Elektronische Bauelemente

SSF123-C

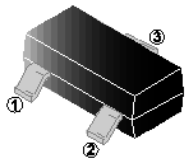
0.2A, 100V, $R_{DS(ON)}$ 5Ω
N-Channel Enhancement Mode Power MOSFET

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

FEATURES

- Trench Power MV MOSFET Technology
- Voltage Controlled Small Signal Switch
- High Density Cell Design for Low $R_{DS(ON)}$
- Fast Switching Speed

SOT-323



APPLICATION

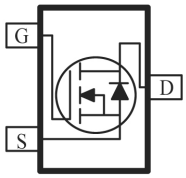
- Small Servo Motor Control
- Power MOSFET Gate Drivers
- Switching Application

MARKING

B123.

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch



ORDER INFORMATION

Part Number	Type
SSF123-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current	T_A=25℃	I_D	0.2	A
	T_A=75℃		0.16	
Pulsed Drain Current [1]		I_{DM}	0.8	A
Maximum Power Dissipation		P_D	150	mW
Thermal Resistance Junction-Ambient [2]		$R_{\theta JA}$	833	℃/W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	℃

Notes:
1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	100	-	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1	1.8	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V, V_{DS}=0
		-	-	±50		V_{GS}= ±10V, V_{DS}=0
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=100V, V_{GS}=0
Static Drain-Source On-Resistance	$R_{DS(on)}$	-	3	5	Ω	V_{GS}=10V, I_D=0.2A
		-	3.5	5.5		V_{GS}=4.5V, I_D=0.2A
Total Gate Charge	Q_g	-	1.61	-	nC	V_{DS}=50V, V_{GS}=10V I_D=0.2A
Turn-on Delay Time	$T_{d(on)}$	-	1.8	-	nS	V_{DD}=50V V_{GS}=10V I_D=0.2A R_{GEN}=6Ω
Rise Time	T_r	-	9.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	17.5	-		
Fall Time	T_f	-	7.6	-		
Input Capacitance	C_{iss}	-	32	-	pF	V_{GS}=0 V_{DS}=50V f=1MHz
Output Capacitance	C_{oss}	-	10	-		
Reverse Transfer Capacitance	C_{rss}	-	7	-		
Source-Drain Diode						
Maximum Body-Diode Continuous Current	I_S	-	-	0.2	A	
Diode Forward Voltage	V_{SD}	-	-	1.2	V	I_S=0.2A, V_{GS}=0

