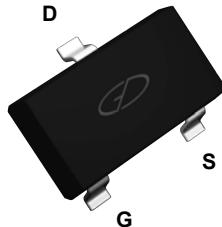
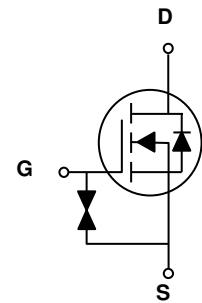


Main Product Characteristics

V_{DS}	30V
$R_{DS(ON)}$	500mΩ
I_D	600mA



SOT-323



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 GSEW0300 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-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous($T_A=25^\circ\text{C}$)	I_D	600	mA
Drain Current-Continuous($T_A=70^\circ\text{C}$)		478	
Drain Current-Pulsed ¹	I_{DM}	2.4	A
Power Dissipation($T_A=25^\circ\text{C}$)	P_D	0.2	W
Thermal Resistance, Junction-to-Ambient ²	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
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 ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics²						
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}}=0\text{V}, I_D=250\mu\text{A}$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=30\text{V}, V_{\text{GS}}=0\text{V}$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{\text{GS}}=\pm 10\text{V}, V_{\text{DS}}=0\text{V}$	-	-	± 3	μA
Gate Threshold Voltage ³	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}}=V_{\text{GS}}, I_{\text{DS}}=250\mu\text{A}$	0.5	1	1.5	V
Drain-Source On-Resistance ³	$R_{\text{DS}(\text{ON})}$	$V_{\text{GS}}=4.5\text{V}, I_D=0.6\text{A}$	-	320	500	$\text{m}\Omega$
		$V_{\text{GS}}=2.5\text{V}, I_D=0.3\text{A}$	-	410	600	
Forward Transconductance	g_{fs}	$V_{\text{DS}}=5\text{V}, I_D=0.5\text{A}$	0.1	-	-	S
Dynamic and Switching Characteristics⁴						
Input Capacitance	C_{iss}	$V_{\text{DS}}=10\text{V}, V_{\text{GS}}=0\text{V}, F=1\text{MHz}$	-	44	-	PF
Output Capacitance	C_{oss}		-	15	-	
Reverse Transfer Capacitance	C_{rss}		-	8	-	
Total Gate Charge	Q_g	$V_{\text{DS}}=15\text{V}, I_D=0.8\text{A}, V_{\text{GS}}=4.5\text{V}$	-	1.2	-	nC
Gate-Source Charge	Q_{gs}		-	0.28	-	
Gate-Drain Charge	Q_{gd}		-	0.3	-	
Turn-On Delay Time	$t_{\text{d}(\text{on})}$	$V_{\text{DS}}=15\text{V}, R_G=51\Omega, V_{\text{GS}}=4.5\text{V}, I_D=0.7\text{A}$	-	5	-	nS
Turn-On Rise Time	t_r		-	8.2	-	
Turn-Off Delay Time	$t_{\text{d}(\text{off})}$		-	23	-	
Turn-Off Fall Time	t_f		-	41	-	
Source-Drain Diode characteristics						
Diode Forward Voltage ³	V_{DS}	$V_{\text{GS}}=0\text{V}, I_s=0.6\text{A}$	-	0.87	1.2	V

Notes:

- Repetitive Rating: Pulse width limited by maximum junction temperature.
- This test is performed with no heat sink at $T_A=25^\circ\text{C}$.
- Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.
- These parameters have no way to verify.

