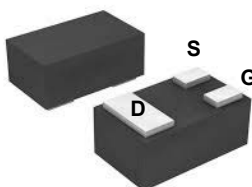
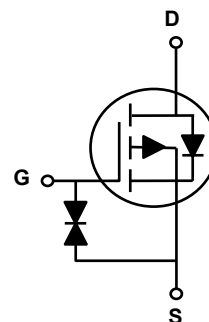


Main Product Characteristics

BV_{DSS}	-50V
$R_{DS(ON)}$	6Ω (max.)
I_D	-130mA



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 GSFW0501 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 ($T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous ($T_A=25^{\circ}C$)	I_D	-130	mA
Drain Current-Pulsed ⁴	I_{DM}	-520	mA
Power Dissipation ($T_A=25^{\circ}C$) ¹	P_D	0.15	W
Power Dissipation-Derate above 25°C		0.0012	W/°C
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	834	°C/W
Operating Junction Temperature Range	T_J	-55 To +150	°C
Storage Temperature Range	T_{STG}	-55 To +150	°C

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On/Off Characteristics²						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-50	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 10	μA
Static Drain-Source On-Resistance ³	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-0.13A$	-	3.5	6.0	Ω
		$V_{GS}=-5V, I_D=-0.1A$	-	4.0	8.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	-1.0	-1.7	-3.0	V
Dynamic and Switching Characteristics³						
Input Capacitance	C_{iss}	$V_{DS}=-20V, V_{GS}=0V, F=1\text{mHz}$	-	32	-	pF
Output Capacitance	C_{oss}		-	16	-	
Reverse Transfer Capacitance	C_{rss}		-	4	-	
Gate Resistance	R_g	$V_{GS}=0V, V_{DS}=-15\text{mV}, F=1\text{mHz}$	-	945	-	Ω
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current ²	I_S	$T_C=25^{\circ}\text{C}$	-	-	-0.3	A
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=-0.26A$	-	-0.8	-1.4	V

Note:

