Elektronische Bauelemente

SSI318-C

0.25A, 60V, $R_{DS(ON)}$ 1.6Ω

Dual N-Ch Enhancement Mode Power MOSFET

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

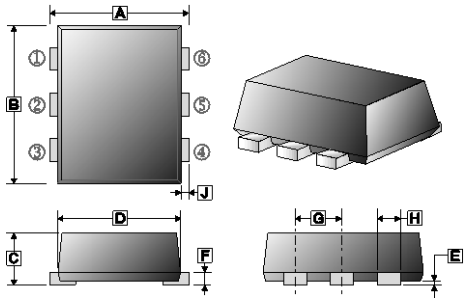
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-563	3K	7 inch

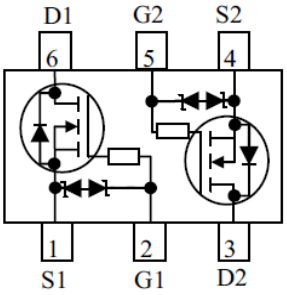
ORDER INFORMATION

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}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1], @V_{GS}=4.5V	T_A=25°C	I_D	0.25	A
	T_A=85°C		0.18	
Pulsed Drain Current [2]		I_{DM}	1	A
Power Dissipation	T_A=25°C	P_D	150	mW
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	833	°C/W

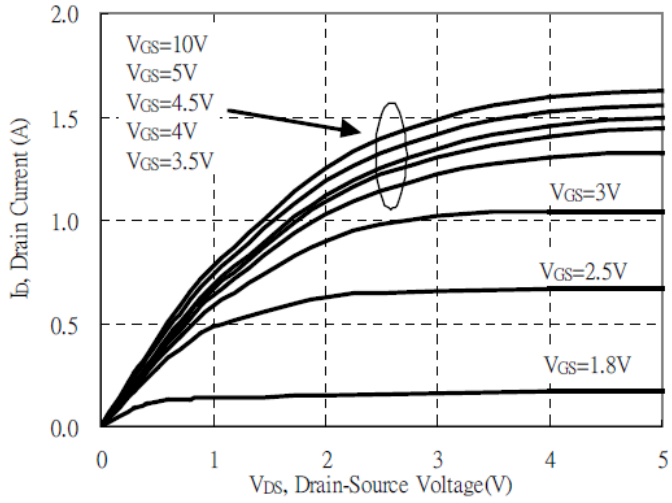
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

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}= ±16V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	1	μA	V_{DS}=48V, V_{GS}=0
	T_J=55°C		-	-	10		V_{DS}=48V, 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	-	0.69	-	nC	I_{DS}=100mA V_{DS}=30V V_{GS}=4.5V
Gate-Source Charge		Q_{gs}	-	0.3	-		
Gate-Drain (“Miller”) Charge		Q_{gd}	-	0.18	-		
Turn-on Delay Time		$T_{d(on)}$	-	7	-	nS	V_{DD}=30V I_{DS}=100mA V_{GS}=4.5V R_{GEN}=10Ω
Rise Time		T_r	-	6.6	-		
Turn-off Delay Time		$T_{d(off)}$	-	20	-		
Fall Time		T_f	-	80	-		
Input Capacitance		C_{iss}	-	27	-	pF	V_{GS}=0 V_{DS}=25V f=1MHz
Output Capacitance		C_{oss}	-	13	-		
Reverse Transfer Capacitance		C_{rss}	-	6	-		
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

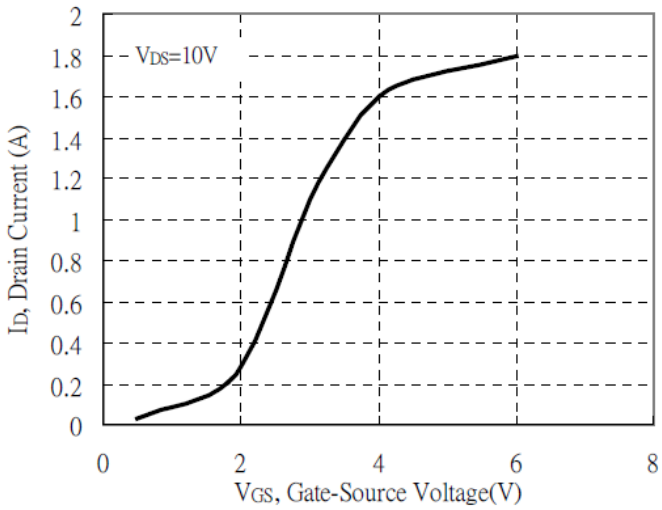
Notes:
1. Surface mounted on FR4 board.
2. Pulse width limited by maximum junction temperature, Pw≦ 300μs, Duty cycle≦ 1%.
3. The data tested by pulsed, pulse width≦ 300μs, duty cycle≦ 2%.

