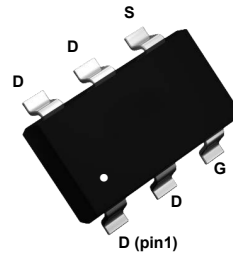
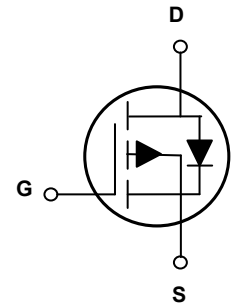


Main Product Characteristics

$V_{(BR)DSS}$	-20V
$R_{DS(ON)}$	23m Ω (Max.)
I_D	-6.7A



SOT-23-6L



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for notebook, load switch and networking
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SSF2307 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	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current-Continuous ($T_C=25^\circ\text{C}$)	I_D	-6.7	A
Drain Current-Continuous ($T_C=100^\circ\text{C}$)		-4.3	A
Drain Current-Pulsed ¹	I_{DM}	-26.8	A
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	1.6	W
Power Dissipation-Derate Above 25 $^\circ\text{C}$		0.013	W/ $^\circ\text{C}$
Max. Thermal Resistance Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (T_J=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-20	-	-	V
BV _{DSS} Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =-1mA	-	-0.01	-	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	uA
On Characteristics						
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-5A	-	15	23	mΩ
		V _{GS} =-2.5V, I _D =-4A	-	21	30	
		V _{GS} =-1.8V, I _D =-3A	-	30	39	
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =-250uA	-0.3	-0.6	-1.0	V
V _{GS(th)} Temperature Coefficient	ΔV _{GS(th)}		-	3	-	mV/°C
Forward Transconductance	g _{fs}	V _{DS} =-10V, I _S =-5A	-	15	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ^{2,3}	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-5A	-	19.5	29	nC
Gate-Source Charge ^{2,3}	Q _{gs}		-	2	4	
Gate-Drain Charge ^{2,3}	Q _{gd}		-	3.6	7	
Turn-On Delay Time ^{2,3}	T _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V, R _G =25Ω, I _D =-1A	-	10.4	20	nS
Rise Time ^{2,3}	T _r		-	37.5	71	
Turn-Off Delay Time ^{2,3}	T _{d(off)}		-	89.1	129	
Fall Time ^{2,3}	T _f		-	24.6	47	
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, F=1MHz	-	1670	2430	pF
Output Capacitance	C _{oss}		-	220	320	
Reverse Transfer Capacitance	C _{rss}		-	120	180	
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current	-	-	-6.5	A
Pulsed Source Current	I _{SM}		-	-	-26	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 ≤ 300uS, duty cycle ≤ 2%.
3. Essentially independent of operating temperature.

