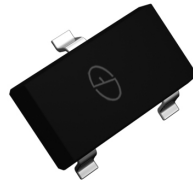
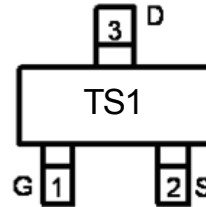


Main Product Characteristics

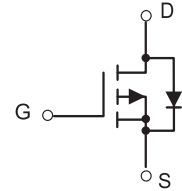
$V_{(BR)DSS}$	-20V
$R_{DS(on)MAX}$	100m Ω @-4.5V
	140m Ω @-2.5V
	210m Ω @-1.8V
I_D	-1.4 A



SOT-323



Marking and Pin Assignment



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for DC-DC converter, power management in portable battery, computer, printer, cellular and general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SSF2101 utilizes the latest processing techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in DC-DC converter, power management in portable battery, computer, printer, cellular and general purpose applications.

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	- 20	V
Gate-Source Voltage	V_{GS}	± 8.0	
Continuous Drain Current	I_D	-1.4	A
Pulsed Drain Current ($t_p=10\mu s$)	I_{DM}	-3.0	
Power Dissipation	P_D	0.29	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	-50 to +150	

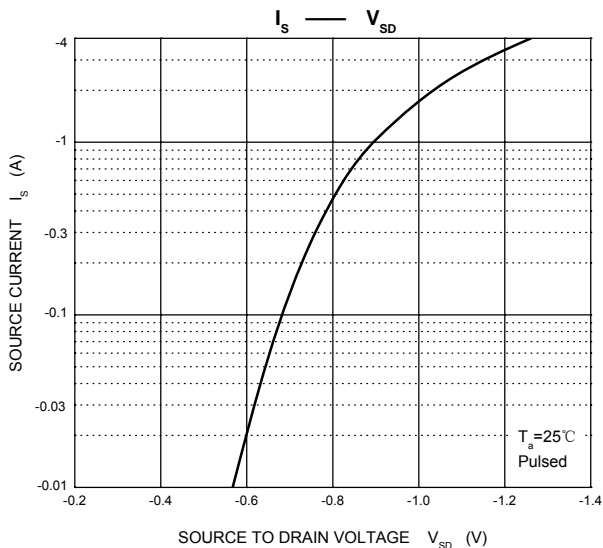
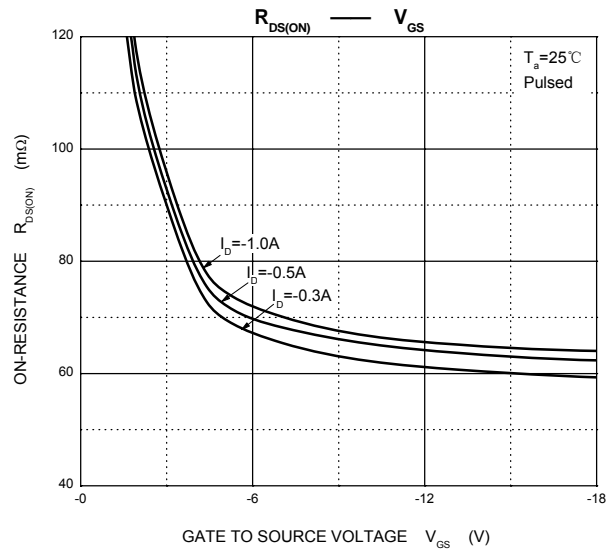
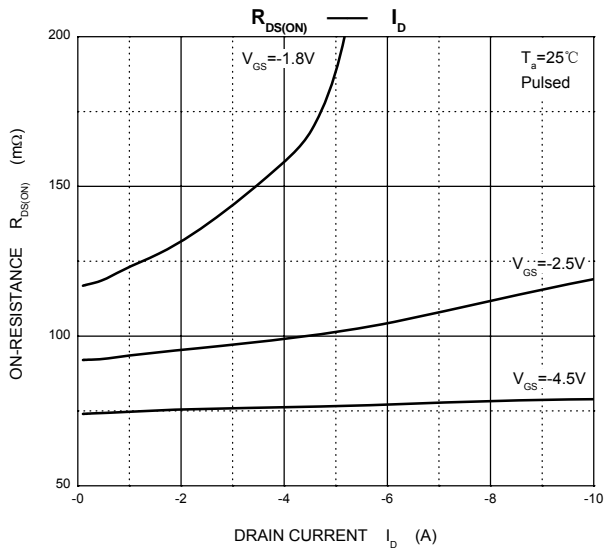
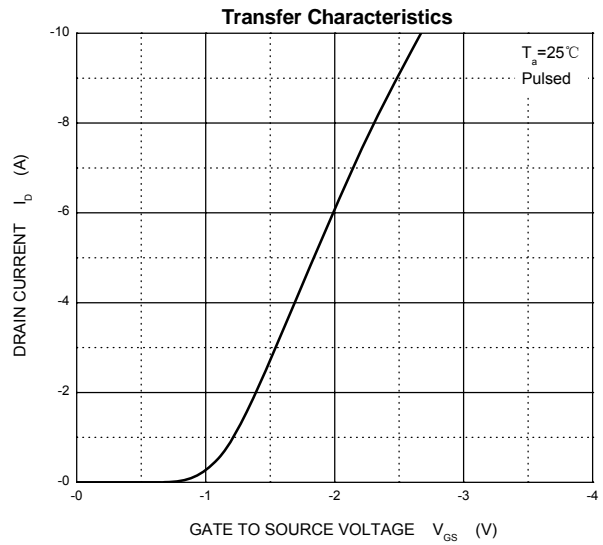
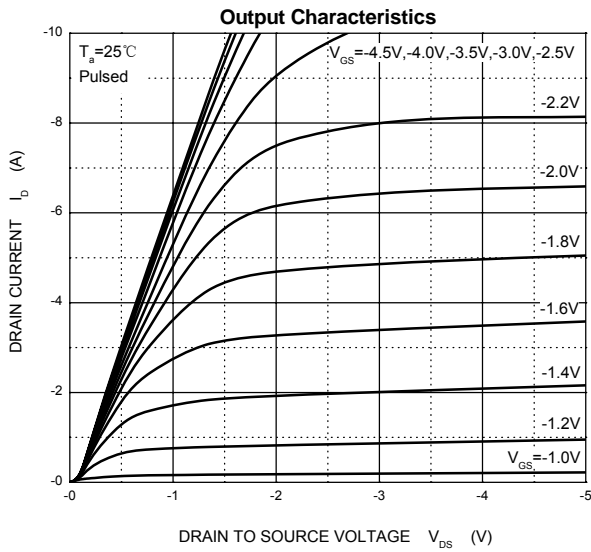
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF CHARACTERISSTICS						
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Source Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1.0	μA
OFF CHARACTERISSTICS (note 1)						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.7		V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1.0A$			100	m Ω
		$V_{GS} = -2.5V, I_D = -0.5A$			140	
		$V_{GS} = -1.8V, I_D = -0.3A$			210	
CHARGES AND CAPACITANCES						
Input Capacitance	C_{iss}	$V_{DS} = -8.0V, V_{GS} = 0V, f = 1MHz$		640		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			82		
SWITCHING CHARACTERISSTICS (note 2,3)						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -4.5V, V_{DD} = -4.0V, I_D = -1.0A, R_G = 6.2\Omega$		6.2		ns
Rise Time	t_r			15		
Turn-Off Delay Time	$t_{d(off)}$			26		
Fall Time	t_f			18		
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3.0A$		5.5	10	nC
		$V_{DS} = -10V, V_{GS} = -2.5V, I_D = -3.0A$		3.3	6	
Gate-Source Charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -2.5V, I_D = -3.0A$		0.7		
Gate-Drain Charge	Q_{gd}	$V_{DS} = -10V, V_{GS} = -2.5V, I_D = -3.0A$		1.3		
Drain-source Body diode characteristics						
Forward Diode Voltage	V_{SD}	$V_{GS} = 0V, I_S = -0.3A$		-0.62	-1.2	V

Notes :

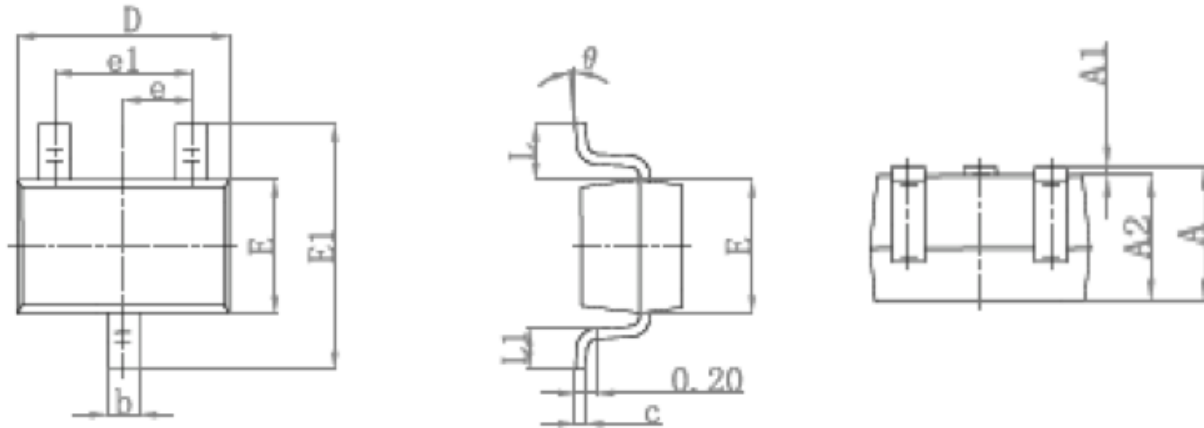
1. Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Switching characteristics are independent of operating junction temperatures.

Typical Electrical and Thermal Characteristics



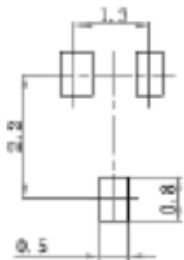
Package Outline Dimensions

SOT-323



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05 mm.
 3. The pad layout is for reference purposes only.