



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

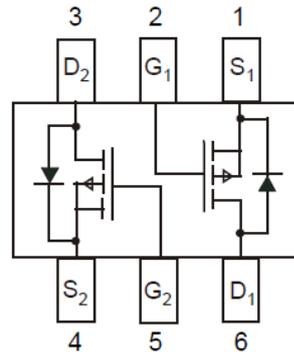
FEATURES

- Energy Efficient
- 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	

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°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_A = 25°C, unless otherwise noted

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

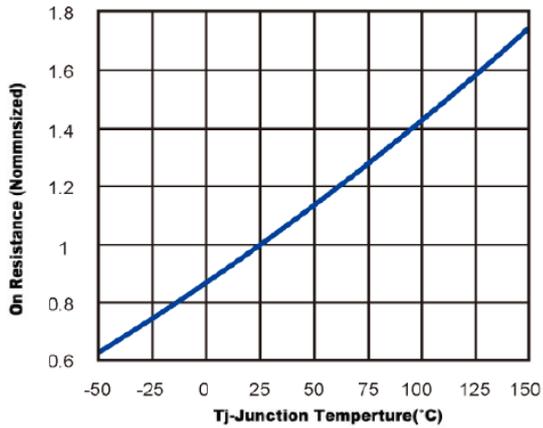


Figure 2. On-Resistance vs. Drain Current

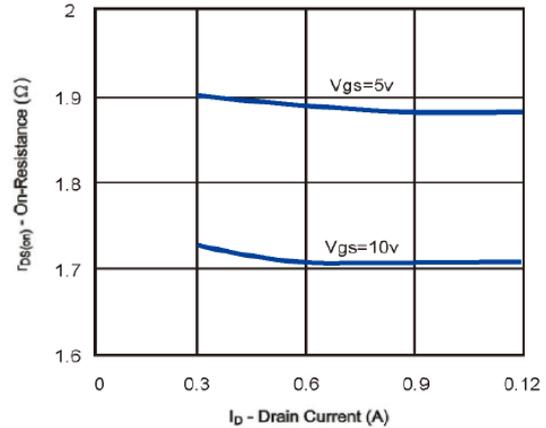


Figure 3. Capacitance

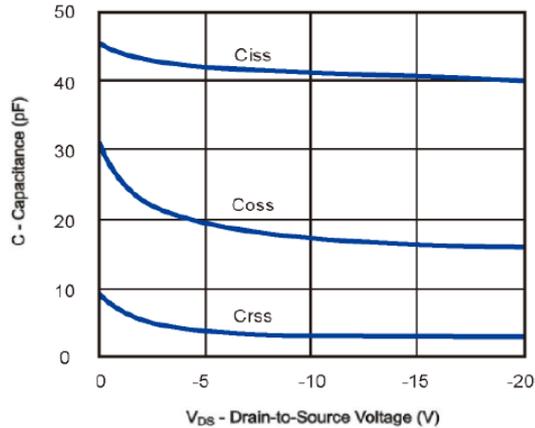


