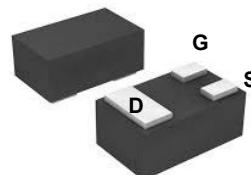
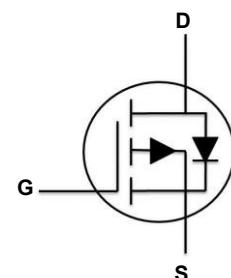


Main Product Characteristics

$V_{(BR)DSS}$	-20V
$R_{DS(ON)}$	180mΩ @ 4.5V
	190mΩ @ 3.3V
I_D	-1.5A



SOT-883



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 GSFW02011 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 Breakdown Voltage	$V_{(BR)DSS}$	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current-Continuous ($T_A=25^\circ\text{C}$)	I_D	-1.5	A
Drain Current-Continuous ($T_A=70^\circ\text{C}$)		-1.2	
Drain Current-Pulsed ($T_A=25^\circ\text{C}$) ¹	I_{DM}	-6	A
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	0.3	W
Power Dissipation ($T_A=70^\circ\text{C}$)		0.24	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	400	°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°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _A =25°C	-	-	-1	μA
		V _{DS} =-16V, V _{GS} =0V, T _A =125°C	-	-	-100	nA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V	-	-	±100	nA
Static Drain-Source On-Resistance ²	R _{DSON}	V _{GS} =-4.5V, I _D =-0.75A	-	-	200	mΩ
		V _{GS} =-3.3V, I _D =-0.5A	-	-	210	
		V _{GS} =-2.5V, I _D =-0.3A	-	-	230	
		V _{GS} =-1.8V, I _D =-0.1A	-	-	260	
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =-250μA	-0.35	-0.6	-1	V
Dynamic and Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-0.5A V _{GS} =-4.5V	-	2.2	-	nC
Gate-Source Charge	Q _{gs}		-	0.6	-	
Gate-Drain Charge	Q _{gd}		-	0.5	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =-10V, R _G =3.3Ω, V _{GS} =-4.5V, I _D =-0.5A	-	16	-	nS
Rise Time	t _r		-	32	-	
Turn-Off Delay Time	t _{d(off)}		-	85	-	
Fall Time	t _f		-	68	-	
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, F=1MHz	-	169	-	pF
Output Capacitance	C _{oss}		-	39	-	
Reverse Transfer Capacitance	C _{rss}		-	26	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Diode Forward Voltage ²	V _{SD}	V _{GS} =0V, I _{SD} =-0.3A, T _J =25°C	-	-0.82	-1.2	V

Note:

1. Repetitive rating: Pulsed width limited by maximum junction temperature.
2. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%.

Typical Electrical and Thermal Characteristic Curves

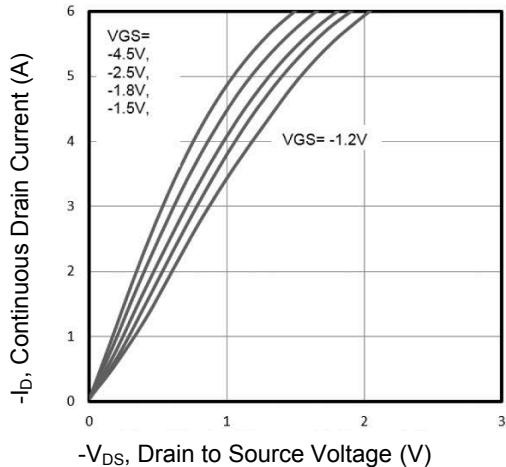


Figure 1. Typical Output Characteristics

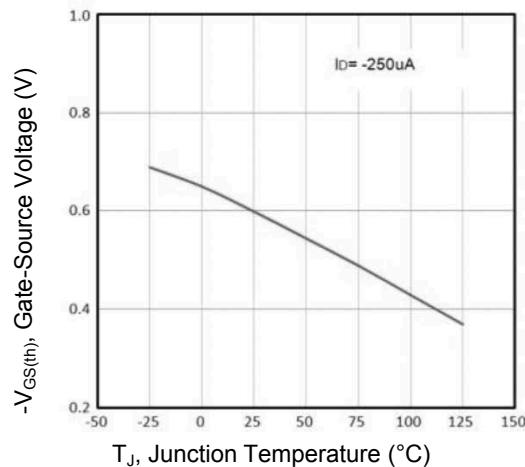


Figure 2. Normalized Threshold Voltage vs. T_J

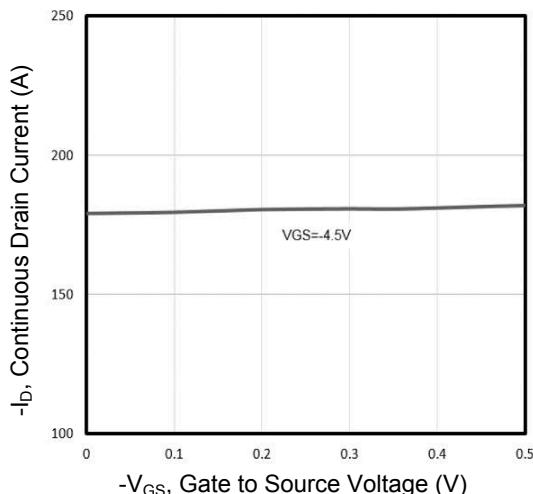


Figure 3. Typical Transfer Characteristics

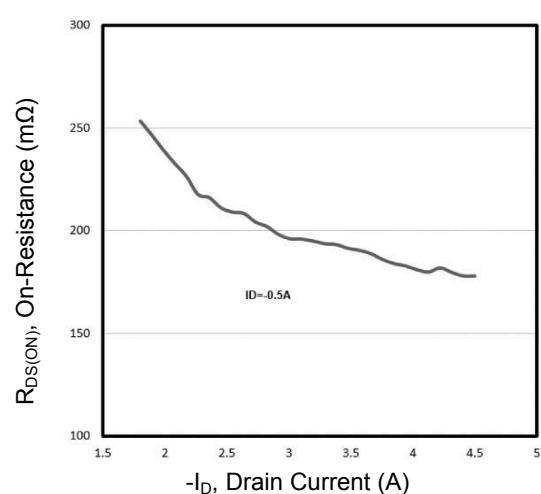


Figure 4. On-Resistance vs. Drain Current and Gate

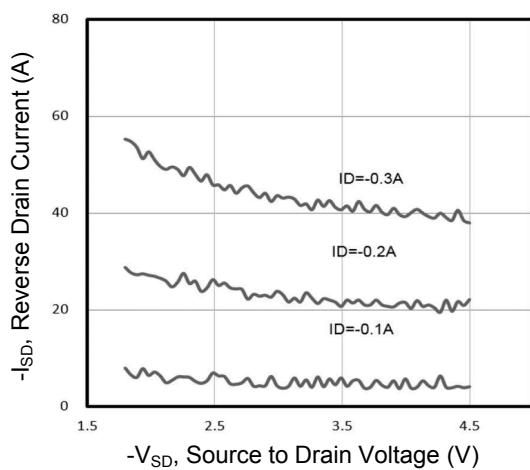


Figure 5. Typical Source-Drain Diode Forward Voltage

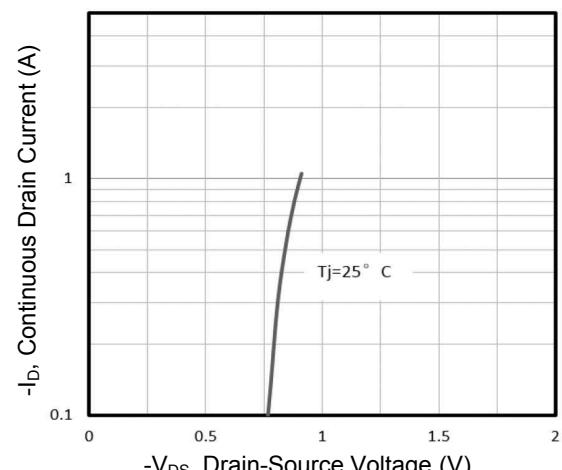


Figure 6. Maximum Safe Operating Area

Typical Electrical and Thermal Characteristic Curves