Typical Electrical and Thermal Characteristic Curves

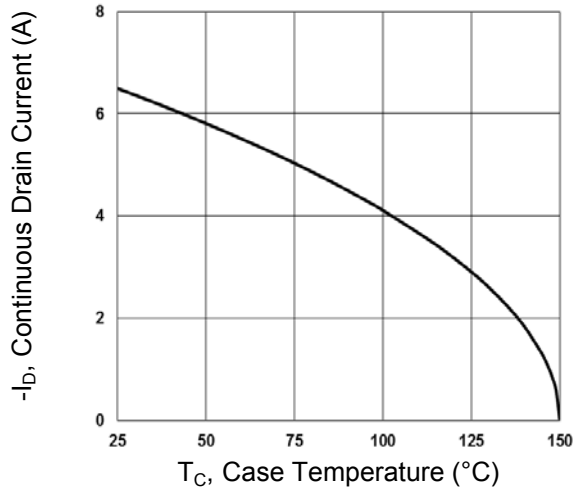


Figure 1. Continuous Drain Current vs. T_c

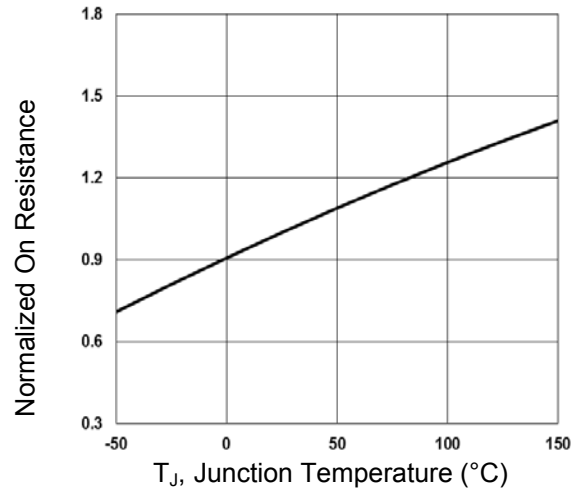


Figure 2. Normalized $R_{DS(ON)}$ vs. T_j

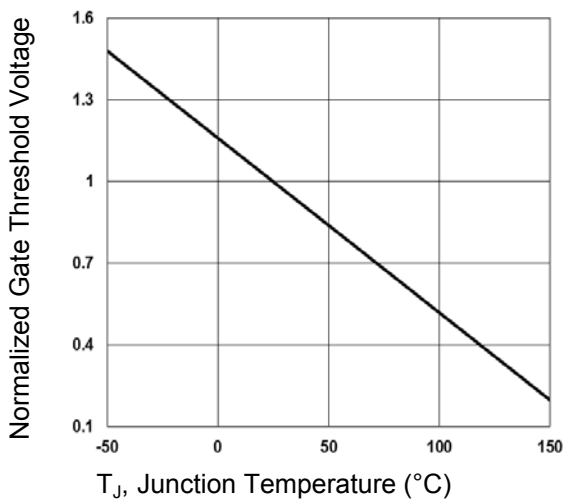


Figure 3. Normalized V_{th} vs. T_j

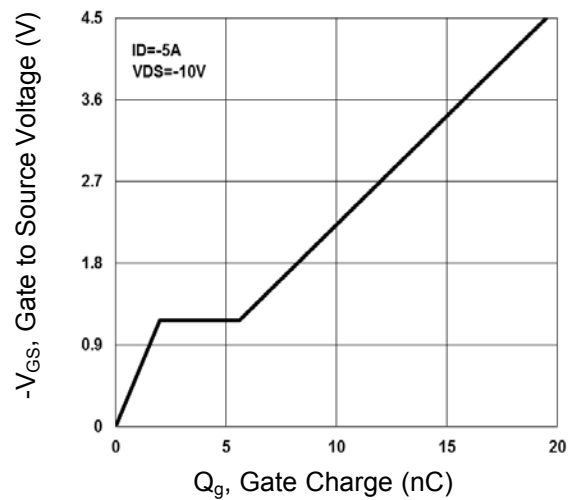


Figure 4. Gate Charge Waveform

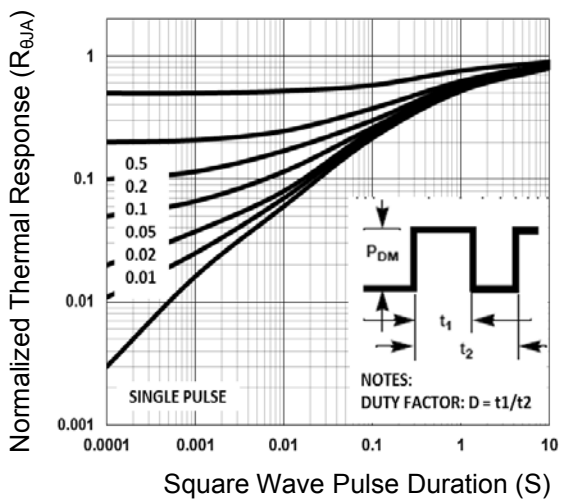


Figure 5. Normalized Transient Impedance

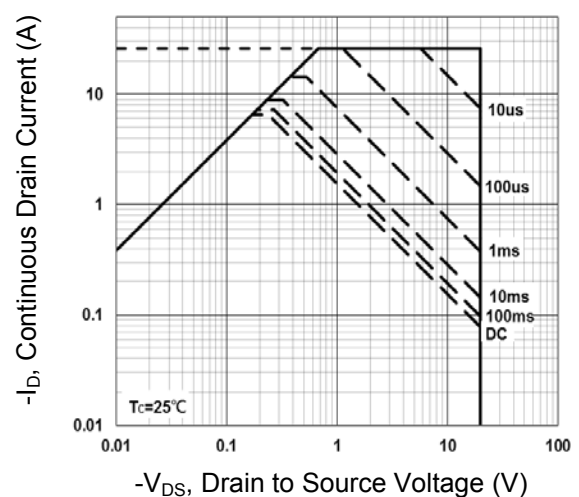
