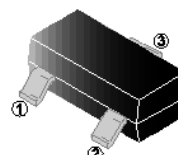


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## DESCRIPTION

SSF2101-C provides the designers with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. SOT-323 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

**SOT-323**



## FEATURES

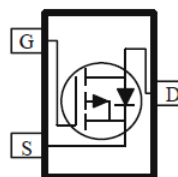
- Lower Gate Charge
- Simple Drive Requirement
- Fast Switching Characteristic
- Leading Trench Technology for Low  $R_{DS(ON)}$   
Extending Battery Life

## MARKING

TS1

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch



## ORDER INFORMATION

Part Number	Type
SSF2101-C	Lead (Pb)-free and Halogen-free

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current	$I_D$	-1.4	A
Pulsed Drain Current @ $t_p=10\mu s$	$I_{DM}$	-3	A
Maximum Power Dissipation	$P_D$	0.29	W
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	431	$^\circ\text{C/W}$
Operating Junction & Storage Temperature Range	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

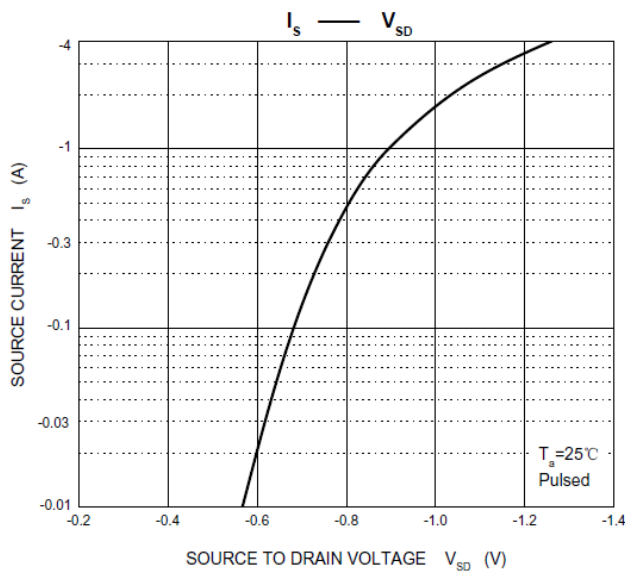
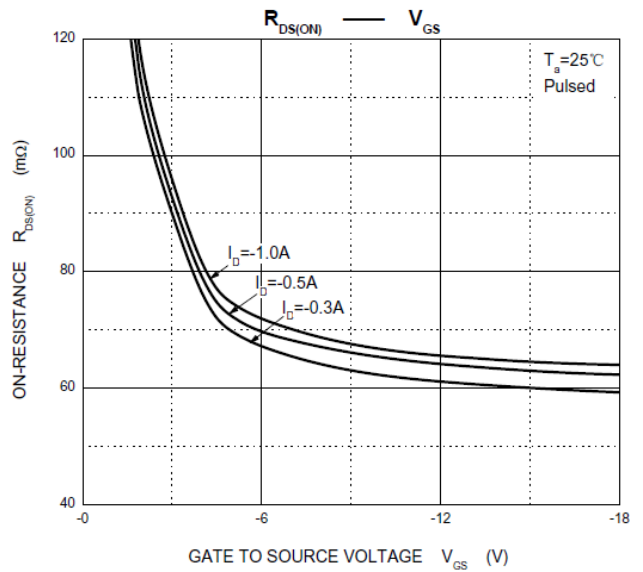
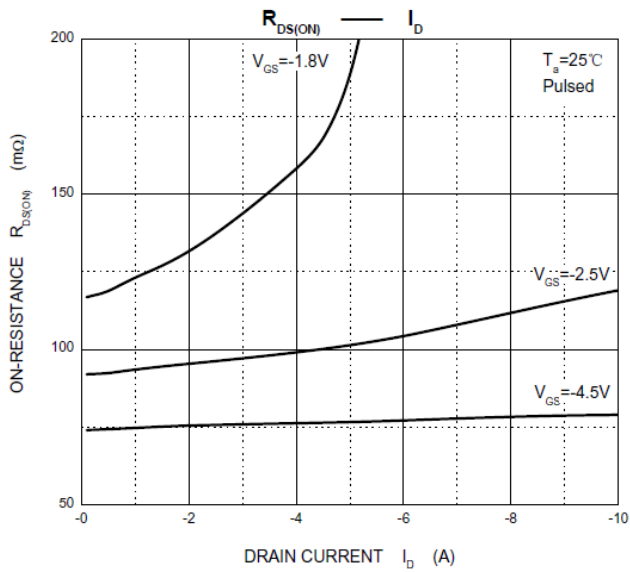
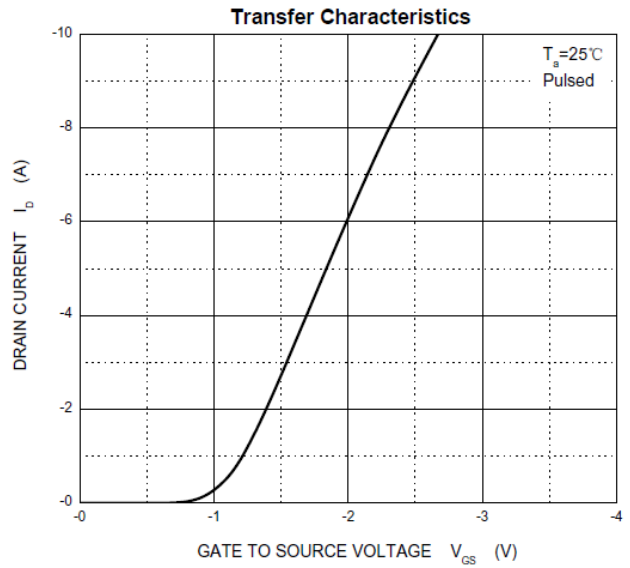
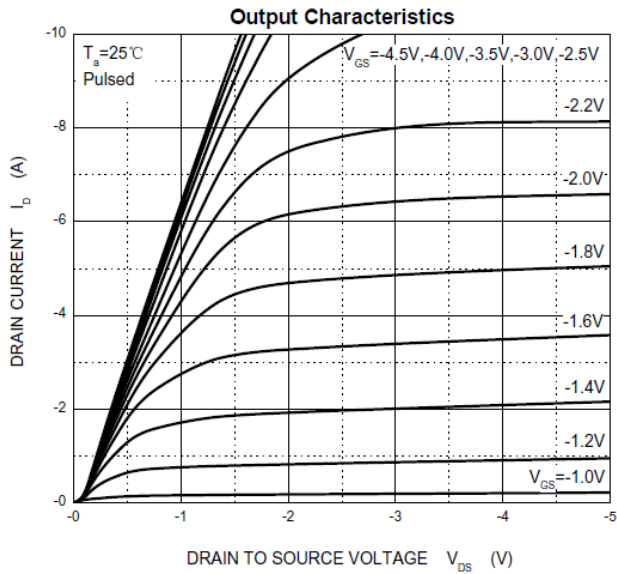
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	$BV_{DSS}$	-20	-	-	V	$V_{GS}=0, I_D=-250\mu\text{A}$
Gate-Threshold Voltage <sup>1</sup>	$V_{GS(th)}$	-0.45	-0.7	-	V	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$
Gate-Source Leakage Current	$I_{GSS}$	-	-	$\pm 100$	nA	$V_{DS}=0, V_{GS}=\pm 8\text{V}$
Drain-Source Leakage Current	$I_{DSS}$	-	-	-1	$\mu\text{A}$	$V_{DS}=-20\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance <sup>1</sup>	$R_{DS(ON)}$	-	-	100	m $\Omega$	$V_{GS}=-4.5\text{V}, I_D=-1\text{A}$
		-	-	140		$V_{GS}=-2.5\text{V}, I_D=-0.5\text{A}$
		-	-	210		$V_{GS}=-1.8\text{V}, I_D=-0.3\text{A}$
Total Gate Charge	$Q_g$	-	3.3	-	nC	$I_D=-3\text{A}$ $V_{DS}=-10\text{V}$ $V_{GS}=-2.5\text{V}$
Total Gate Charge (-4.5V)		-	5.5	-		
Gate-Source Charge	$Q_{gs}$	-	0.7	-		
Gate-Drain Charge	$Q_{gd}$	-	1.3	-		
Turn-on Delay Time	$T_{d(on)}$	-	6.2	-	nS	$V_{DD}=-4\text{V}$ $V_{GS}=-4.5\text{V}$ $R_G=6.2\Omega$ $I_D=-1\text{A}$
Rise Time	$T_r$	-	15	-		
Turn-off Delay Time	$T_{d(off)}$	-	26	-		
Fall Time	$T_f$	-	18	-		
Input Capacitance	$C_{iss}$	-	640	-	pF	$V_{DS}=-8\text{V}$ $V_{GS}=0$ $f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	120	-		
Reverse Transfer Capacitance	$C_{rss}$	-	82	-		
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	-	-0.62	-1.2	V	$I_S=-0.3\text{A}, V_{GS}=0$

