



## PRODUCT DATA SHEET



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**Datasheet**



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Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at [www.jg-semi.cn](http://www.jg-semi.cn). Please email any questions regarding the system integration to [JINGAO\\_questions@jgsemi.com](mailto:JINGAO_questions@jgsemi.com).

## DESCRIPTION

These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry. Typical applications are DC–DC converters, load switching, power management in portable and battery–powered products such as computers, printers, cellular and cordless telephones.

The BSS84D is available in SC-88 package

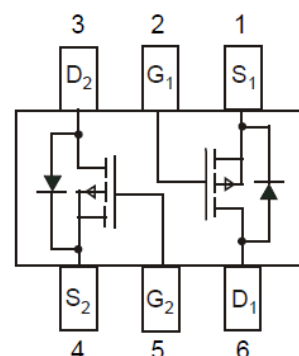
## ORDERING INFORMATION

Package Type	Part Number
SC-88	BSS84D
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

## FEATURES

- Energy Efficient
- Available in SC-88 package

## PIN DESCRIPTION



## ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ\text{C}$ , unless otherwise noted

$V_{DSS}$ , Drain–to–Source Voltage	50Vdc
$V_{GS}$ , Gate–to–Source Voltage–Continuous	$\pm 20\text{Vdc}$
$I_D$ , Drain Current–Continuous @ $T_A = 25^\circ\text{C}$	130mA
$I_{DM}$ , Pulsed Drain Current ( $t_p \leq 10\mu\text{s}$ )	520mA
$P_D$ , Total Power Dissipation @ $T_A = 25^\circ\text{C}$	380mW
$T_J$ , $T_{STG}$ , Junction and Storage temperature	$-55^\circ\text{C} \sim 150^\circ\text{C}$
$R_{\theta JA}$ , Thermal Resistance – Junction–to–Ambient	$328^\circ\text{C} / \text{W}$
$T_L$ , Maximum Lead Temperature for Soldering Purposes, for 10 seconds	$260^\circ\text{C}$

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0Vdc, I <sub>D</sub> =250μAdc	50	-	-	Vdc
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =25Vdc, V <sub>GS</sub> =0Vdc V <sub>DS</sub> =50Vdc, V <sub>GS</sub> =0Vdc V <sub>DS</sub> =50Vdc, V <sub>GS</sub> =0Vdc, T <sub>J</sub> =125°C	- - -	- - -	0.1 15 60	μAdc
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20Vdc, V <sub>DS</sub> =0Vdc	-	-	±100	nAdc
ON CHARACTERISTICS NOTE 1						
Gate-Source Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μAdc	0.8	-	2.0	Vdc
Static Drain-to-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =5.0Vdc, I <sub>D</sub> =100mAdc	-	5.0	10	Ohms
DYNAMIC CHARACTERISTICS						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =5.0Vdc	-	42	-	pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =5.0Vdc	-	20	-	
Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =5.0Vdc	-	4	-	
SWITCHING CHARACTERISTICS NOTE2						
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15Vdc , I <sub>D</sub> =-2.5Adc, R <sub>L</sub> =50Ω	-	13	-	ns
Rise Time	t <sub>r</sub>		-	6	-	
Turn-Off Delay Time	t <sub>d(off)</sub>		-	16	-	
Fall Time	t <sub>f</sub>		-	3	-	
Gate Charge	Q <sub>T</sub>		-	600 0	-	pC

NOTE1: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.

NOTE2: Switching characteristics are independent of operating junction temperature.

## TYPICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$

Figure 1. On-Resistance vs. Junction Temperature

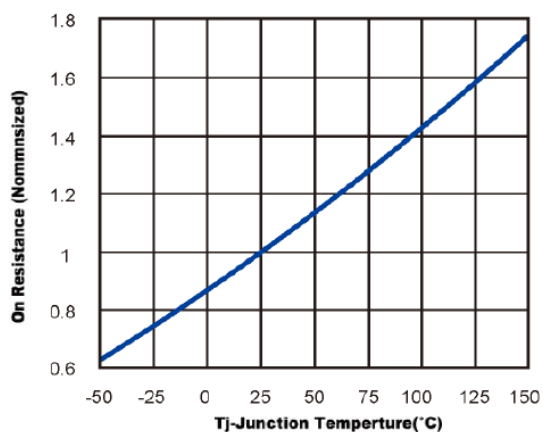


Figure 2. On-Resistance vs. Drain Current

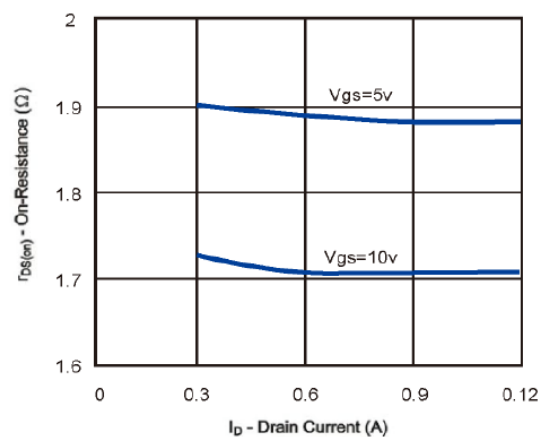


Figure 3. Capacitance

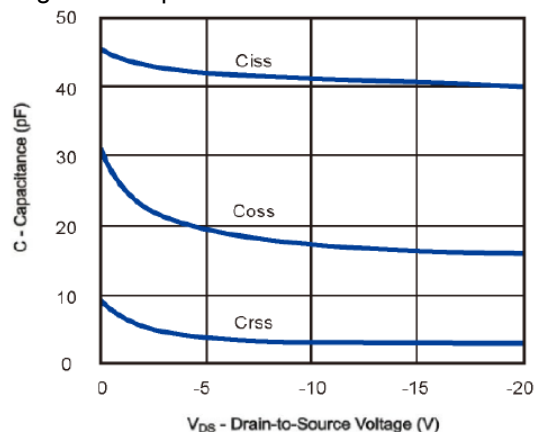


Figure 4. On-Resistance vs. Gate-to-Source Voltage

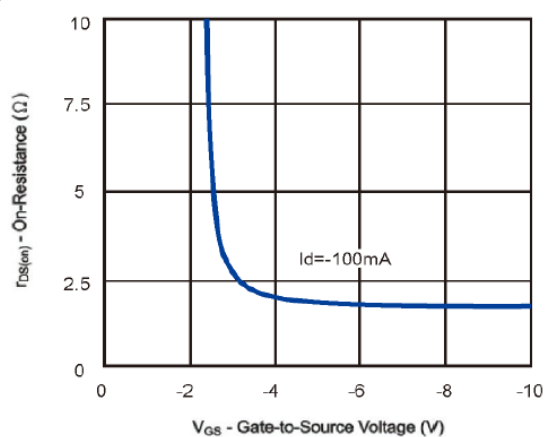


Figure 5. Threshold Voltage

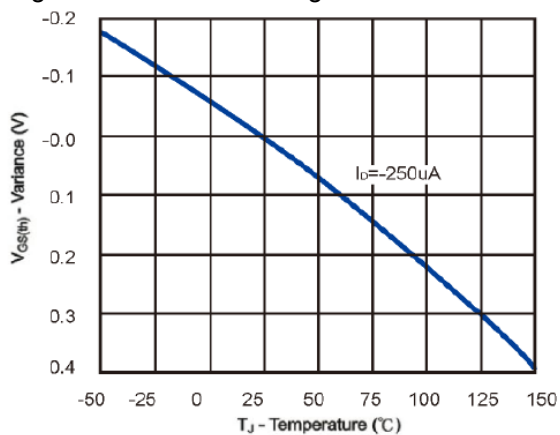