CHARACTERISTIC CURVE

Figure 1. Output Characteristics

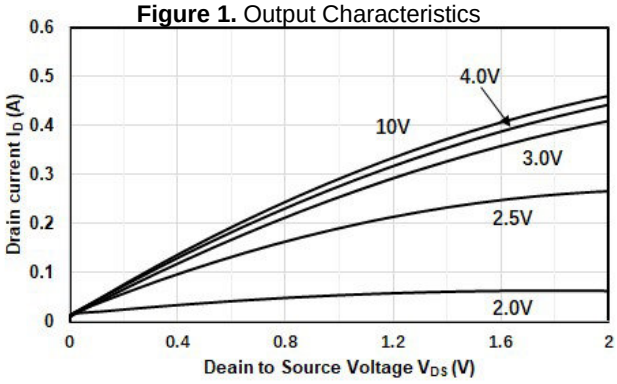


Figure 2. Transfer Characteristics

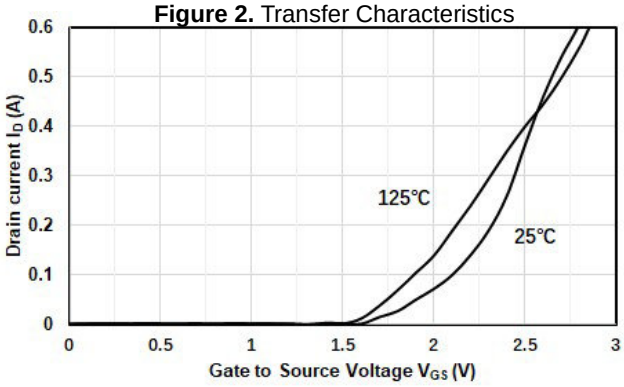


Figure 3. Capacitance Characteristics

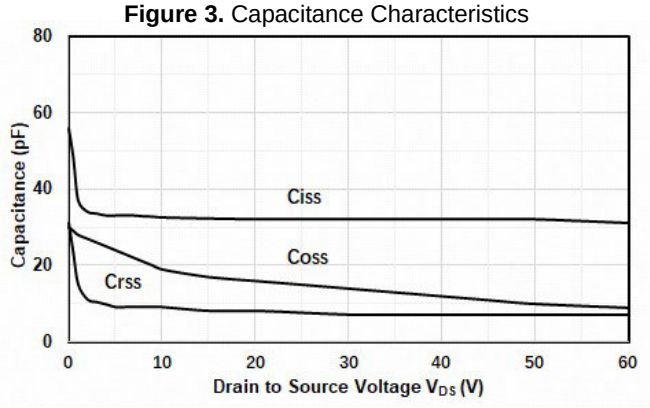


Figure 4. Gate Charge

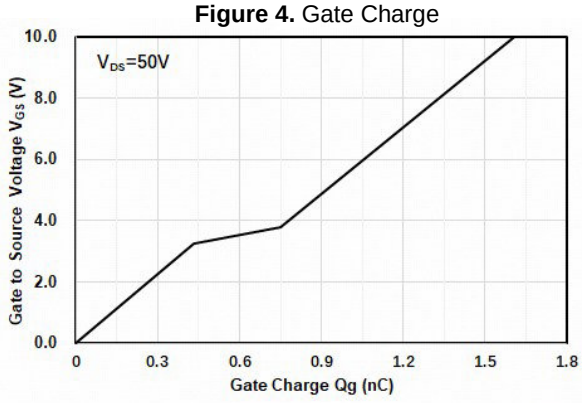


Figure 5. Drain-Source on Resistance

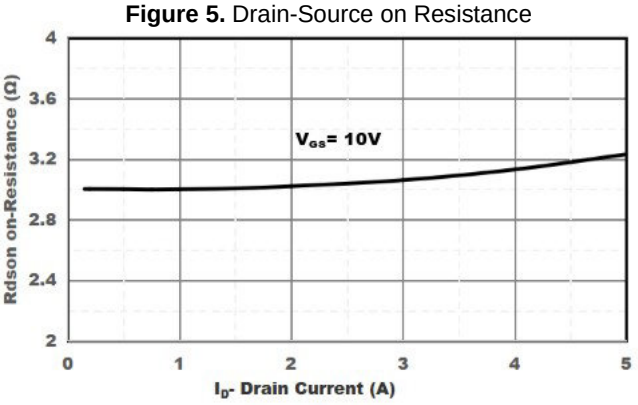


Figure 6. Drain-Source on Resistance

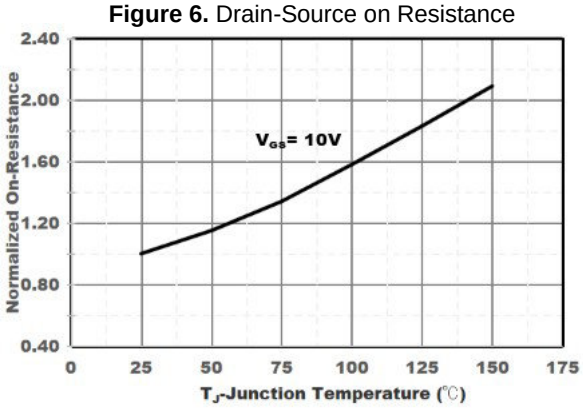


Figure 7. Safe Operation Area

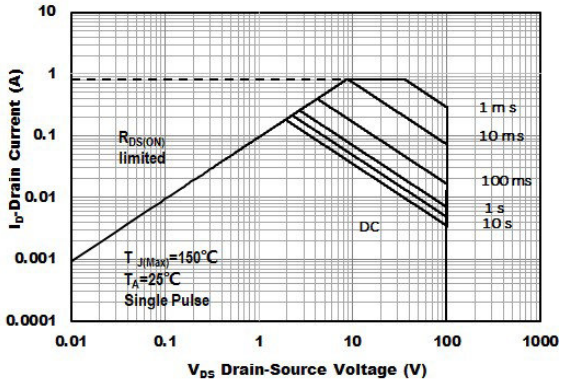
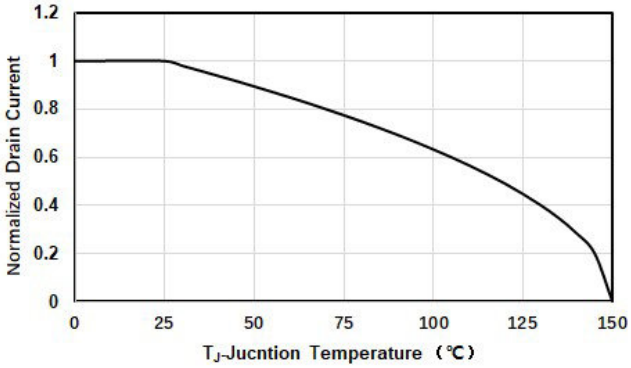
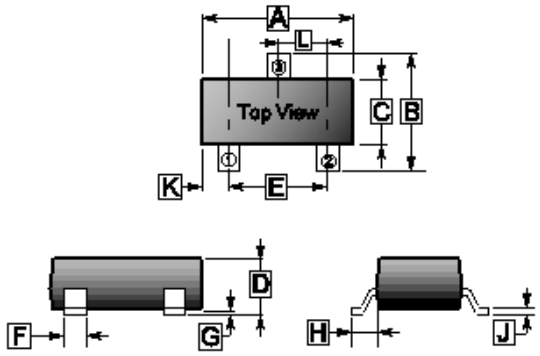


Figure 8. Drain-Source Current



PACKAGE OUTLINE DIMENSIONS

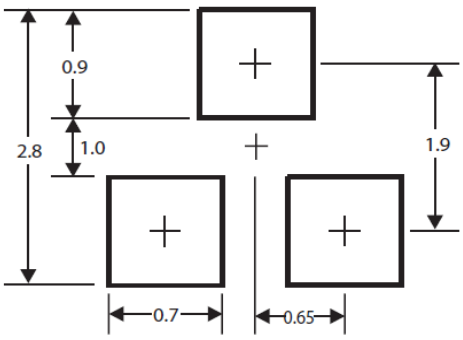
SOT-323



REF.	Millimeter	
	Min.	Max.
A	1.80	2.20
B	1.80	2.55
C	1.10	1.40
D	0.80	1.15
E	1.20	2.00
F	0.15	0.50
G	0.10 REF.	
H	0.525 REF.	
J	0.05	0.25
K	0.35 REF.	
L	0.65 TYP.	

MOUNTING PAD LAYOUT

SOT-323



*Dimensions in millimeters