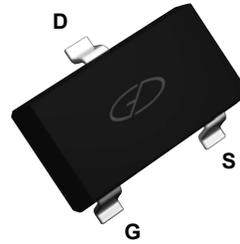
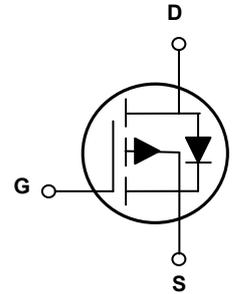


Main Product Characteristics

$V_{(BR)DSS}$	-50V
$R_{DS(on)Max}$	8Ω@-10V
	10Ω@ -5V
I_D	-0.13A



SOT-23



Schematic Diagram

Features and Benefits

- Standard Turbo MOSFET process technology.
- Optimized the cell structure.
- Low on-resistance and low gate charge.
- Featuring low switching and drive losses.
- Fast switching and reverse body recovery.
- High ruggedness and robustness.
- AEC-Q101 qualified.



Description

The BSS84AU 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}	-50	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-0.13	A
Pulsed Drain Current ¹ @ tp<10μs	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	556	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Maximum Lead Temperature for Soldering Purposes, Duration for 5 Seconds	T_L	260	°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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$	-	-	-15	μA
		$V_{DS}=-25V, V_{GS}=0V$	-	-	-0.1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 5	μA
Static Drain-Source On-Resistance ³	$R_{DS(ON)}$	$V_{GS}=-5V, I_D=-0.1A$	-	-	10	Ω
		$V_{GS}=-10V, I_D=-0.1A$	-	-	8	Ω
Forward Transconductance ¹	g_{fs}	$V_{DS}=-25V, I_D=-100mA$	50	-	-	mS
Gate Threshold Voltage ³	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=-250\mu A$	-0.9	-	-2	V
Dynamic and Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=50\Omega$ $I_D=-2.5A$	-	2.5	-	nS
Rise Time	t_r		-	1	-	
Turn-Off Delay Time	$t_{d(off)}$		-	16	-	
Fall Time	t_f		-	8	-	
Input Capacitance	C_{iss}	$V_{DS}=-5V, V_{GS}=0V,$ $F=1MHz$	-	30	-	pF
Output Capacitance	C_{oss}		-	10	-	
Reverse Transfer Capacitance	C_{rss}		-	5	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Current	I_S	-	-	-	-0.13	A
Pulse Current	I_{SM}	-	-	-	-0.52	A
Diode Forward Voltage ³	V_{SD}	$V_{GS}=0V, I_S=-0.13A$	-	-	-2.2	V

Notes:

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, $t_s \leq 10s$.
3. Pulse Test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Electrical and Thermal Characteristics