Figure 6. On-Region Characteristics

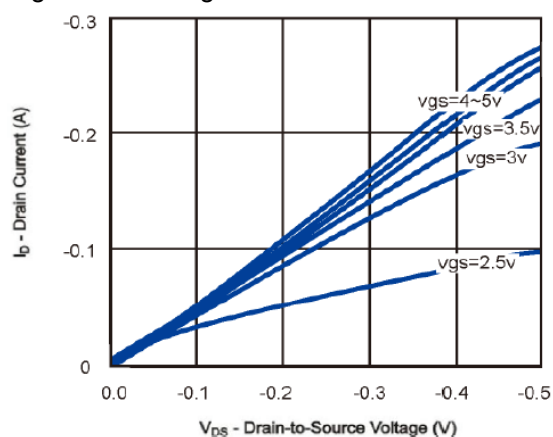


Figure 7. Gate Charge

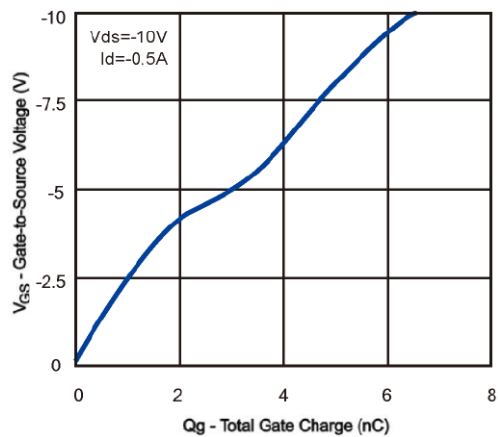
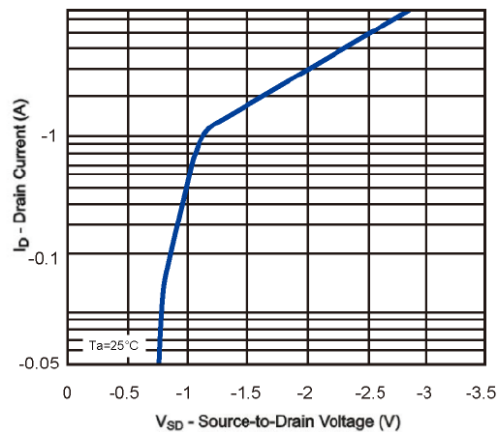
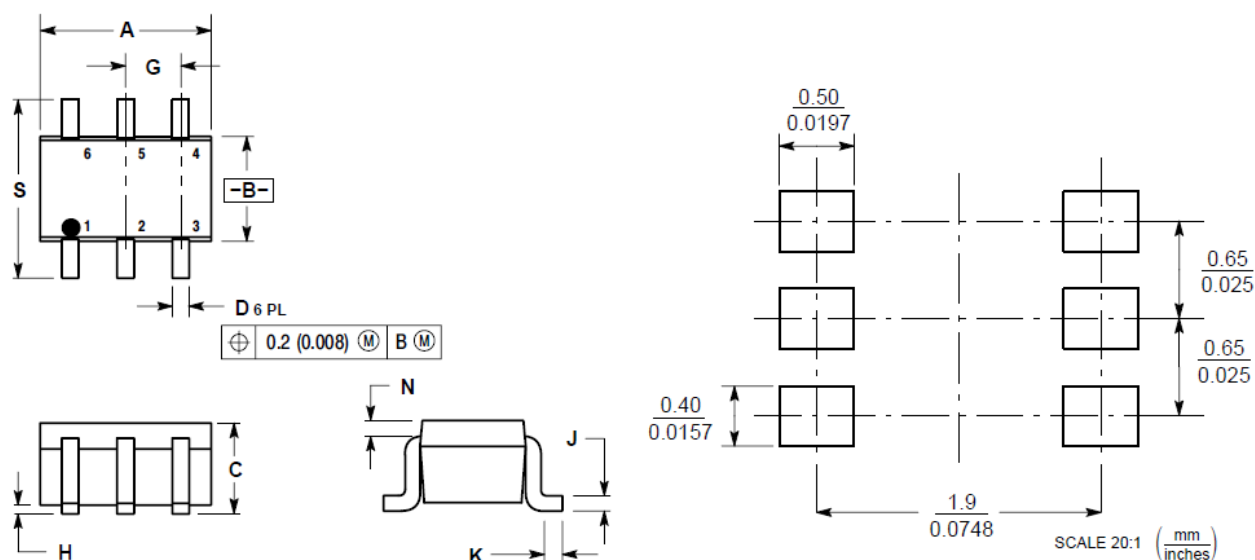


Figure 8. On-Resistance vs. Drain Current



## PACKAGE INFORMATION

Dimension in SC-88 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	-	0.004	-	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20

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