

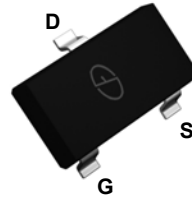


**THE DATASHEET OF  
SSF2318E**

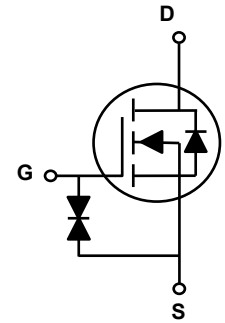


### Main Product Characteristics

$V_{DS}$	20V
$R_{DS(ON)}$ (Max.)	22m $\Omega$ @ 4.5V
	30m $\Omega$ @ 2.5V
	55m $\Omega$ @ 1.8V
$I_D$	6.5A



SOT-23



Schematic Diagram

### Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



### Description

The SSF2318E utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

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

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Drain Current-Continuous @ Current-Pulsed <sup>1</sup>	$I_D$	6.5	A
	$I_{DM}$	30	A
Maximum Power Dissipation	$P_D$	1.4	W
Thermal Resistance, Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$	90	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-55 To +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 To +150	$^{\circ}\text{C}$

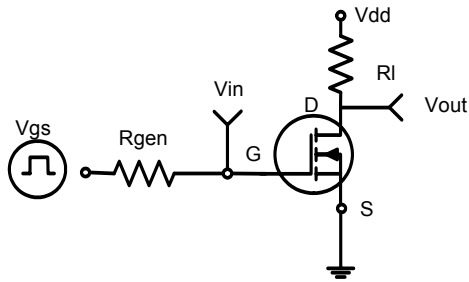
**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>On / Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=20V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 4.5V, V_{DS}=0V$	-	-	$\pm 1$	$\mu A$
		$V_{GS}=\pm 8V, V_{DS}=0V$	-	-	$\pm 10$	$\mu A$
Drain-Source On-State Resistance <sup>3</sup>	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6.5A$	-	18	22	m $\Omega$
		$V_{GS}=2.5V, I_D=5.5A$	-	24	30	m $\Omega$
		$V_{GS}=1.8V, I_D=5A$	-	40	55	m $\Omega$
Forward Transconductance <sup>3</sup>	$g_{fs}$	$V_{DS}=5V, I_D=6.5A$	-	7	-	S
Gate Threshold Voltage <sup>3</sup>	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	0.4	0.6	1	V
<b>Dynamic and Switching Characteristics</b>						
Total Gate Charge <sup>4</sup>	$Q_g$	$V_{DS}=10V, I_D=6.5A$ $V_{GS}=4.5V$	-	10	-	nC
Gate-Source Charge <sup>4</sup>	$Q_{gs}$		-	2.3	-	
Gate-to-Drain Charge <sup>4</sup>	$Q_{gd}$		-	3	-	
Turn-On Delay Time <sup>4</sup>	$t_{d(on)}$	$V_{DD}=10V, R_G=3\Omega$ $V_{GS}=5V, I_D=1A$	-	6.5	-	nS
Rise Time <sup>4</sup>	$t_r$		-	13	-	
Turn-Off Delay Time <sup>4</sup>	$t_{d(off)}$		-	50	-	
Fall Time <sup>4</sup>	$t_f$		-	30	-	
Input Capacitance <sup>4</sup>	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V,$ $F=1MHz$	-	1160	-	pF
Output Capacitance <sup>4</sup>	$C_{oss}$		-	200	-	
Reverse Transfer Capacitance <sup>4</sup>	$C_{rss}$		-	140	-	
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS}=0V, I_S=1A$	-	0.76	1	V

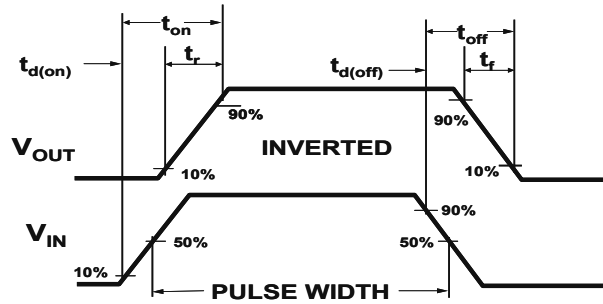
Note:

1. Repetitive rating: Pulsed width limited by maximum junction temperature.
2. Surface mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

