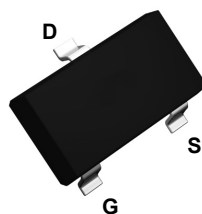
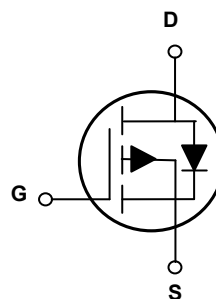


Main Product Characteristics

$V_{(BR)DSS}$	-12V
$R_{DS(ON)}$	51m Ω (Max.)
I_D	-4.5A



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 SSF1341 utilizes the latest techniques to achieve ultra high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in battery protection, load switch, power management and a wide variety of other applications.

Absolute Maximum Ratings (T_C=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous, T _C =25°C	I_D	-4.5	A
Drain Current-Continuous, T _C =100°C		-3	
Drain Current-Pulsed ¹	I_{DM}	-17	A
Power Dissipation, T _C =25°C	P_D	1.56	W
Power Dissipation - Derate Above 25°C		0.012	W/°C
Max. Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	80	°C/W
Operating Junction Temperature Range	T_J	-55 To +150	°C
Storage Temperature Range	T_{STG}	-55 To +150	°C

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-20	-	-	V
BV _{DSS} Temperature Coefficient	△BV _{DSS} /△T _J	Reference to 25°C, I _D =-1mA	-	-0.02	-	V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _J =25°C	-	-	-1	uA
		V _{DS} =-16V, V _{GS} =0V, T _J =125°C	-	-	-10	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V	-	-	±100	nA
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-4A	-	39	51	mΩ
		V _{GS} =-2.5V, I _D =-2A	-	49	67	
		V _{GS} =-1.8V, I _D =-1A	-	69	85	
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =-250uA	-0.4	-0.65	-0.9	V
V _{GS(th)} Temperature Coefficient	△V _{GS(th)}		-	2	-	mV/°C
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _S =-3A	-	7	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2,3}	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-3A	-	10.1	13	nC
Gate-Source Charge ^{2,3}	Q _{gs}		-	1.7	2	
Gate-Drain Charge ^{2,3}	Q _{gd}		-	2.1	4	
Turn-On Delay Time ^{2,3}	T _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V, R _G =25Ω, I _D =-1A	-	6.2	11	nS
Rise Time ^{2,3}	T _r		-	21.4	41	
Turn-Off Delay Time ^{2,3}	T _{d(off)}		-	50	97	
Fall Time ^{2,3}	T _f		-	13.6	26	
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, F=1MHz	-	950	1230	pF
Output Capacitance	C _{oss}		-	75	100	
Reverse Transfer Capacitance	C _{rss}		-	58	80	
Source-Drain Ratings and Characteristics						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	-	-	-4.5	A
Pulsed Source Current	I _{SM}		-	-	-17	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A, T _J =25°C	-	-	-1	V

Notes:

1. Repetitive Rating: Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed, pulse width $\leq 300\mu S$, duty cycle $\leq 2\%$.
3. Essentially independent of operating temperature.