CHARACTERISTIC CURVES

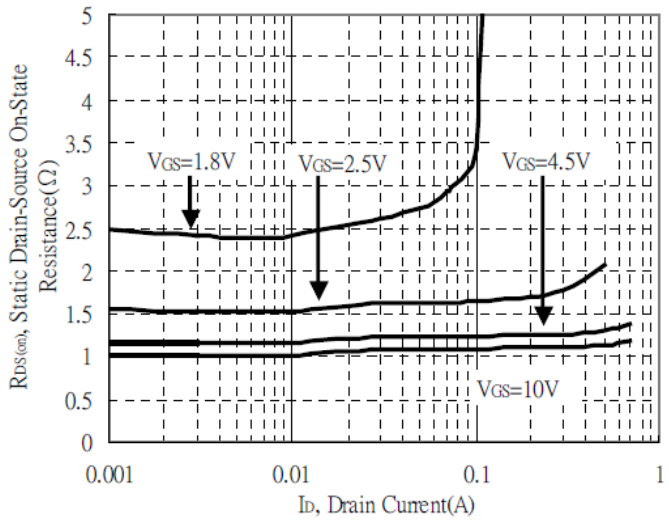
Typical Output Characteristics



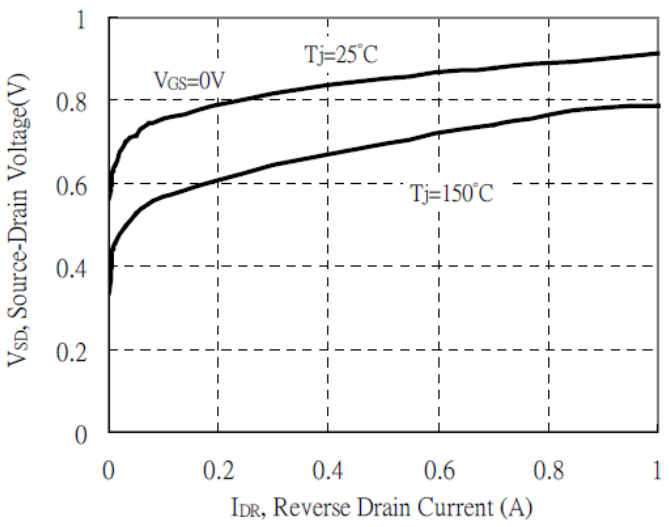
Typical Transfer Characteristics



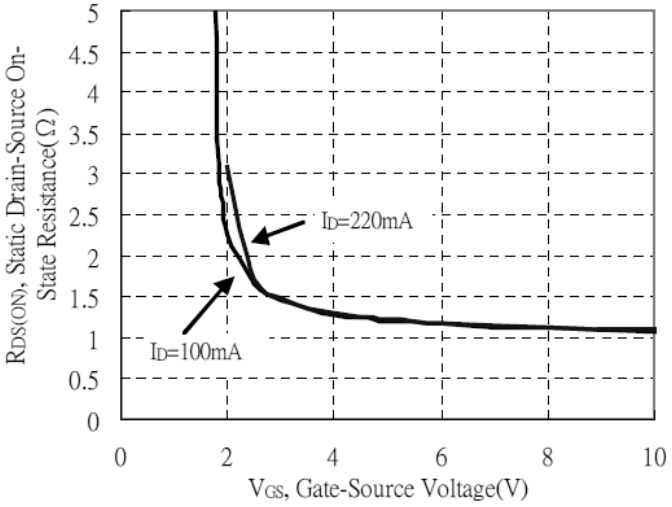
Static Drain-Source On-State resistance vs Drain Current



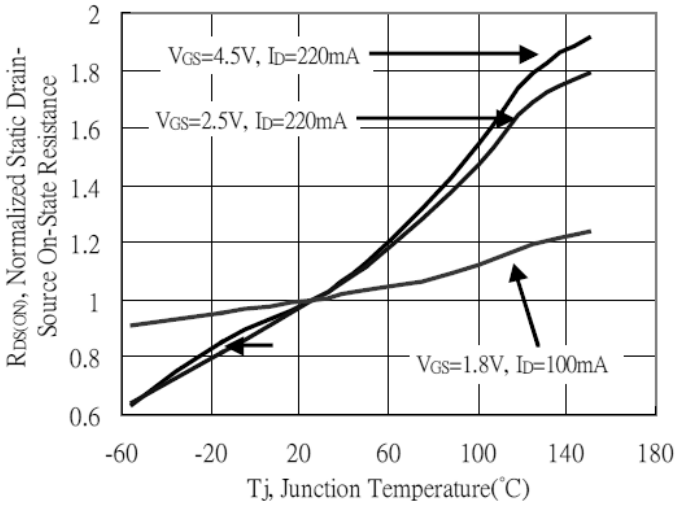
Reverse Drain Current vs Source-Drain Voltage



