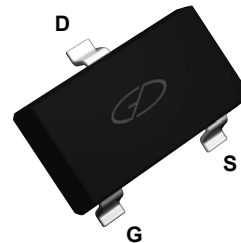
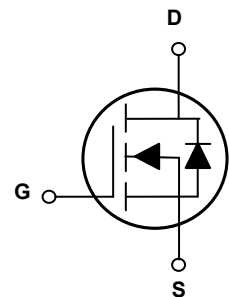


Main Product Characteristics

$V_{(BR)DSS}$	30V
$R_{DS(ON)}$	34m Ω (max.)
I_D	5.6A



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 SSF3324 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 supply 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}	30	V
Gate-to-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current, @ Steady-State ($T_A=25^\circ\text{C}$) ¹	I_D	5.6	A
Continuous Drain Current, @ Steady-State ($T_A=70^\circ\text{C}$)		4.5	A
Pulsed Drain Current ²	I_{DM}	23	A
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	1.15	W
Linear Derating Factor ($T_A=25^\circ\text{C}$)		0.012	W/ $^\circ\text{C}$
Junction-to-Ambient (PCB Mounted, Steady-State) ³	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J/T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Drain-to-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
		T _J =125°C	-	-	50	
Gate-to-Source Forward Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =12V	-	-	100	nA
		V _{DS} =0V, V _{GS} =-12V	-	-	-100	
Static Drain-to-Source On-Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =2A	-	25	34	mΩ
		V _{GS} =2.5V, I _D =1.5A	-	33	40	
		V _{GS} =1.8V, I _D =1A	-	51	60	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.64	0.88	1.5	V
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	538	-	pF
Output Capacitance	C _{oss}		-	130	-	
Reverse Transfer Capacitance	C _{rss}		-	36	-	
Total Gate Charge	Q _g	I _D =5.6A, V _{DS} =15V, V _{GS} =4.5V	-	4.8	-	nC
Gate-to-Source Charge	Q _{gs}		-	1.2	-	
Gate-to-Drain ("Miller") Charge	Q _{gd}		-	1.7	-	
Turn-on Delay Time	t _{d(on)}	V _{GS} =4.5V, V _{DS} =15V, R _{GEN} =2.8Ω, R _L =15Ω, I _D =1A	-	12	-	nS
Rise Time	t _r		-	52	-	
Turn-Off Delay Time	t _{d(off)}		-	17	-	
Fall Time	t _f		-	10	-	
Source-Drain Ratings and Characteristics						
Continuous Source Current (Body Diode)	I _S	MOSFET symbol showing the integral reverse p-n junction diode.	-	-	5.6	A
Diode Forward Voltage	V _{SD}	I _S =2.5A, V _{GS} =0V	-	-	1.2	V
Reverse Recovery Time	T _{rr}	T _J =25°C, I _F =5.0A, di/dt=100A/μs	-	10.8	-	nS
Reverse Recovery Charge	Q _{rr}		-	5.4	-	uC

Notes:

1. Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
2. Repetitive rating; pulse width limited by max. junction temperature.
3. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Electrical and Thermal Characteristic Curves

