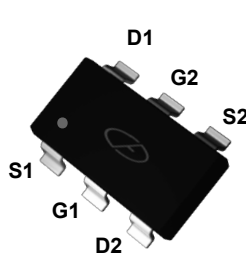
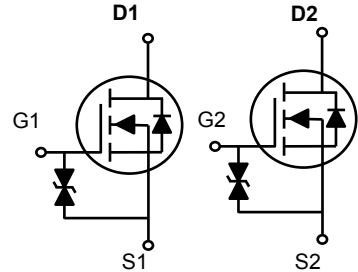


Main Product Characteristics

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 ($T_A=25^{\circ}C$ 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	$^{\circ}C/W$
Storage Temperature Range	T_{STG}	-55 To +150	$^{\circ}C$
Junction Temperature	T_J	150	$^{\circ}C$


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}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 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	$t_{d(on)}$	$V_{DD}=50V, R_L=250\Omega$ $V_{GS}=10V, R_{GS}=50\Omega,$ $R_G=50\Omega$	-	-	10	nS
Turn-Off Time ²	$t_{d(off)}$		-	-	15	
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_S=300mA,$ $V_R=25V,$ $Dis/dt=-100a/\mu S$	-	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}	$I_{GS}=\pm 1mA(\text{Open Drain})$	± 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

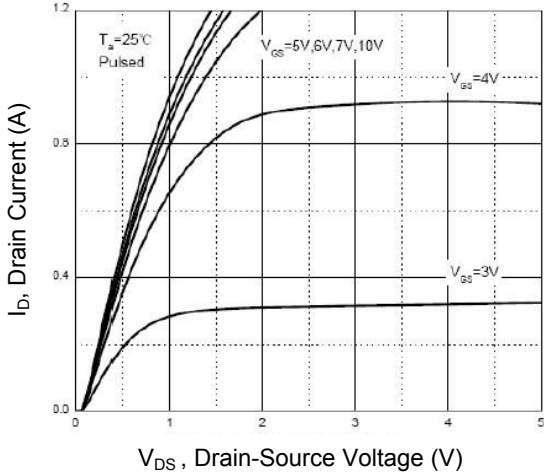


Figure 1. Typical Output Characteristics

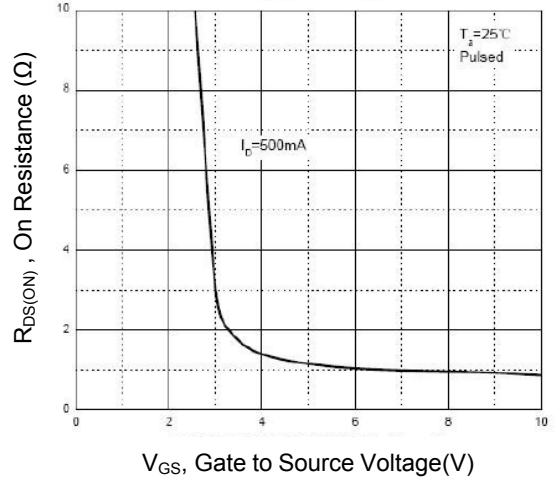


Figure 2. On-Resistance $R_{DS(ON)}$ vs. V_{GS}

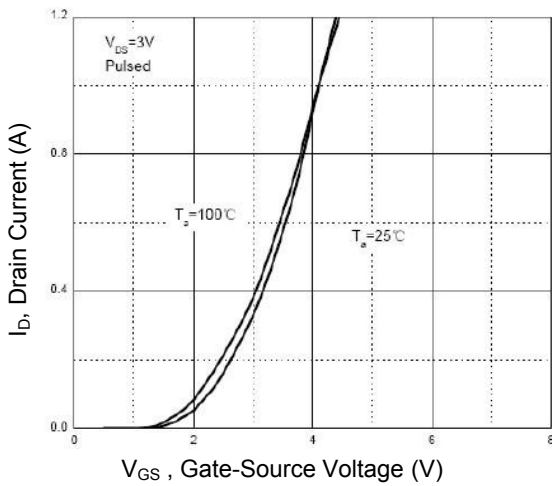


Figure 3. Transfer Characteristics

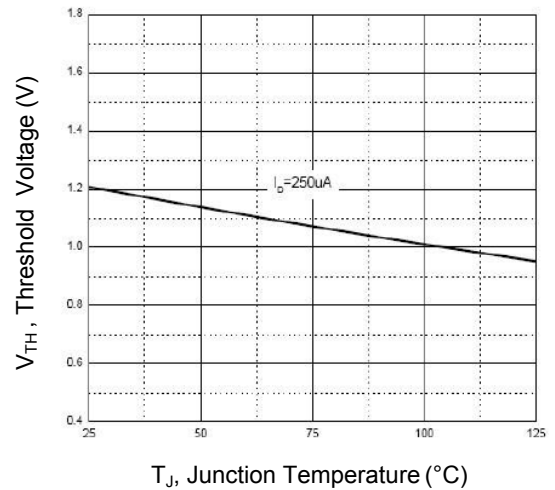


Figure 4. Threshold Voltage

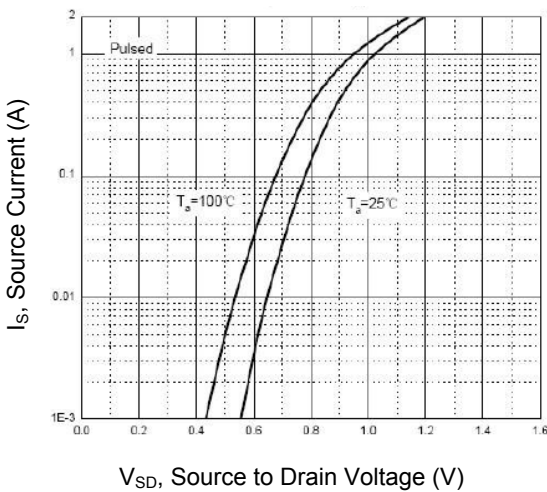


Figure 5. Source Current vs. V_{SD}

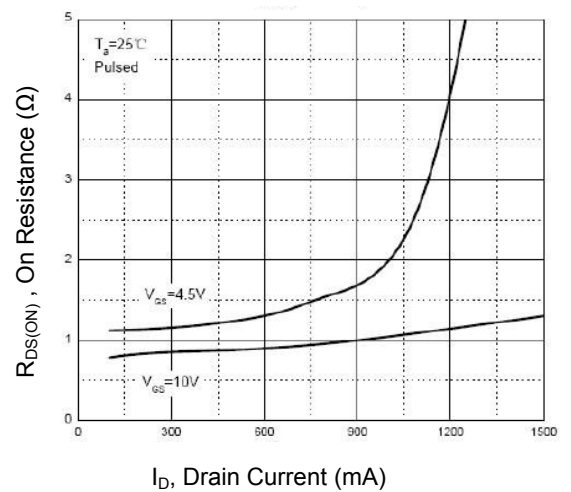
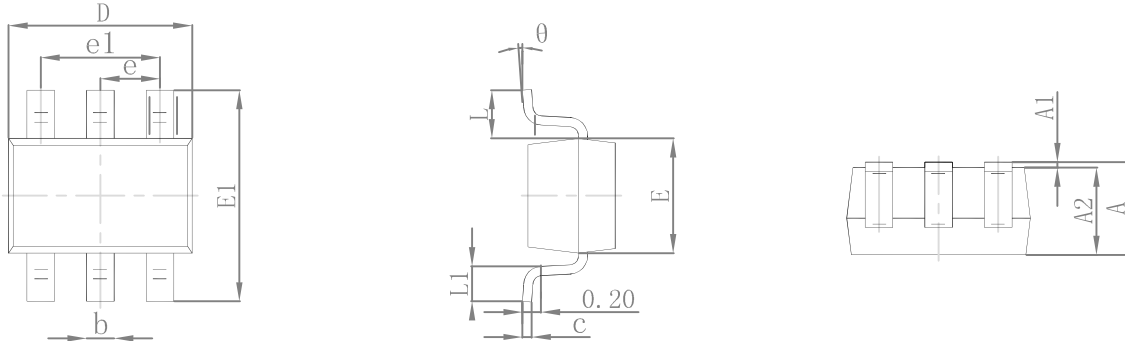


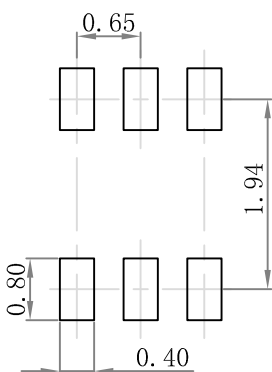
Figure 6. Turn-On Resistance vs. I_D

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: ± 0.05mm.
3. The pad layout is for reference purposes only.