Figure 4. On-Resistance vs. Gate-to-Source Voltage

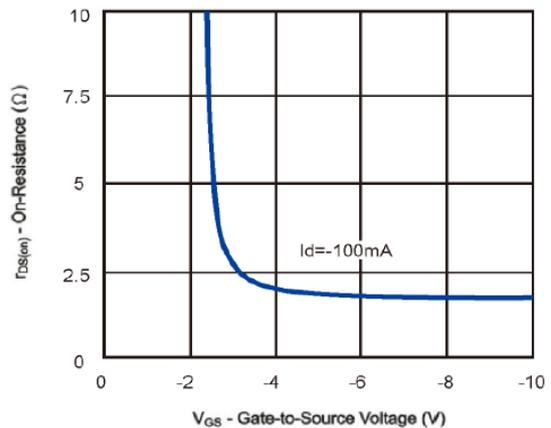


Figure 5. Threshold Voltage

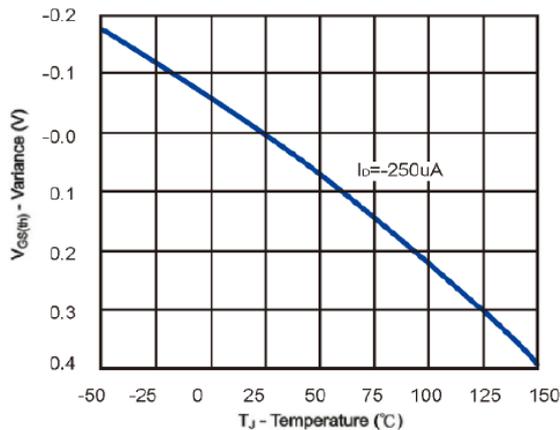


Figure 6. On-Region Characteristics

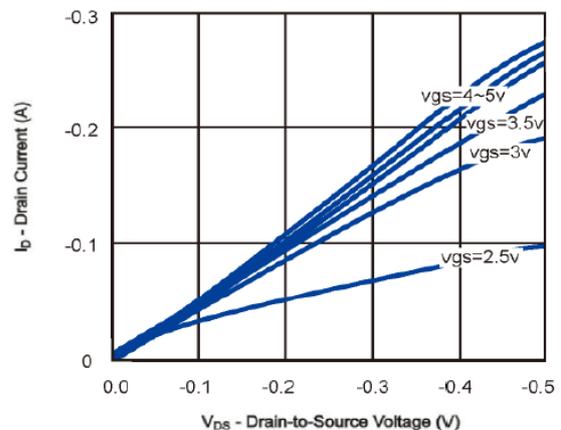




Figure 7. Gate Charge

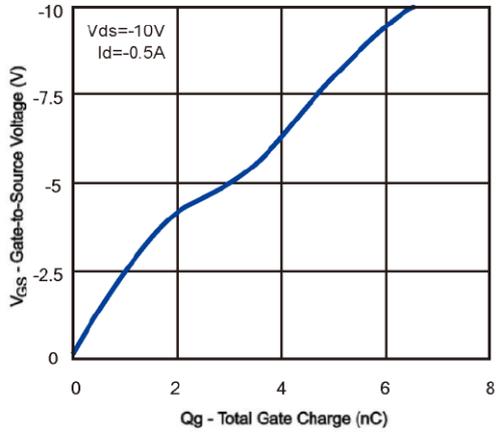
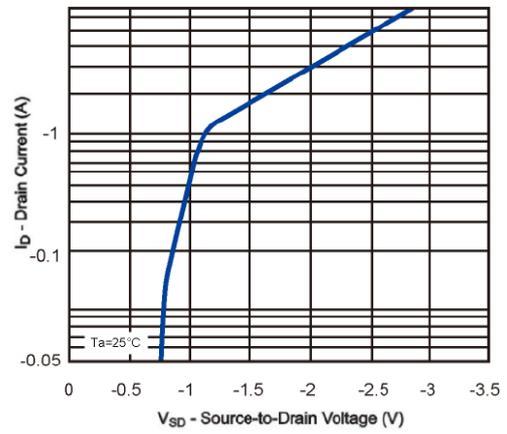


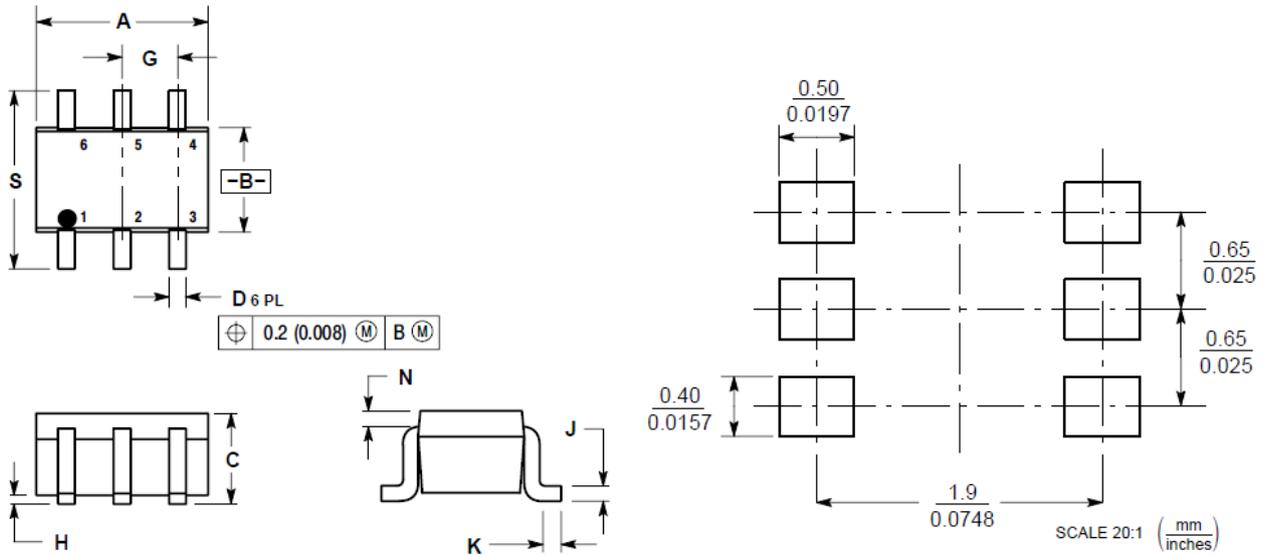
Figure 8. On-Resistance vs. Drain Current





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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