Note:

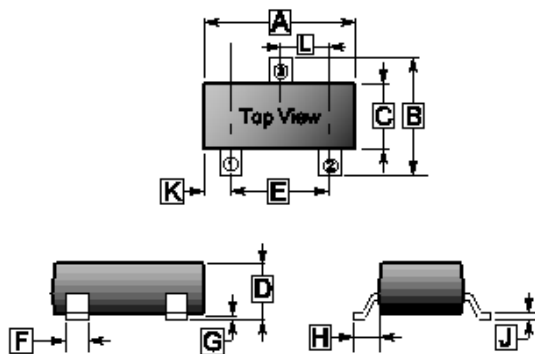
- Pulse Test: Pulse width $\leq 300\mu\text{s}$ , duty cycle $\leq 0.5\%$ .

**CHARACTERISTIC CURVES**



**PACKAGE OUTLINE DIMENSIONS**

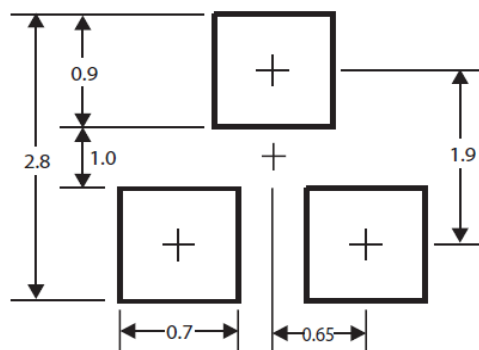
**SOT-323**



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