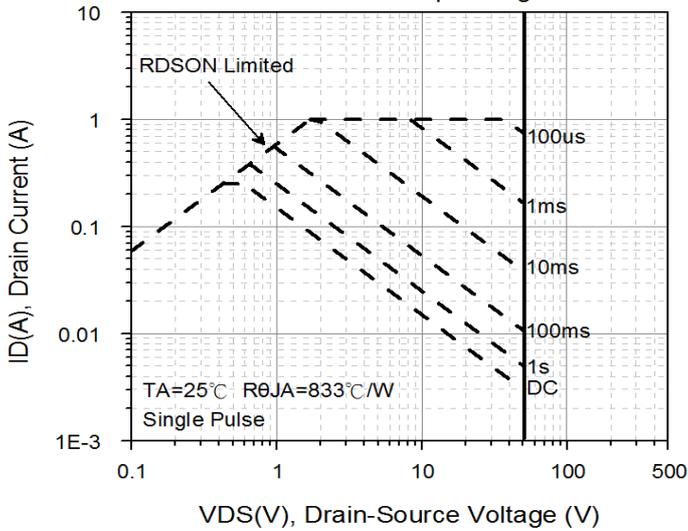
Capacitance vs Drain-to-Source Voltage



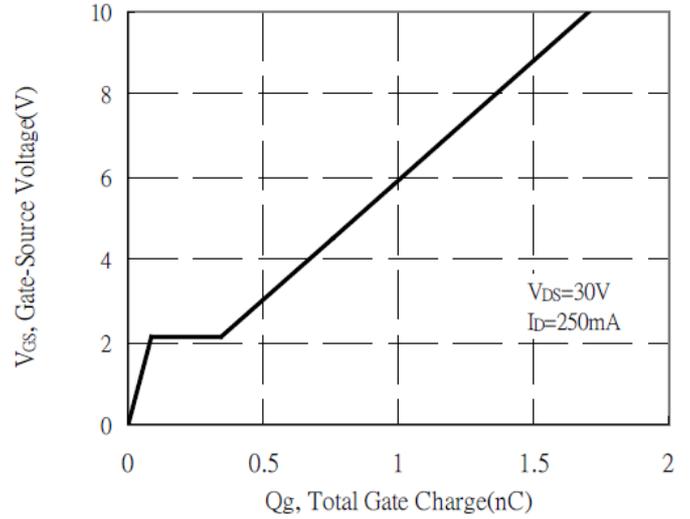
Threshold Voltage vs Junction Temperature



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves

