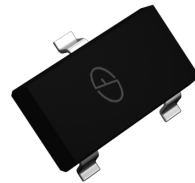
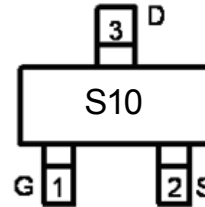


Main Product Characteristics

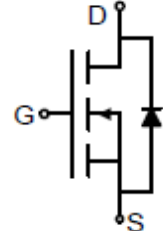
$V_{(BR)DSS}$	60V
$R_{DS(on)MAX}$	105mΩ@10V
	125mΩ@4.5V
I_D	3A



SOT-23



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 SSF2310 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 noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	3	A
Pulsed Drain Current (note 1)	I_{DM}	10	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

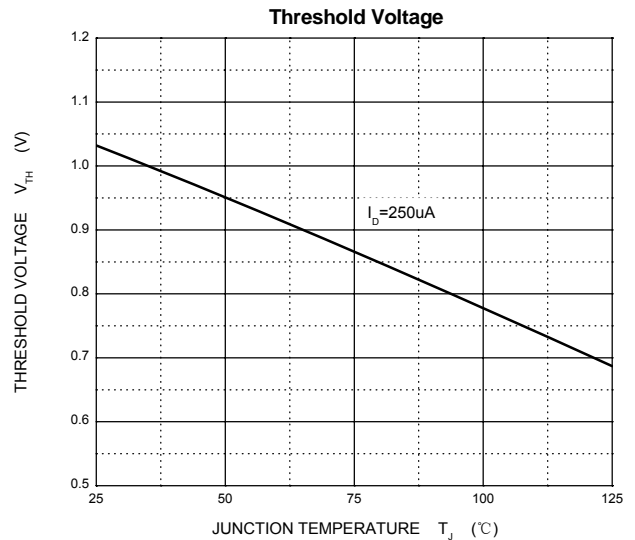
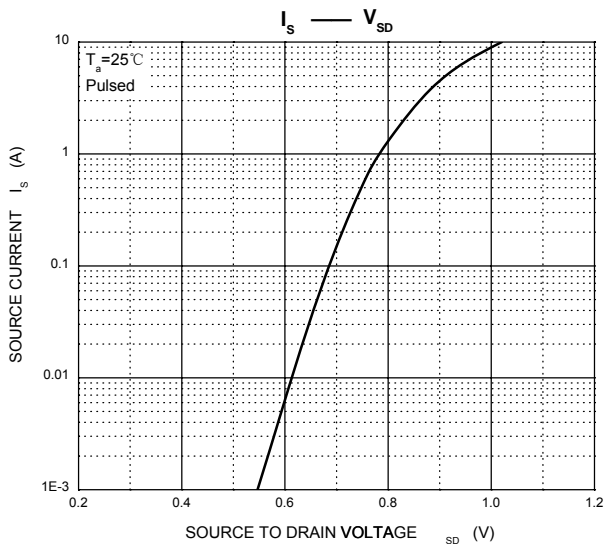
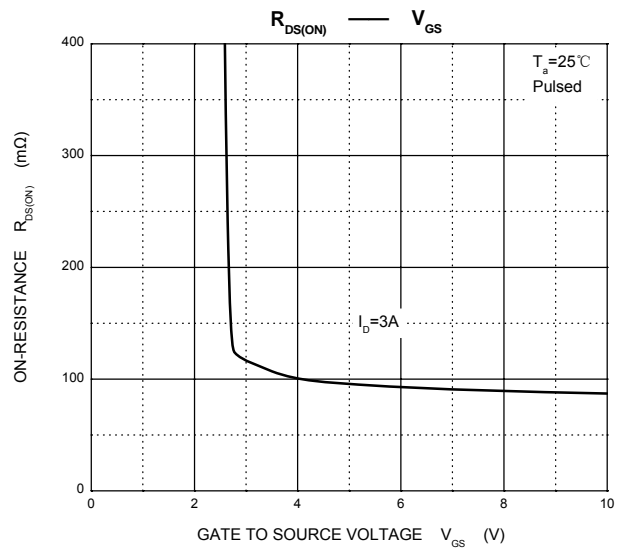
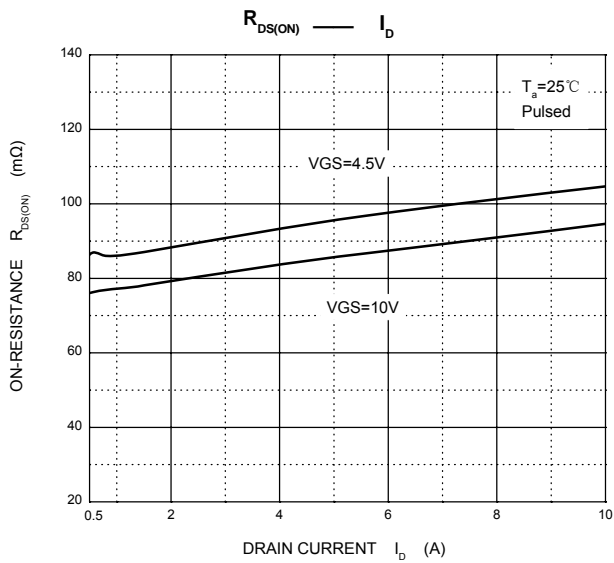
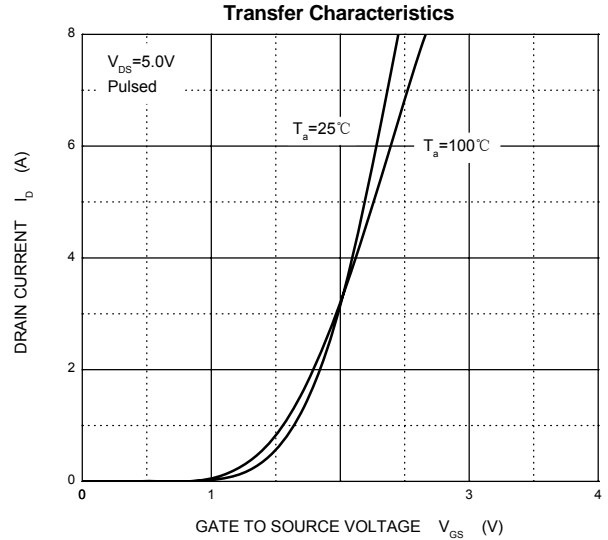
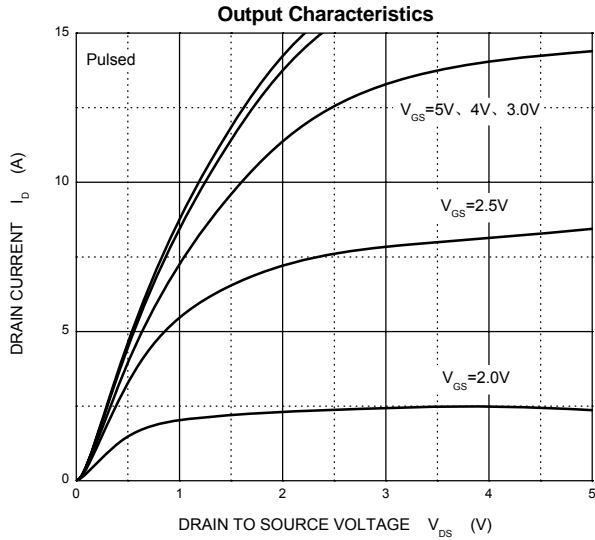
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 100	nA
Gate Threshold Voltage (note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	-	2	V
Drain-Source On-Resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$	-	-	105	m Ω
		$V_{GS} = 4.5V, I_D = 3A$	-	-	125	m Ω
Forward Transconductance (note 3)	g_{FS}	$V_{DS} = 15V, I_D = 2A$	1.4	-	-	S
Diode Forward Voltage (note 3)	V_{SD}	$I_S = 3A, V_{GS} = 0V$	-	-	1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$	-	247	-	pF
Output Capacitance	C_{oss}		-	34	-	pF
Reverse Transfer Capacitance	C_{rss}		-	19.5	-	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{GS} = 10V, V_{DD} = 30V, I_D = 1.5A, R_{GEN} = 1\Omega$	-	6	-	ns
Turn-on Rise Time	t_r		-	15	-	ns
Turn-off Delay Time	$t_{d(off)}$		-	15	-	ns
Turn-off Fall Time	t_f		-	10	-	ns
Total Gate Charge	Q_g	$V_{DS} = 30V, V_{GS} = 4.5V, I_D = 3A$	-	6	-	nC
Gate-Source Charge	Q_{gs}		-	1	-	nC
Gate-Drain Charge	Q_{gd}		-	1.3	-	nC

Notes :

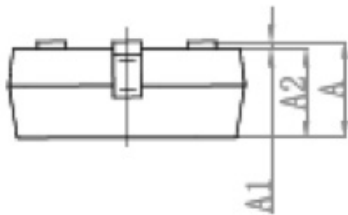
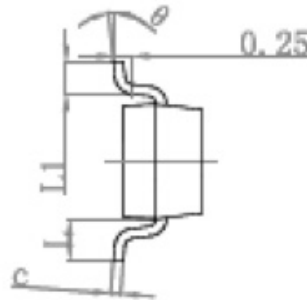
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10s$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.

Typical Electrical and Thermal Characteristic Curves



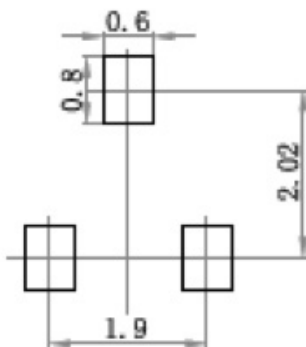
Package Outline Dimensions

SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
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.