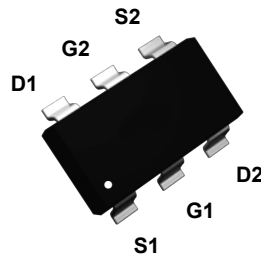
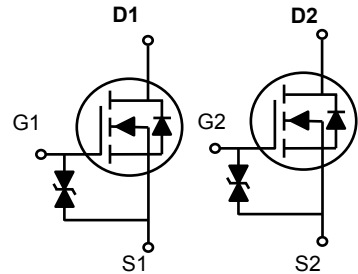


Main Product Characteristics

V_{DS}	60V
$R_{DS(ON)}$	5.3Ω
I_D	340mA



SOT-363



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switch mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The GSF7002DW 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}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	340	mA
Power Dissipation	P_D	150	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$
Storage Temperature Range	T_{STG}	-55 To +150	$^{\circ}\text{C}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} =0V I _D =250μA	60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±10	μA
On Characteristics						
Gate Threshold Voltage ¹	V _{GS(th)}	V _{DS} =V _{GS} , I _D =1mA	1	1.3	2.5	V
Drain-Source On-Resistance ¹	R _{DS(ON)}	V _{GS} =10V, I _D =500mA	-	0.9	5	Ω
		V _{GS} =4.5V, I _C =200mA	-	1.1	5.3	
Dynamic and Switching Characteristics						
Input Capacitance ²	C _{iss}	V _{DS} =10V, V _{GS} =0V, F=1.0MHz	-	-	40	PF
Output Capacitance ²	C _{oss}		-	-	30	
Reverse Transfer Capacitance ²	C _{rss}		-	-	10	
Turn-On Time ²	t _{d(on)}	V _{DD} =50V, R _L =250Ω V _{GS} =10V, R _{GS} =50Ω, R _G =50Ω	-	-	10	nS
Turn-Off Time ²	t _{d(off)}		-	-	15	
Reverse Recovery Time	t _{rr}	V _{GS} =0V, I _S =300mA, V _R =25V, Dis/dt=-100a/μS	-	30	-	nS
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =300mA	-	-	1.5	V
Gate-Source Diode Characteristics						
Gate-Source Breakdown Voltage	BV _{GSO}	I _{gs} =±1mA(Open Drain)	±21.5	-	±30	V

Note:

1. Pulse Test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design.

Ratings and Characteristic Curves

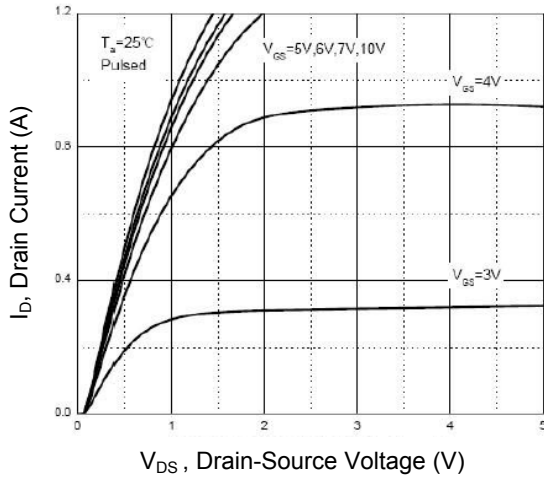


Figure 1. Typical Output Characteristics

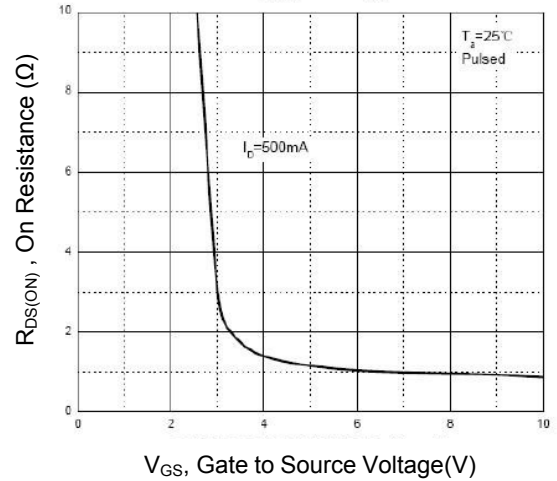


Figure 2. On-Resistance $R_{DS(on)}$ vs. V_{GS}

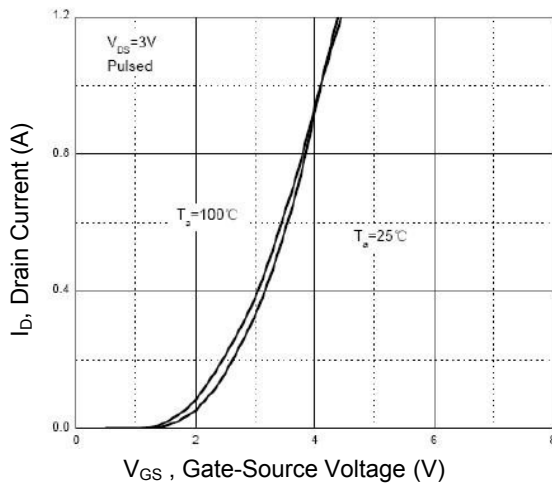


Figure 3. Transfer Characteristics

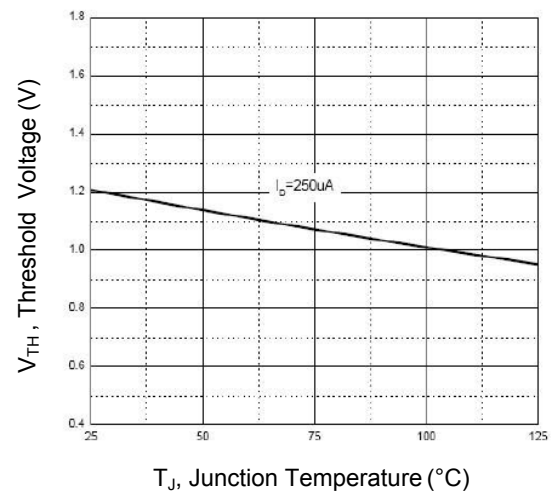


Figure 4. Threshold Voltage

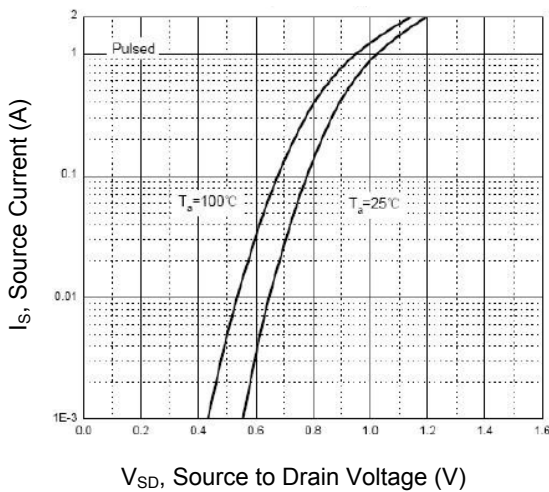


Figure 5. Source Current vs. V_{SD}

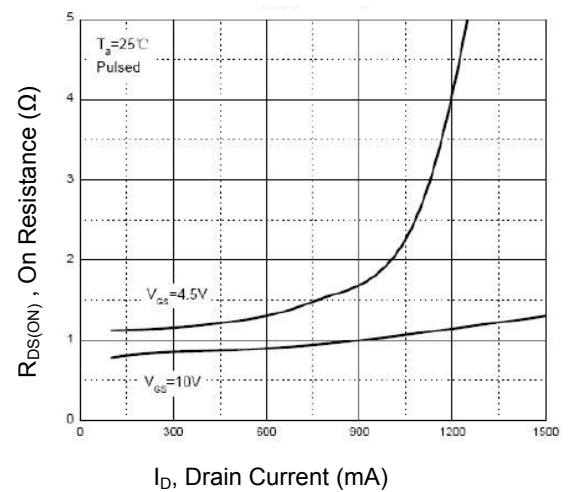
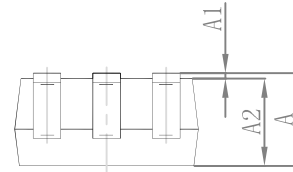
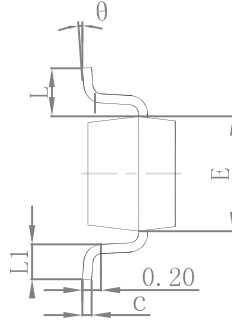
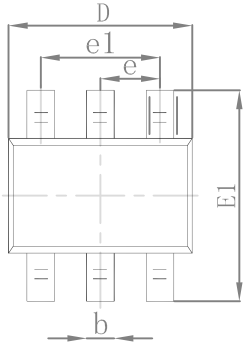


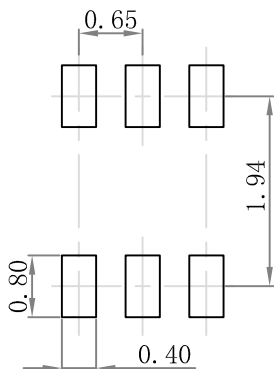
Figure 6. Turn-On Resistance vs. I_D

Package Outline Dimensions (SOT-363)



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	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
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
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.