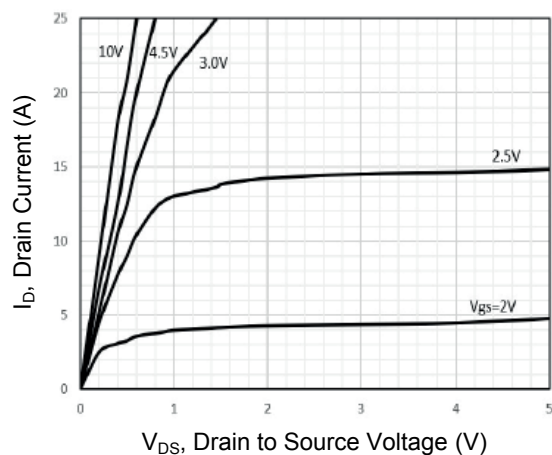


Figure 1. Typical Output Characteristics

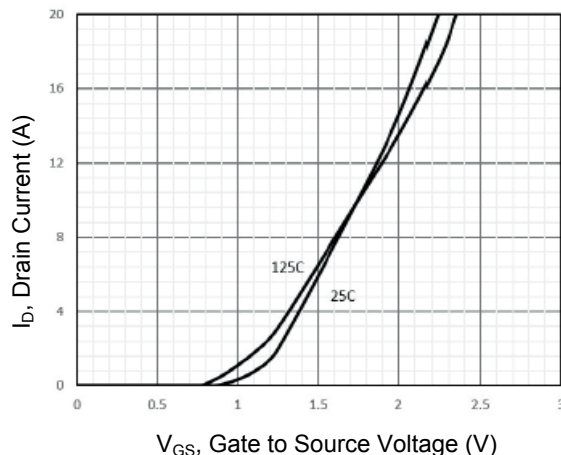


Figure 2. Typical Transfer Characteristics

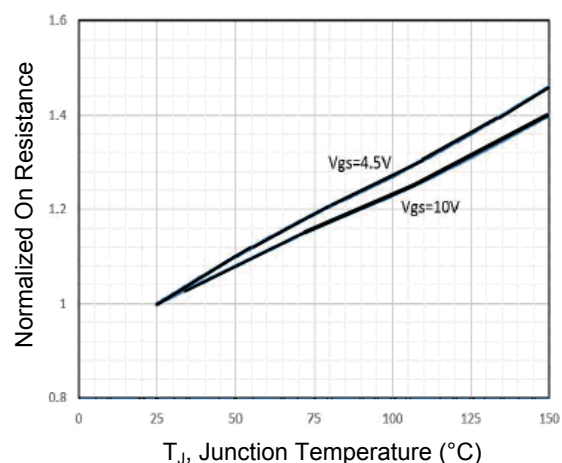


Figure 3. Normalized $R_{DS(ON)}$ vs. T_J

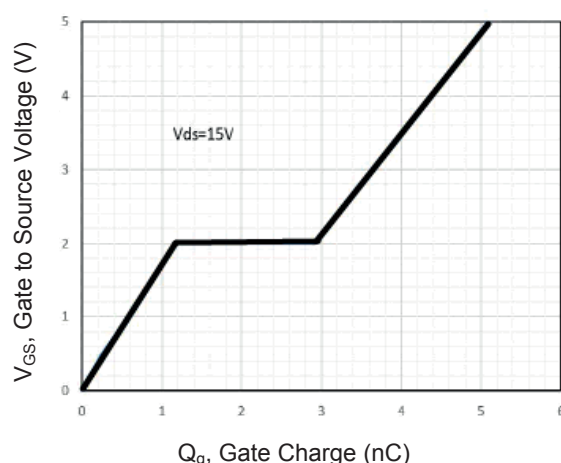


Figure 4. Gate Charge

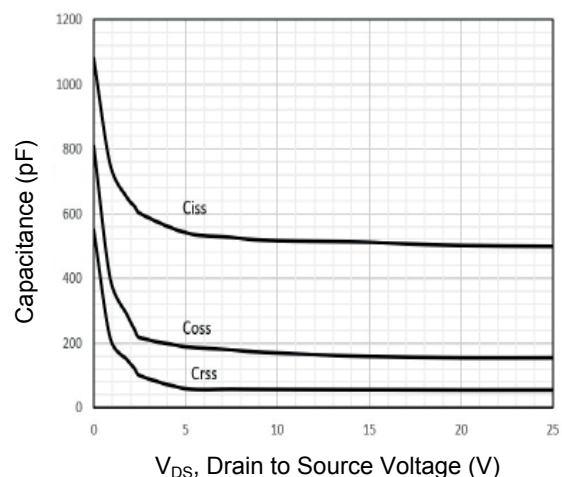


Figure 5. Capacitance Characteristics

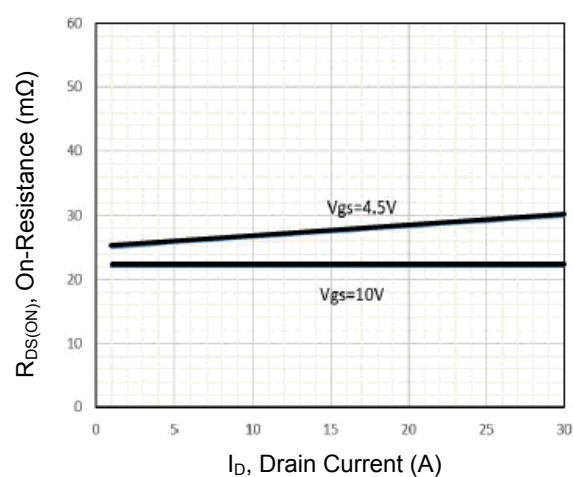
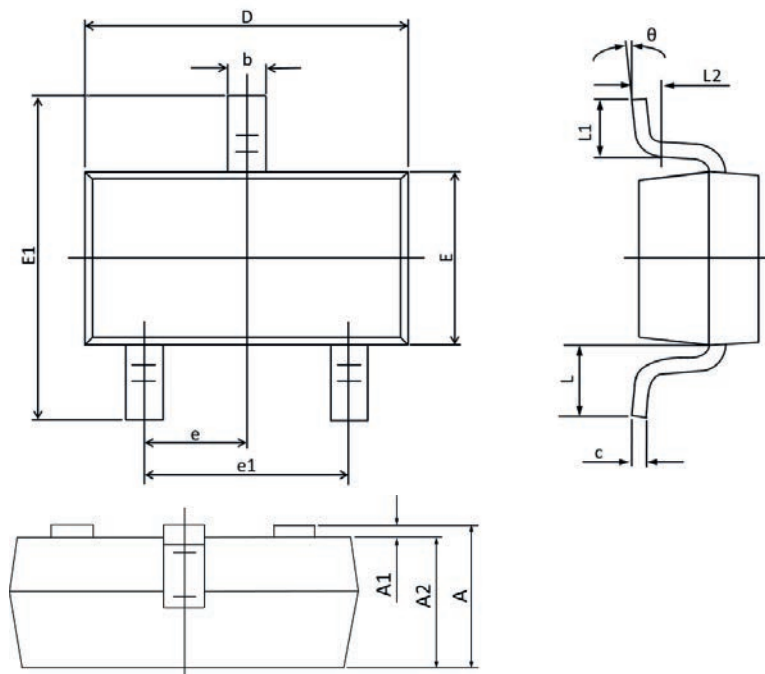


Figure 6. Typical Drain-Source on-Resistance

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	1.250	1.840	0.049	0.072
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
L2	0.25 TYP.		0.01 TYP.	
θ	0°	8°	0°	8°

Order Information

Device	Package	Marking	Carrier	Quantity
SSF3324	SOT-23	3324	Tape & Reel	3,000 pcs / Reel