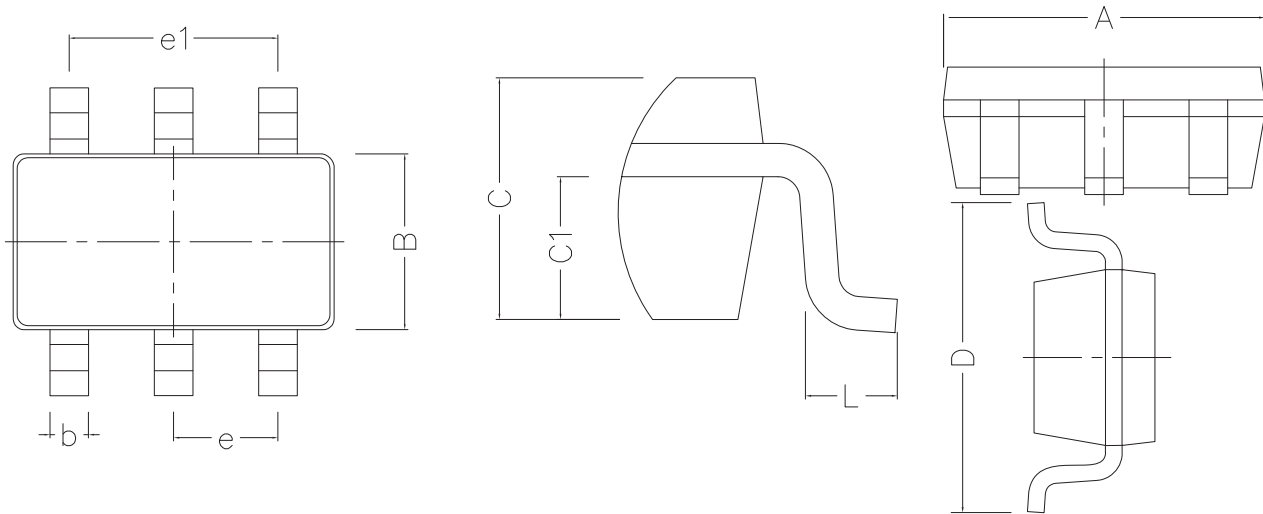


Figure 6. Maximum Safe Operation Area

Package Outline Dimensions (SOT-23-6L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.82	3.02	0.111	0.119
B	1.50	1.70	0.059	0.067
C	1.05	1.15	0.041	0.045
C1	0.60	0.70	0.024	0.028
D	2.65	2.95	0.104	0.116
L	0.30	0.60	0.012	0.024
b	0.28	0.42	0.011	0.017
e	0.95 TYP		0.037 TYP	
e1	1.90 TYP		0.075 TYP	

Order Information

Device	Package	Marking	Packaging	SPQ
SSF2307	SOT-23-6L	U	Tape & Reel	3,000 pcs / Reel