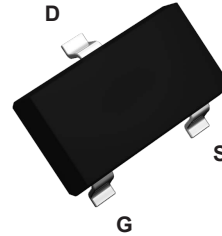
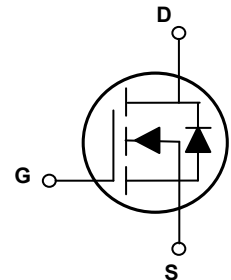


Main Product Characteristics

$V_{(BR)DSS}$	20V
$R_{DS(ON)}$	21m Ω (Max.)
I_D	6.8A



SOT-23



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 GSFC2312 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	Max.	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current-Continuous, at Steady-State, ($T_A=150^{\circ}\text{C}$) ¹	I_D	6.8	A
Drain Current-Pulsed ²	I_{DM}	26	A
Power Dissipation	P_D	1.25	W
Thermal Resistance, Junction-to-Ambient (PCB Mounted, Steady-State)	$R_{\theta JA}$	100	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	T_J	-55 To +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 To +150	$^{\circ}\text{C}$

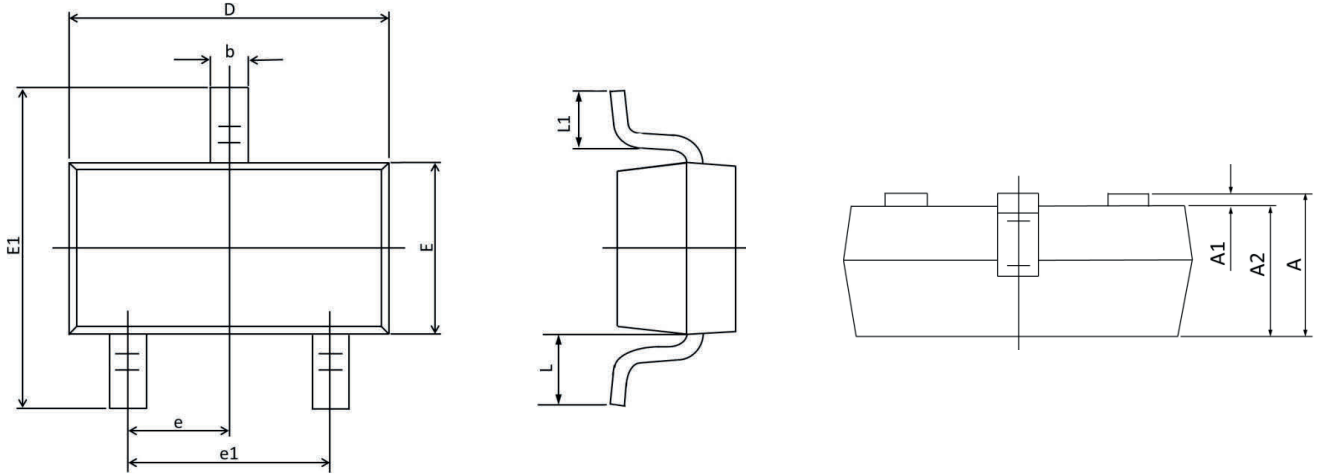
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	20	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate-Source Forward Leakage	I_{GSS}	$V_{GS}=10V, V_{DS}=0V$	-	-	100	nA
		$V_{GS}=-10V, V_{DS}=0V$	-	-	-100	
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6.8A$	-	17	21	m Ω
		$V_{GS}=2.5V, I_D=3A$	-	22	32	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	0.4	0.6	1	V
Dynamic and Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=6A, V_{GS}=4.5V$	-	12.8	-	nC
Gate-Source Charge	Q_{gs}		-	1.8	-	
Gate-Drain ("Miller") Charge	Q_{gd}		-	3.2	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=10V, R_G=3\Omega, V_{GS}=4.5V, I_D=6.8A$	-	8	-	nS
Rise Time	t_r		-	46	-	
Turn-Off Delay Time	$t_{d(off)}$		-	30	-	
Fall Time	t_f		-	51	-	
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, F=1MHz$	-	885	-	pF
Output Capacitance	C_{oss}		-	130	-	
Reverse Transfer Capacitance	C_{rss}		-	117	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Source Current (Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode.	-	-	6.8	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=6A$	-	-	1.2	V

Note:

1. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Repetitive rating: Pulsed width limited by maximum junction temperature.

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.047
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
D	2.800	3.040	0.110	0.120
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.55 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020

Order Information

Device	Package	Marking	Carrier	Quantity
GSFC2312	SOT-23	C2312	Tape & Reel	3,000 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com