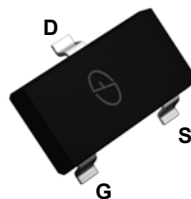
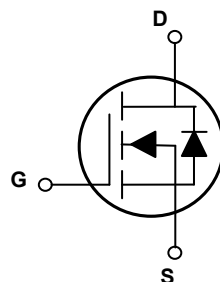


Main Product Characteristics

$V_{(BR)DSS}$	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
- AEC-Q101 qualified



Description

The GSFC2312AU 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, @ 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
Junction-to-Ambient (PCB Mounted, Steady-State)	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$
Operating Junction Temperature Range	T_J	-55 To +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 To +150	$^{\circ}\text{C}$

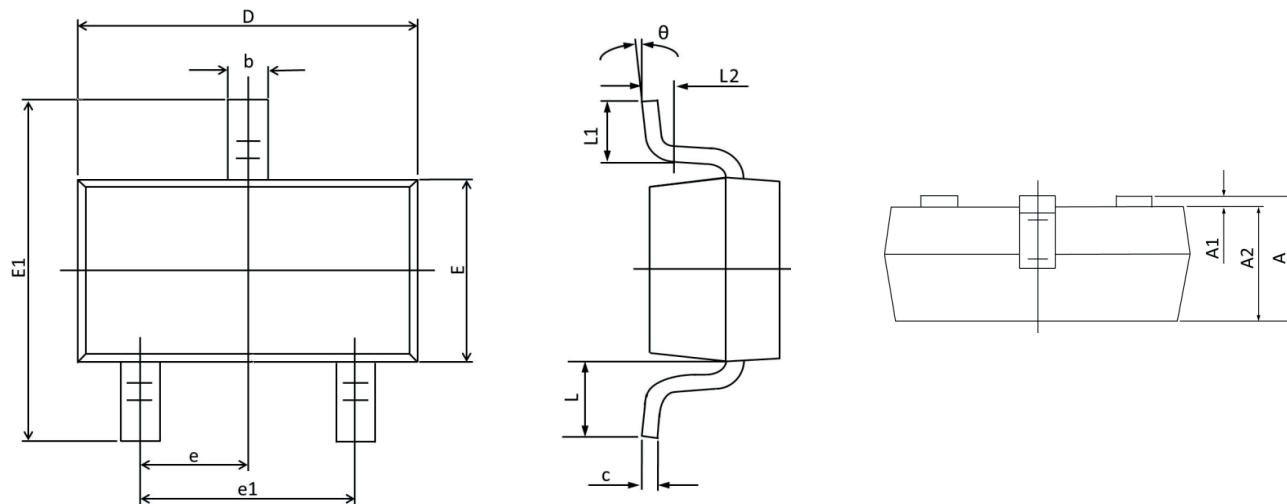
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =10uA	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	mΩ
		V _{GS} =2.5V, I _D =3A	-	22	32	
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	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 =3Ω, 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	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
L2	0.250 TYP.		0.010 TYP.	
θ	0°	8°	0°	8°