

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

DESCRIPTION

SSF2101 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.

FEATURES

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

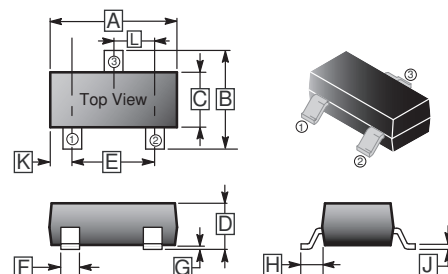
MARKING

TS1

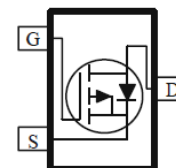
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch

SOT-323



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.1	REF.
B	1.80	2.55	H	0.525	REF.
C	1.1	1.4	J	0.05	0.25
D	0.80	1.15	K	0.8	TYP.
E	1.20	2.00	L	0.65	TYP.
F	0.15	0.50			



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}	± 8	V
Continuous Drain Current	I_D	-1.4	A
Pulsed Drain Current @ $t_p=10\mu\text{s}$	I_{DM}	-3	A
Maximum Power Dissipation	P_D	0.29	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	$^\circ\text{C} / \text{W}$
Operating Junction and Storage Temperature	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
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	$V_{GS}=0, I_D = -250\mu\text{A}$
Gate-Threshold Voltage ¹	$V_{GS(th)}$	-0.45	-0.7	-	V	$V_{DS}=V_{GS}, I_D = -250\mu\text{A}$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0, V_{GS} = \pm 8\text{V}$
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	$V_{DS} = -20\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	100	m Ω	$V_{GS} = -4.5\text{V}, I_D = -1\text{A}$
		-	-	140		$V_{GS} = -2.5\text{V}, I_D = -0.5\text{A}$
		-	-	210		$V_{GS} = -1.8\text{V}, I_D = -0.3\text{A}$
Charges and Capacitances						
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	-		
Switching Characteristics						
Total Gate Charge	Q_g	-	5.5	-	nC	$I_D = -3\text{A}, V_{DS} = -10\text{V}, V_{GS} = -4.5\text{V}$
		-	3.3	-		$I_D = -3\text{A}$ $V_{DS} = -10\text{V}$ $V_{GS} = -2.5\text{V}$
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	-		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	-	-0.62	-1.2	V	$I_S = -0.3\text{A}, V_{GS}=0$

Notes:

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

CHARACTERISTIC CURVES