Typical Electrical and Thermal Characteristic Curves

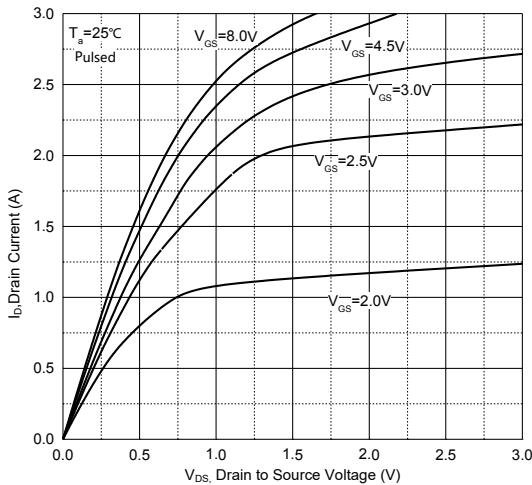


Figure 1. Output Characteristics

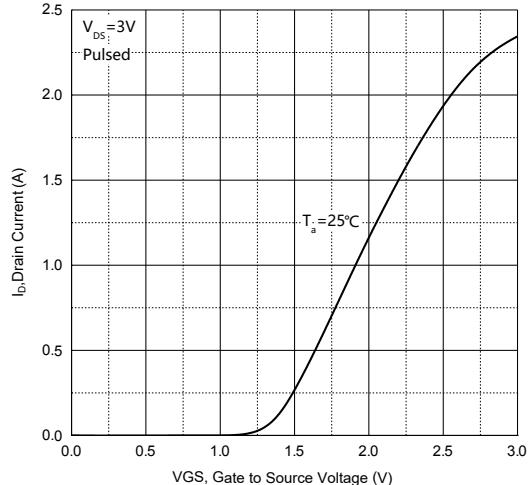


Figure 2. Transfer Characteristics

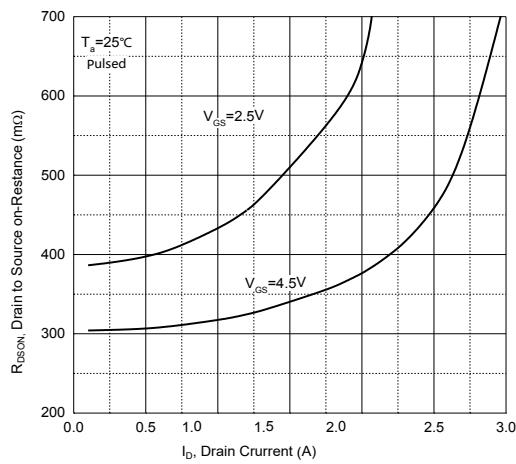


Figure 3. Drain-Source on Resistance vs I_D

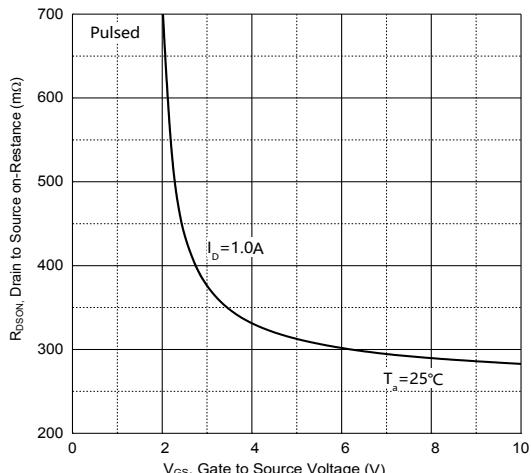


Figure 4. Drain-Source on Resistance vs V_{GS}

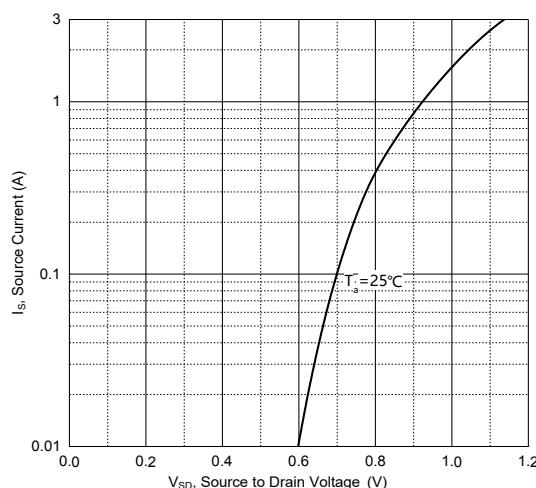


Figure 5. Body Diode Characteristics

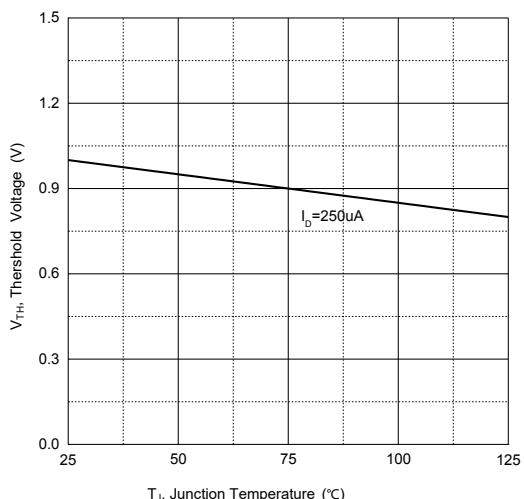
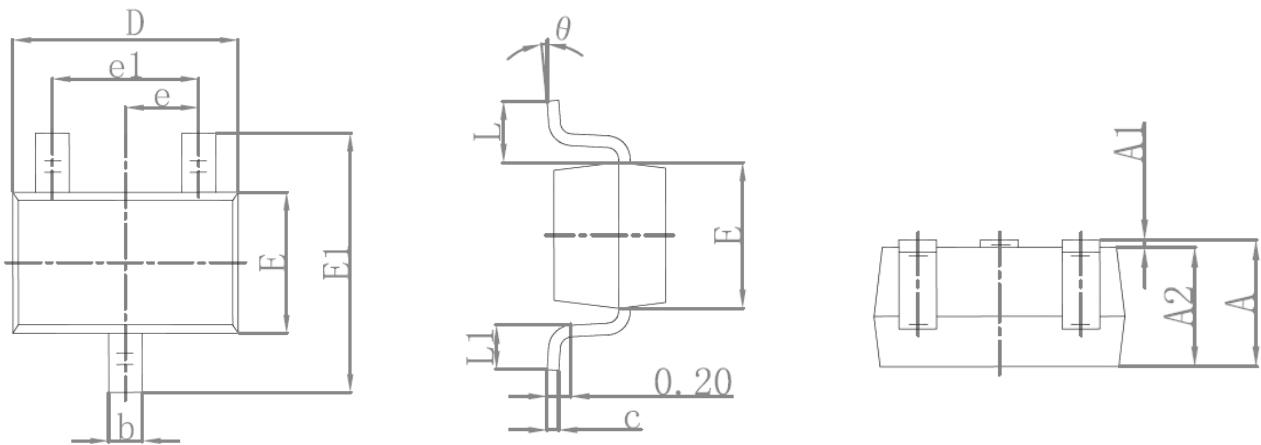


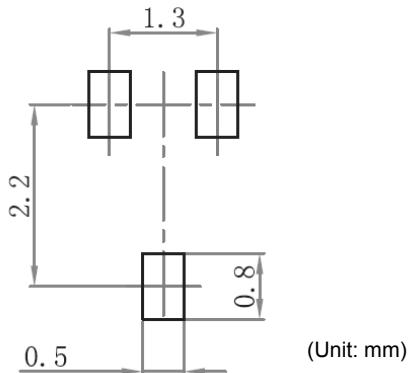
Figure 6. V_{TH} vs Junction Temperature

Package Outline Dimensions (SOT-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
K	0°	8°	0°	8°

Recommended Pad Layout



Order Information

Device	Package	Marking Code	Carrier	Quantity	HSF Status
GSFW0300	SOT-323	S	Tape & Reel	3000/Reel	RoHS Compliant