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

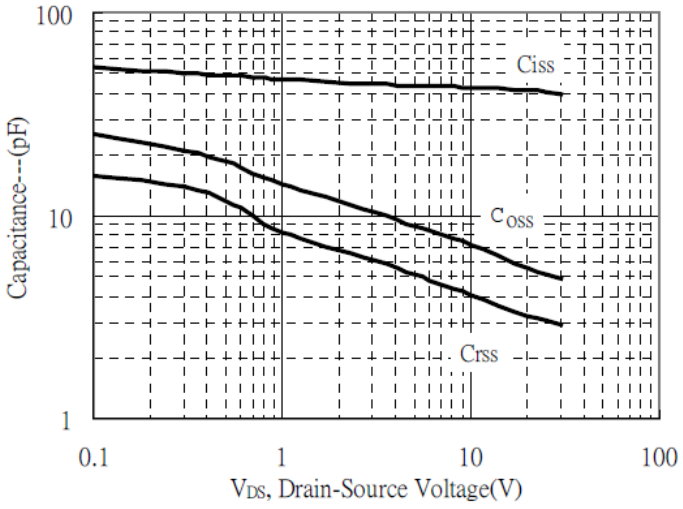


Drain-Source On-State Resistance vs Junction Tempearture

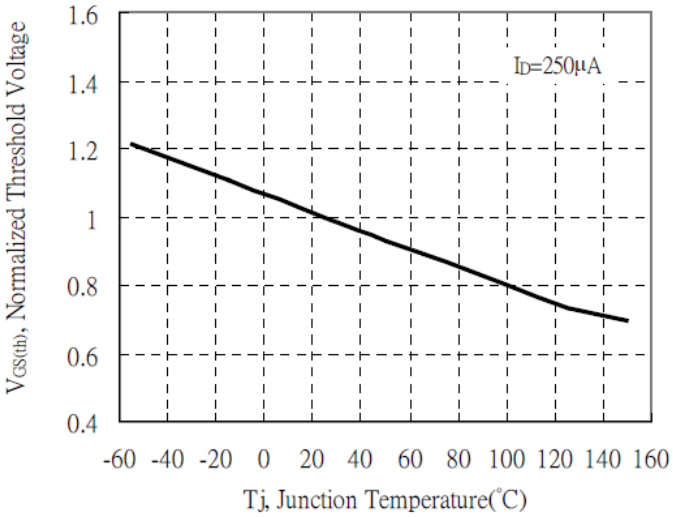


CHARACTERISTIC CURVES

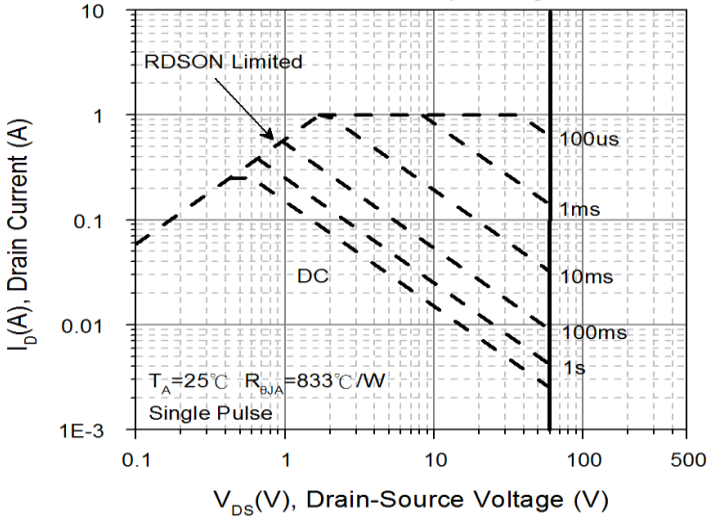
Capacitance vs Drain-to-Source Voltage



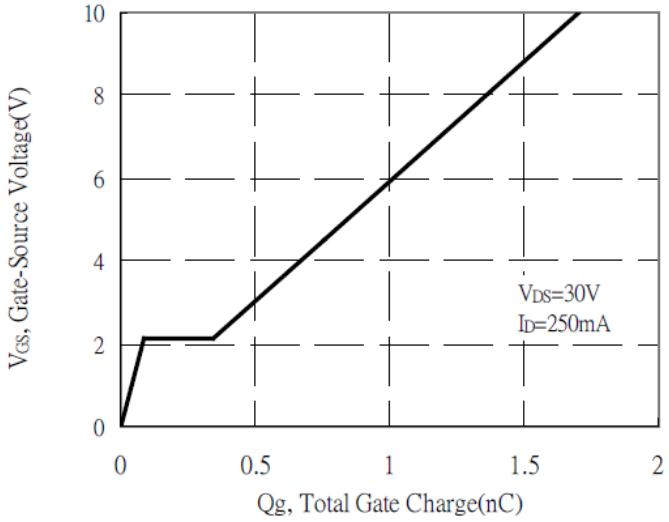
Threshold Voltage vs Junction Tempearture



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves