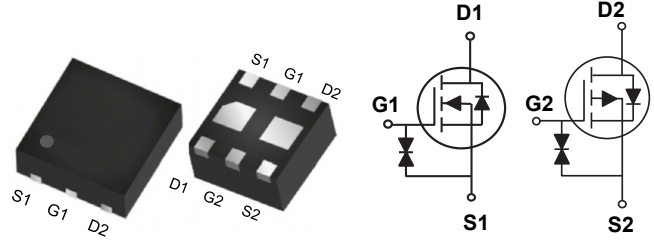


Main Product Characteristics

Channel	N-Channel	P-Channel
BV_{DSS}	20V	-20V
$R_{DS(ON)}$	340m Ω (Max.)	1200m Ω (Max.)
I_D	0.7A	-0.4A



DFN1010

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 GSFN0200 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	Maximum		Unit	
		N-Channel	P-Channel		
Drain-Source Voltage	V_{DS}	20	-20	V	
Gate-Source Voltage	V_{GS}	± 10	± 10	V	
Drain Current	I_D	$T_A=25^\circ\text{C}$	0.7	-0.4	A
		$T_A=70^\circ\text{C}$	0.5	-0.3	
Pulsed Drain Current ¹	I_{DM}	2.7	-1.5	A	
Total Power Dissipation	P_D	0.3	0.3	W	
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	475	475	$^\circ\text{C}/\text{W}$	
Junction and Storage Temperature Range	T_J/T_{STG}	-55 to +150	-55 to +150	$^\circ\text{C}$	

Note:

1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch. With 2oz. copper, $t \leq 10\text{s}$.

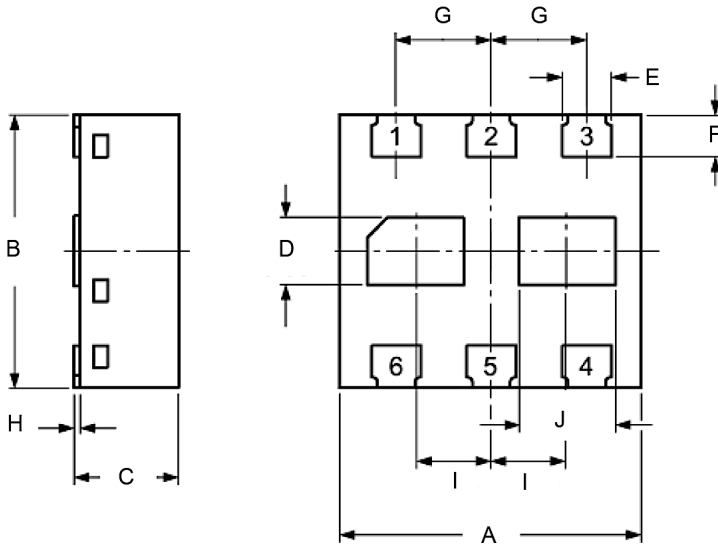
N-Channel Electrical Characteristics (T_J=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V, T _C =25°C	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	-	1	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =0.5A	-	270	340	mΩ
		V _{GS} =2.5V, I _D =0.3A	-	390	490	
		V _{GS} =1.8V, I _D =0.1A	-	700	1100	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz	-	20.3	-	pF
Output Capacitance	C _{oss}		-	5.4	-	
Reverse Transfer Capacitance	C _{rss}		-	2.4	-	
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =0.7A	-	0.28	-	nC
Gate Source Charge	Q _{gs}		-	0.05	-	
Gate Drain Charge	Q _{gd}		-	0.11	-	
Turn-On Delay Time	t _{d(on)}	V _{GS} =4.5V, V _{DD} =10V, I _D =0.7A, R _{GEN} =2.5Ω	-	3.7	-	nS
Turn-On Rise Time	t _r		-	4.04	-	
Turn-Off Delay Time	t _{d(off)}		-	14.28	-	
Turn-Off Fall Time	t _f		-	3.62	-	
Drain-Source Ratings and Characteristics						
Maximum Body-Diode Continuous Current	I _S	-	-	-	0.7	A
Diode Forward Voltage	V _{SD}	I _S =0.5A, V _{GS} =0V	-	0.8	1.2	V

P-Channel Electrical Characteristics (T_J=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _C =25°C	-	-	-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-	-1	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-0.2A	-	900	1200	mΩ
		V _{GS} =-2.5V, I _D =-0.1A	-	1250	1650	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz	-	31	-	pF
Output Capacitance	C _{oss}		-	12	-	
Reverse Transfer Capacitance	C _{rss}		-	7	-	
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-0.2A	-	1.1	-	nC
Gate Source Charge	Q _{gs}		-	0.32	-	
Gate Drain Charge	Q _{gd}		-	0.22	-	
Turn-On Delay Time	t _{d(on)}	V _{GS} =-4.5V, V _{DD} =-10V, I _D =-0.2A, R _{GEN} =3Ω	-	5	-	ns
Turn-On Rise Time	t _r		-	18	-	
Turn-Off Delay Time	t _{d(off)}		-	14	-	
Turn-Off Fall Time	t _f		-	25	-	
Drain-Source Ratings and Characteristics						
Maximum Body-Diode Continuous Current	I _S	-	-	-	-0.4	A
Diode Forward Voltage	V _{SD}	I _S =-0.2A, V _{GS} =0V	-	-0.85	-1.2	V

Package Outline Dimensions (DFN1010)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.150	0.041	0.045
B	0.950	1.050	0.037	0.041
C	0.340	0.400	0.013	0.016
D	0.220	0.300	0.009	0.012
E	0.150	0.230	0.006	0.009
F	0.125	0.205	0.005	0.008
G	0.350 Typ		0.014 Typ	
H	-	0.040	-	0.002
I	0.275 Typ		0.011 Typ	
J	0.320	0.400	0.013	0.016

Order Information

Device	Package	Marking	Carrier	Quantity
GSFN0200	DFN1010	D2B71	Tape & Reel	3,000 Pcs / Reel