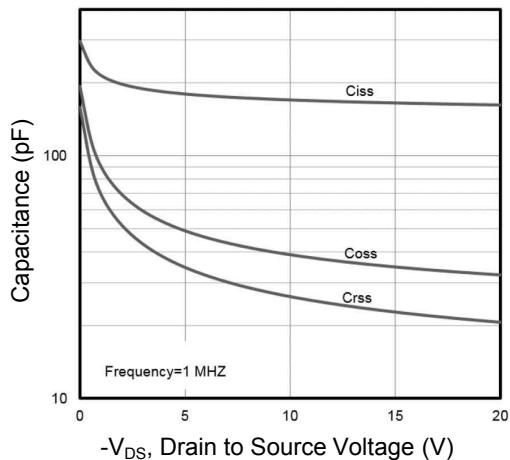


Figure 7. Capacitance Characteristics

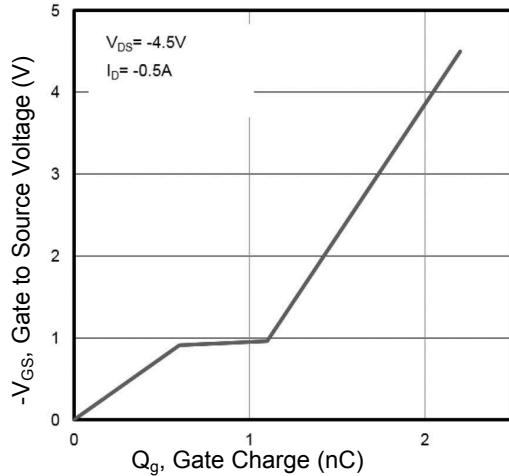
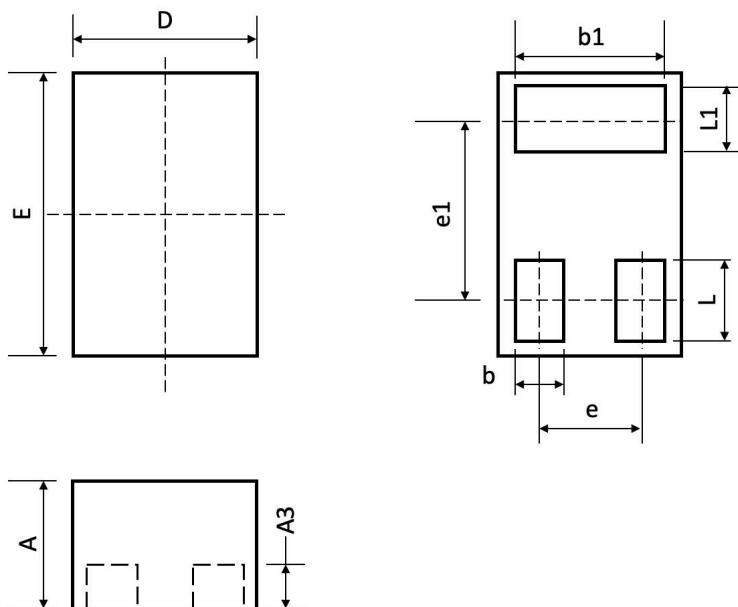


Figure 8. Gate Charge Characteristics

Package Outline Dimensions (SOT-883)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.400	0.500	0.016	0.020
A3	0.127 BSC			0.005 BSC
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
e	0.35 BSC			0.014 BSC
e1	0.65 BSC			0.026 BSC
b	0.130	0.180	0.005	0.007
b1	0.450	0.550	0.018	0.022
L	0.200	0.300	0.008	0.012
L1	0.200	0.300	0.008	0.012

Order Information

Device	Package	Marking	Carrier	Quantity
GSFW02011	SOT-883	P3	Tape & Reel	10,000 pcs / Reel