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

Typical Electrical and Thermal Characteristic Curves

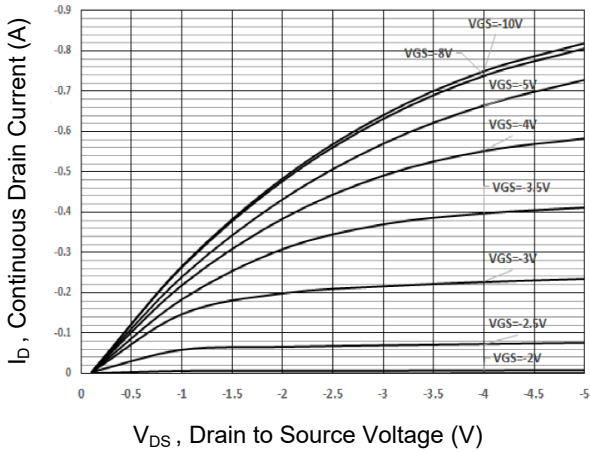


Figure 1. Output Characteristics

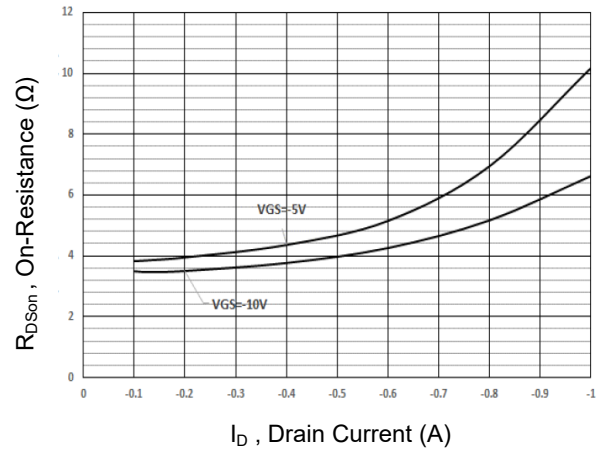


Figure 2. On Resistance vs. I_D

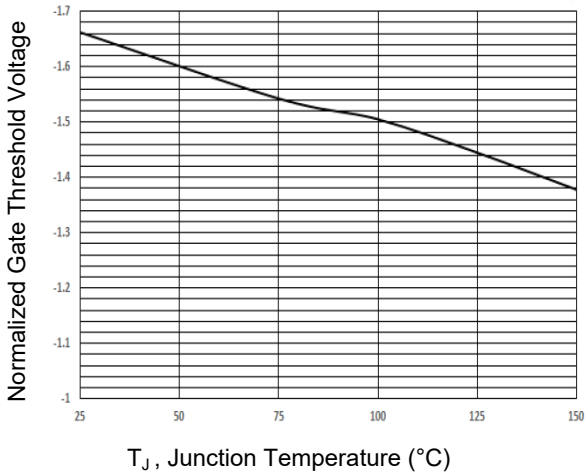


Figure 3. Normalized V_{th} vs. T_J

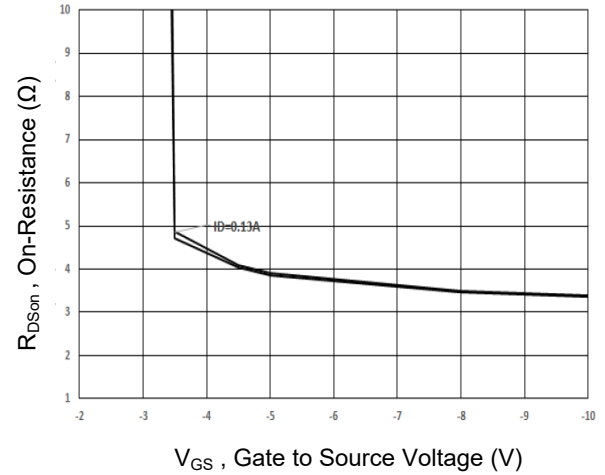


Figure 4. On Resistance vs. V_{GS}

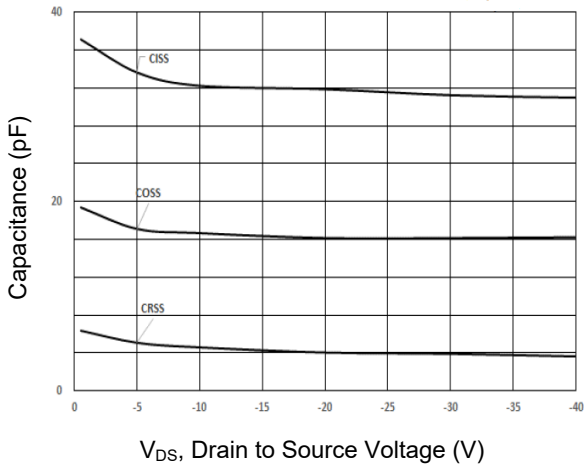


Figure 5. Capacitance Characteristics

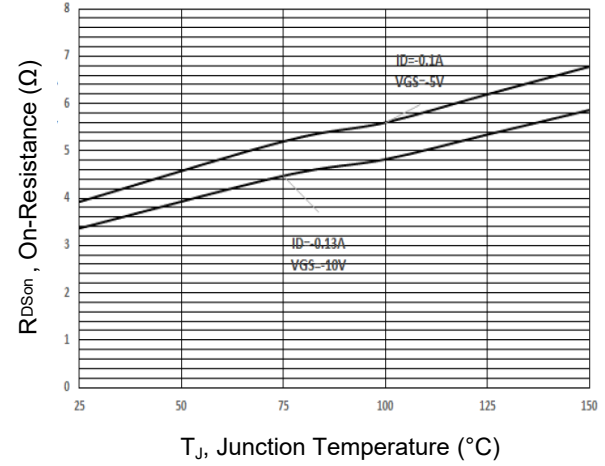
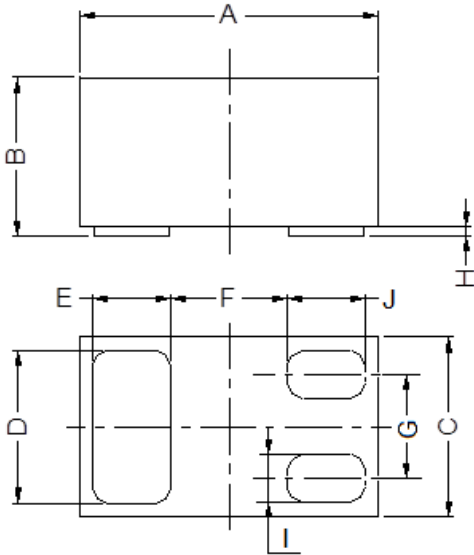


Figure 6. On Resistance vs. T_J

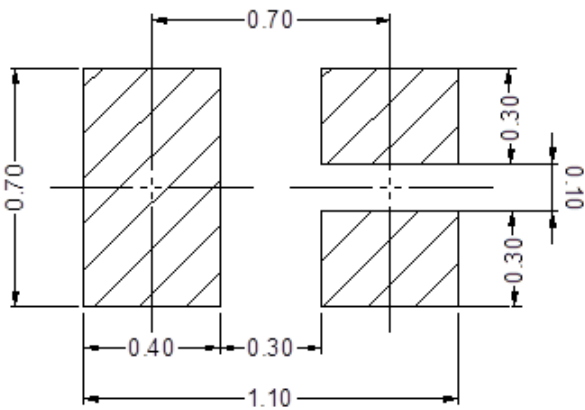
Package Outline Dimensions



SOT-883

SOT-883			
Dim	Min	Typ	Max
A	0.95	1.00	1.075
B	0.47	0.50	0.53
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E/J	0.20	0.25	0.30
F	-	0.40	-
G	-	0.35	-
H	0	0.03	0.05
I	0.10	0.15	0.20

Recommended Pad Layout



(Unit in mm)