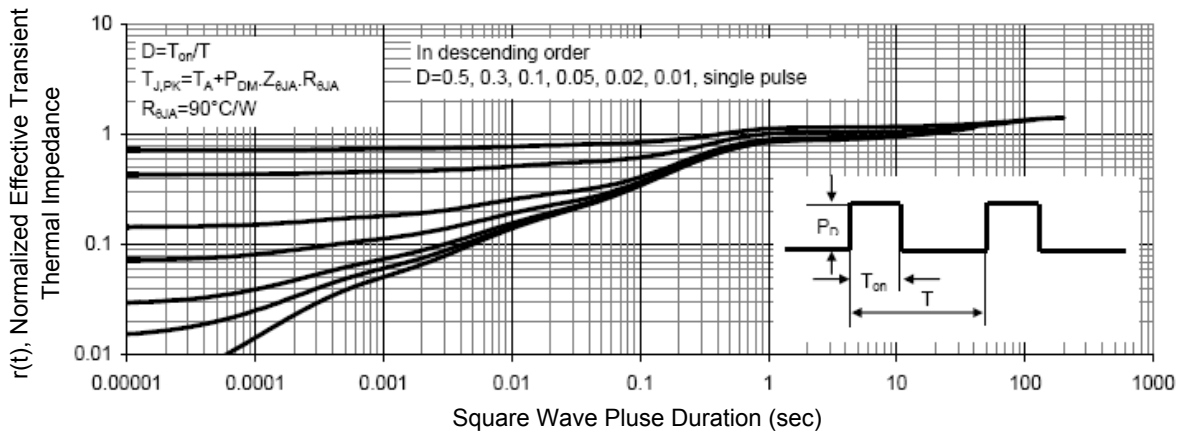
**Typical Electrical and Thermal Characteristics**



**Figure 1. Switching Test Circuit**

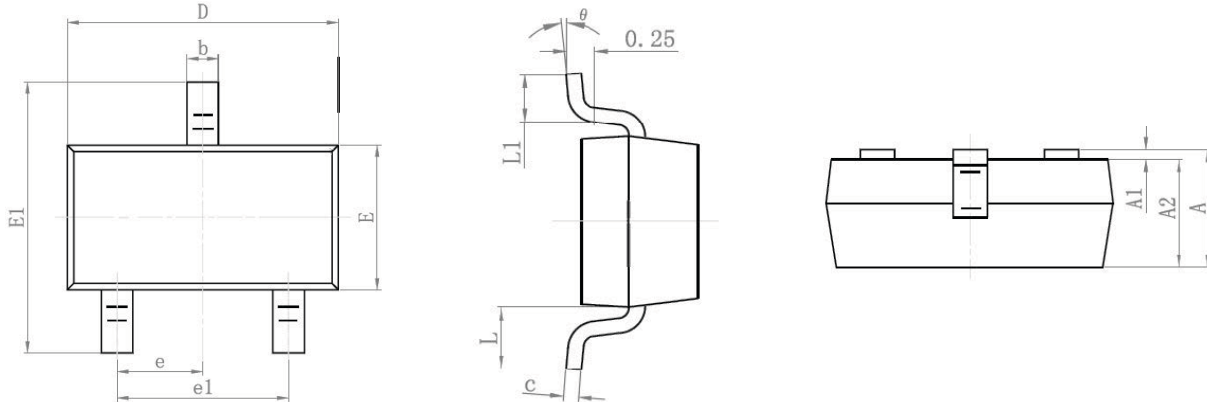


**Figure 2. Switching Waveforms**



**Figure 3. Normalized Maximum Transient Thermal Impedance**

**Package Outline Dimensions (SOT-23)**

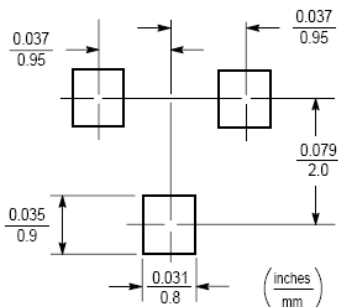


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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°

Notes:

1. Tolerance ±0.10mm (4 mil) unless otherwise specified.
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
3. Dimension L is measured in gauge plane.

**Recommended Pad Layout**



## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View SSF2318E on WIN SOURCE](#)
- ⊖ [GOOD-ARK Electronics Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management