

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

DESCRIPTION

The SSF2102 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The 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

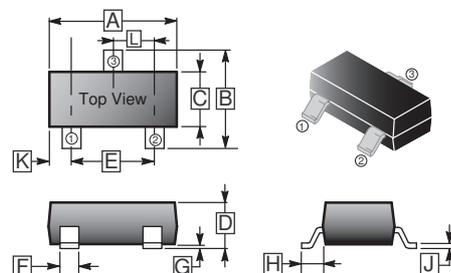
MARKING

TS2

PACKAGE INFORMATION

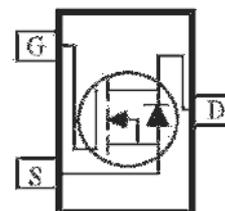
Package	MPQ	Leader Size
SOT-323	3K	7 inch

SOT-323



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.1	REF.
B	1.80	2.45	H	0.525	REF.
C	1.1	1.4	J	0.08	0.25
D	0.80	1.10	K	0.8	TYP.
E	1.20	1.40	L	0.65	TYP.
F	0.15	0.40			

Top View



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	2.1	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Maximum Power Dissipation	P_D	200	mW
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	625	$^\circ\text{C} / \text{W}$
Operating Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	20	-	-	V	$V_{GS}=0, I_D=10\mu\text{A}$
Gate-Threshold Voltage	$V_{GS(th)}$	0.65	0.95	1.2	V	$V_{DS}=V_{GS}, I_D=50\mu\text{A}$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}= \pm 8\text{V}, V_{DS}=0$
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	$V_{DS}=20\text{V}, V_{GS}=0$
Forward Transconductance ¹	g_{fs}	-	8	-	S	$V_{DS}=5\text{V}, I_D=3.6\text{A}$
Diode Forward Voltage	V_{SD}	-	0.76	1.2	V	$I_S=0.94\text{A}, V_{GS}=0$
Static Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	45	60	m Ω	$V_{GS}=4.5\text{V}, I_D=3.6\text{A}$
		-	70	115		$V_{GS}=2.5\text{V}, I_D=3.1\text{A}$
Dynamic Characteristics						
Total Gate Charge	Q_g	-	4	-	nC	$I_D=3.6\text{A}$ $V_{DS}=10\text{V}$ $V_{GS}=4.5\text{V}$
Gate-Source Charge	Q_{gs}	-	0.65	-		
Gate-Drain Change	Q_{gd}	-	1.5	-		
Input Capacitance ²	C_{iss}	-	300	-	pF	$V_{GS}=0$ $V_{DS}=10\text{V}$ $f=1.0\text{MHz}$
Output Capacitance ²	C_{oss}	-	120	-		
Reverse Transfer Capacitance ²	C_{rss}	-	80	-		
Switching Parameters						
Turn-on Delay Time ²	$T_{d(on)}$	-	7	-	nS	$V_{DD}=10\text{V}$ $V_{GEN}=4.5\text{V}$ $R_G=6\Omega$ $R_L=5.5\Omega$ $I_D=3.6\text{A}$
Rise Time ²	T_r	-	55	-		
Turn-off Delay Time ²	$T_{d(off)}$	-	16	-		
Fall Time ²	T_f	-	10	-		

Note:

1. Pulse Test : Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
2. These parameters have no way to verify.