Typical Electrical and Thermal Characteristic Curves

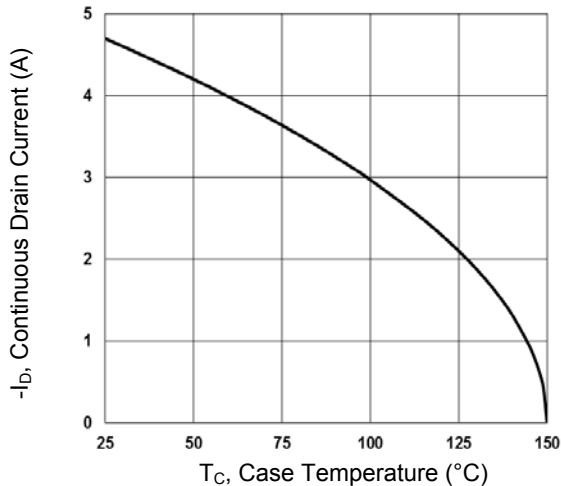


Figure 1. Continuous Drain Current vs. T_C

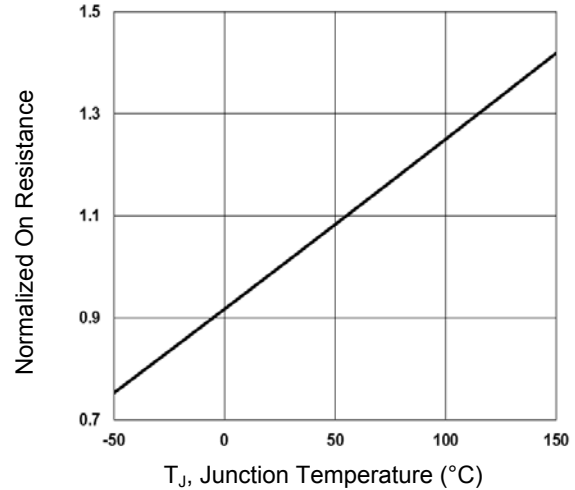


Figure 2. Normalized $R_{DS(ON)}$ vs. T_J

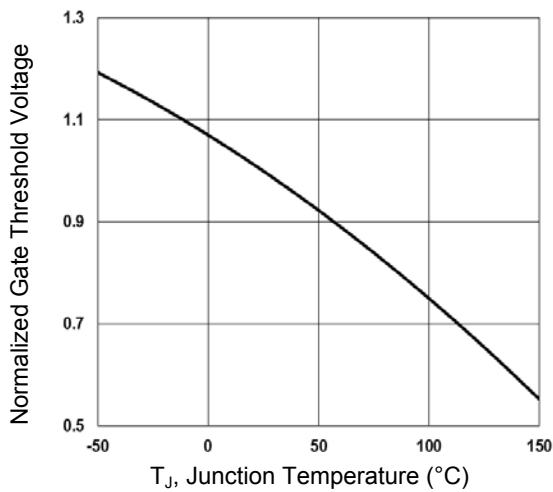


Figure 3. Normalized V_{th} vs. T_J

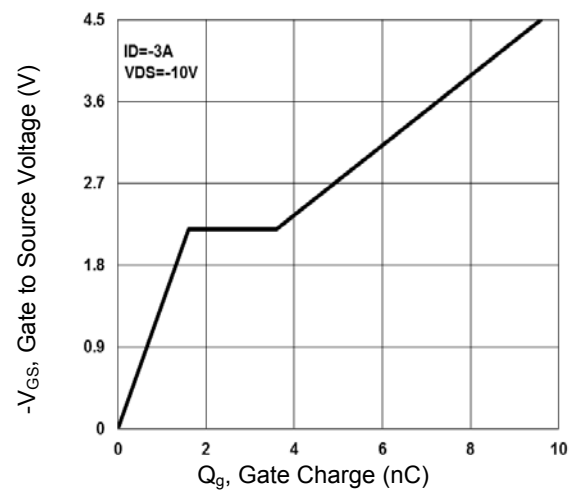


Figure 4. Gate Charge Waveform

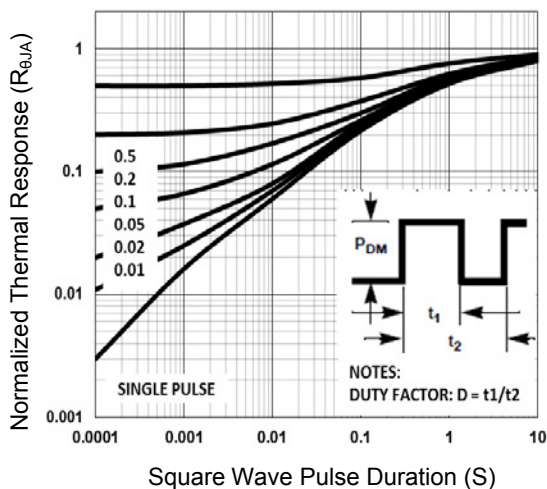


Figure 5. Normalized Transient Response

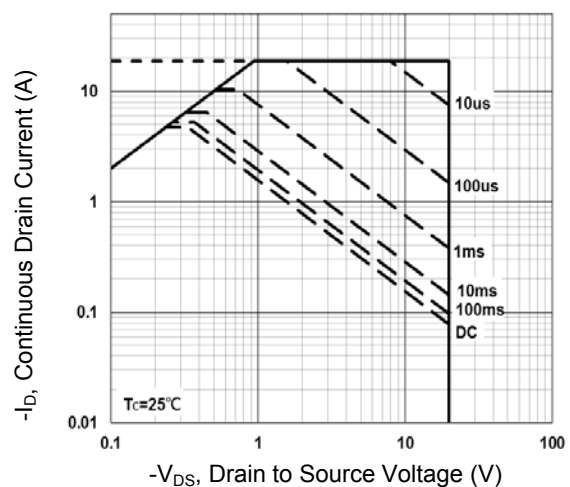
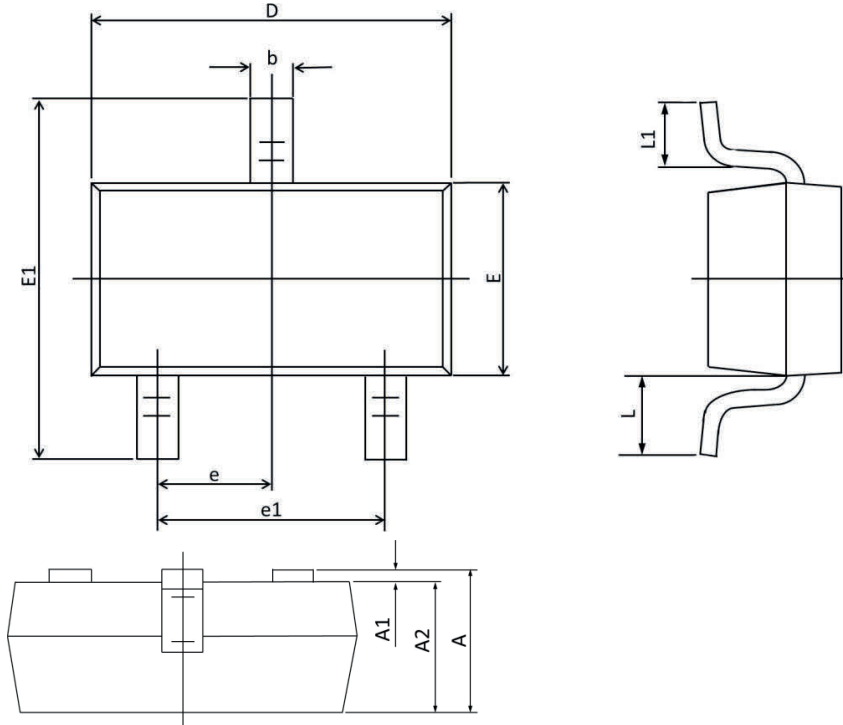


Figure 6. Maximum Safe Operation Area

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.047
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
D	2.800	3.040	0.110	0.120
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.55 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020

Order Information

Device	Package	Marking	Carrier	Quantity
SSF1341	SOT-23	SSF3EG	Tape & Reel	3,000pcs / Reel