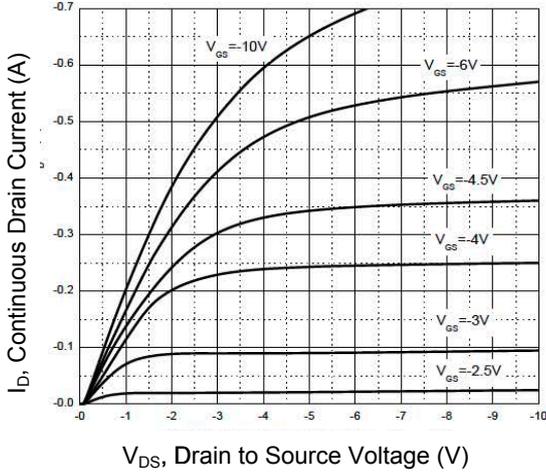


Figure 1. Typical Output Characteristics

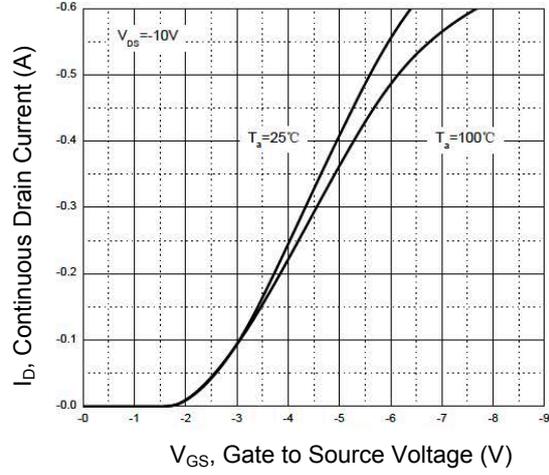


Figure 2. Transfer Characteristics

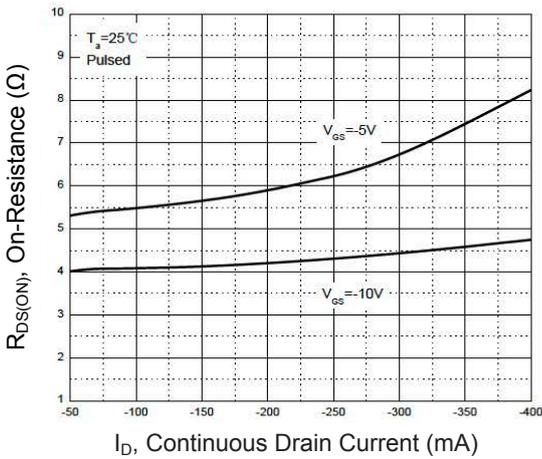


Figure 3. $R_{DS(ON)}$ vs. I_D

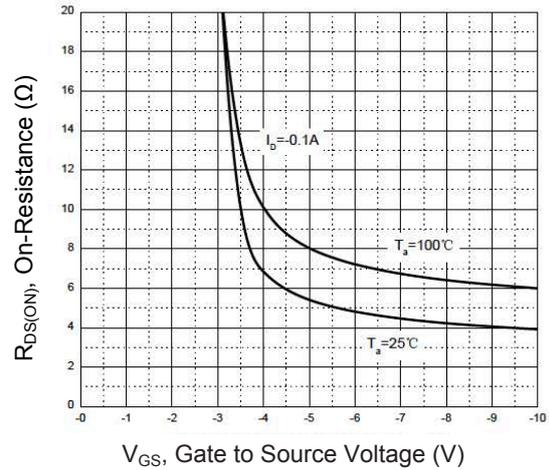


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

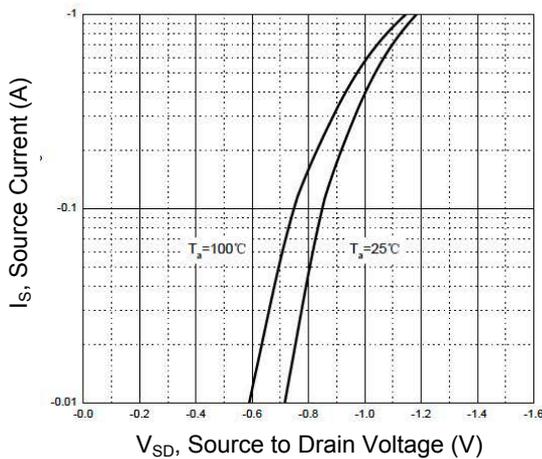


Figure 5. I_S vs. V_{SD}

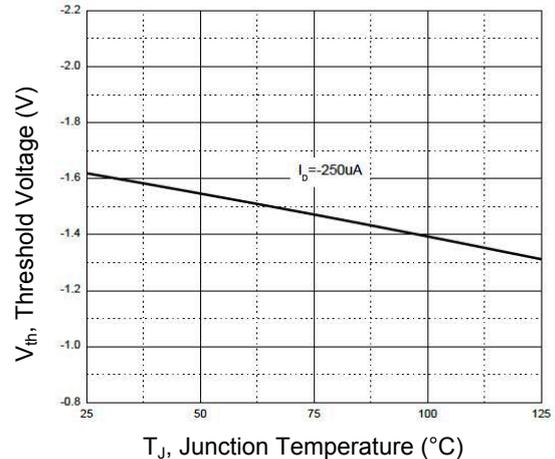
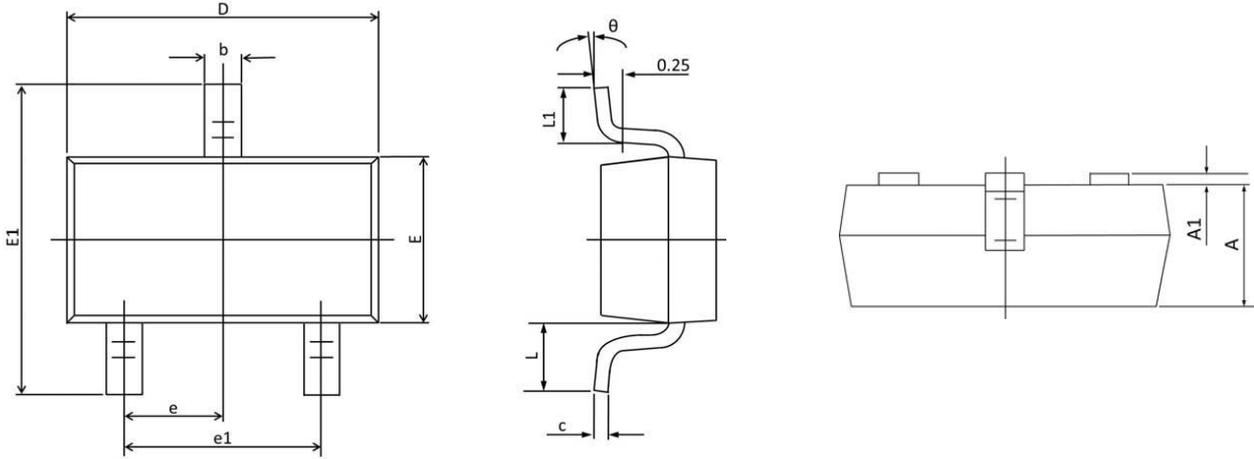


Figure 6. Threshold Voltage

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.000	0.035	0.039
A1	0.000	0.100	0.000	0.004
b	0.300	0.500	0.012	0.020
c	0.090	0.110	0.004	0.004
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
θ	1°	7°	1°	7°

Order Information

Device	Package	Marking	Carrier	Quantity
BSS84AU	SOT-23	B84AU	Tape & Reel	3,000pcs / Reel