



BSS84W

P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

Product Summary

V _{(BR)DSS}	R _{DS(ON)}	I _D T _A = +25°C
-50V	$10\Omega V_{GS} = -5V$	-130mA

Description

This MOSFET has been designed to minimize the on-state resistance (R_{DS(ON)}) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

Applications

- General Purpose Interfacing Switch
- Power Management Functions
- Analog Switch

Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

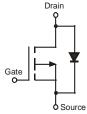
Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: See Diagram
- Terminals: Solderable per MIL-STD-202, Method 208 (3)
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Weight: 0.006 grams (approximate)

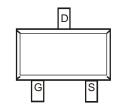




Chengdu A/T Site



Equivalent Circuit



Top View

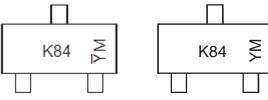
Ordering Information (Note 4 & 5)

Part Number	Compliance	Case	Packaging
BSS84W-7-F	Standard	SOT323	3000 / Tape & Reel
BSS84WQ-7-F	Automotive	SOT323	3000 / Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
- 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.
- 5. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_grade_definitions/.

Marking Information



Shanghai A/T Site

K84 = Product Type Marking Code
YM = Date Code Marking for SAT (Shanghai Assembly/ Test site)
YM = Date Code Marking for CAT (Chengdu Assembly/ Test site)
Y or Y = Year (ex: A = 2013)
M = Month (ex: 9 = September)

September 2013

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Date Code Key

Date Code Key		_		_								
Year	201	2	2013		2014	20	15	2016		2017	2	2018
Code	Z		Α		В	(2	D		Е		F
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units	
Drain-Source Voltage	V _{DSS}	-50	V	
Drain-Gate Voltage (Note 6)		V_{DGR}	-50	V
Gate-Source Voltage	Continuous	V_{GSS}	±20	V
Drain Current (Note 6)	Continuous	I _D	-130	mA
Pulsed Drain Current (Note 6)		I _{DM}	-1	A

Thermal Characteristics

Characteristic	Symbol	Value	Units
Total Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
DFF CHARACTERISTICS (Note 7)							
Drain-Source Breakdown Voltage	BV _{DSS}	-50	-75	_	V	$V_{GS} = 0V, I_D = -250\mu A$	
Zero Gate Voltage Drain Current	I _{DSS}			-1 -2 -100	μΑ μΑ nA	V _{DS} = -50V, V _{GS} = 0V, T _J = +25°C V _{DS} = -50V, V _{GS} = 0V, T _J = +125°C V _{DS} = -25V, V _{GS} = 0V, T _J = +25°C	
Gate-Body Leakage	I _{GSS}			±10	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage	V _{GS(th)}	-0.8	-1.6	-2.0	>	$V_{DS} = V_{GS}$, $I_D = -1mA$	
Static Drain-Source On-Resistance	R _{DS(ON)}		6	10	Ω	$V_{GS} = -5V, I_D = -0.1A$	
Forward Transconductance	g _{FS}	0.05		_	S	$V_{DS} = -25V, I_{D} = -0.1A$	
DYNAMIC CHARACTERISTICS							
Input Capacitance	C _{iss}			45	pF		
Output Capacitance	Coss			25	pF	$V_{DS} = -25V, V_{GS} = 0V, f = 1.0MHz$	
Reverse Transfer Capacitance	C _{rss}			12	pF		
SWITCHING CHARACTERISTICS							
Turn-On Delay Time	t _{D(ON)}		10	_	ns	$V_{DD} = -30V, I_D = -0.27A,$	
Turn-Off Delay Time	t _{D(OFF)}	_	18	_	ns	$R_{GEN} = 50\Omega$, $V_{GS} = -10V$	

Notes:

^{6.} Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.7. Short duration pulse test used to minimize self-heating effect.



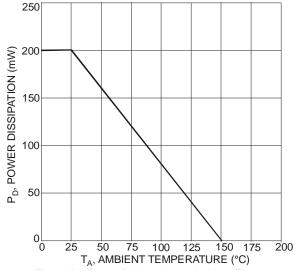
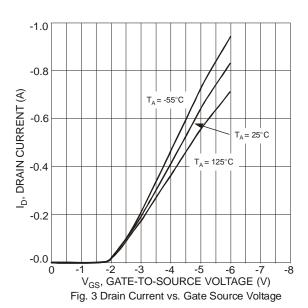
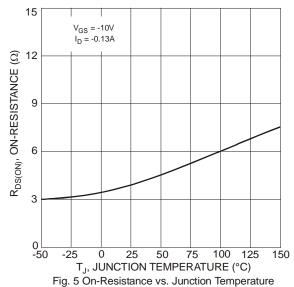


Fig. 1 Max Power Dissipation vs. Ambient Temperature





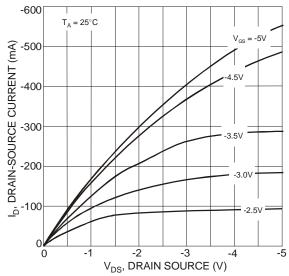


Fig. 2 Drain Source Current vs.Drain Source Voltage

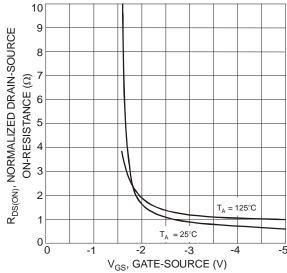


Fig. 4 On-Resistance vs. Gate-Source Voltage

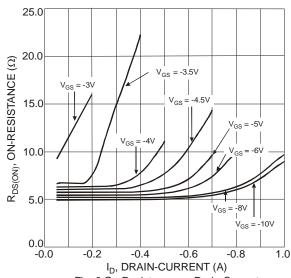
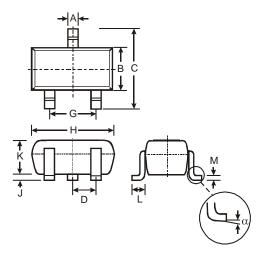


Fig. 6 On-Resistance vs. Drain-Current



Package Outline Dimensions

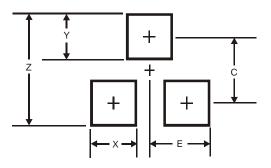
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SOT323						
Dim	Min	Max	Тур			
Α	0.25	0.40	0.30			
В	1.15	1.35	1.30			
С	2.00	2.20	2.10			
D	-	-	0.65			
G	1.20	1.40	1.30			
Н	1.80	2.20	2.15			
J	0.0	0.10	0.05			
K	0.90	1.00	0.95			
L	0.25	0.40	0.30			
M	0.10	0.18	0.11			
α	0°	8°	-			
All Dimensions in mm						

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	2.8
Х	0.7
Y	0.9
С	1.9
E	1.0



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