





#### **DUAL P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR**

## **Product Summary**

V <sub>(BR)DSS</sub>	R <sub>DS(on) max</sub>	<b>Ι</b> <sub>D</sub> Τ <sub>A</sub> = 25°C
-50V	10Ω @ V <sub>GS</sub> = -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



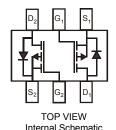
TOP VIEW

#### **Features and Benefits**

- 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: SOT563
- Case Material: Molded Plastic, "Green" Molding
  Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish Matte Tin annealed over Copper leadframe.
  Solderable per MIL-STD-202, Method 208 (3)
- Terminal Connections: See Diagram
- Weight: 0.006 grams (approximate)



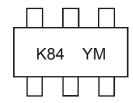
Ordering Information (Note 4)

Part Number	Case	Packaging
BSS84V-7	SOT563	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.

## Marking Information



K84 = Product Type Marking Code YM = Date Code Marking Y = Year ex: S = 2005 M = Month ex: 9 = September

#### Date Code Key

Year	2005		2006	2007		2008	2009		2010	2011		2012
Code	S		T	U		V	W		Χ	Υ		Z
Month	Jan	Feb	Mar	Apr	Ma	y Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



# Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units	
Drain-Source Voltage		$V_{DSS}$	-50	V
Drain-Gate Voltage (Note 5)		$V_{DGR}$	-50	V
Gate-Source Voltage	Continuous	V <sub>GSS</sub>	±20	V
Drain Current (Note 6)	Continuous	I <sub>D</sub>	-130	mA

# Thermal Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units
Total Power Dissipation	$P_{D}$	150	mW
Thermal Resistance, Junction to Ambient	$R_{ heta JA}$	833	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-55 to +150	°C

## **Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

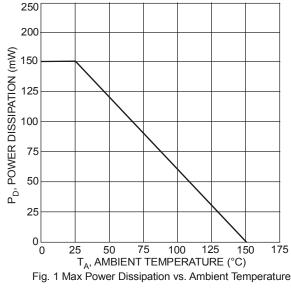
				,				
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition		
OFF CHARACTERISTICS (Note 7)								
Drain-Source Breakdown Voltage	$BV_{DSS}$	-50	-75	_	>	$V_{GS} = 0V, I_D = -250\mu A$		
		_	_	-1	μΑ	$V_{DS} = -50V$ , $V_{GS} = 0V$ , $T_{J} = +25$ °C		
Zero Gate Voltage Drain Current	IDSS	_	_	-2	μΑ	$V_{DS} = -50V$ , $V_{GS} = 0V$ , $T_{J} = +125$ °C		
		_		-100	nA	$V_{DS} = -25V$ , $V_{GS} = 0V$ , $T_{J} = +25$ °C		
Gate-Body Leakage	I <sub>GSS</sub>	_	_	±50	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$		
ON CHARACTERISTICS (Note 7)	ON CHARACTERISTICS (Note 7)							
Gate Threshold Voltage	V <sub>GS(th)</sub>	-0.8	-1.6	-2.0	V	$V_{DS} = V_{GS}$ , $I_D = -1mA$		
Static Drain-Source On-Resistance	R <sub>DS (ON)</sub>	_	2	10	Ω	$V_{GS} = -5V, I_D = -0.100A$		
Forward Transconductance	<b>g</b> FS	0.05	_	_	S	$V_{DS} = -25V, I_D = -0.1A$		
DYNAMIC CHARACTERISTICS								
Input Capacitance	Ciss	_	_	45	pF			
Output Capacitance	Coss	_	_	25	pF	$V_{DS} = -25V, V_{GS} = 0V, f = 1.0MHz$		
Reverse Transfer Capacitance	Crss	_	_	12	pF	1		
SWITCHING CHARACTERISTICS				•				
Turn-On Delay Time	t <sub>D(ON)</sub>	_	10	_	ns	$V_{DD} = -30V, I_D = -0.27A,$		
Turn-Off Delay Time	t <sub>D(OFF)</sub>		18	_	ns	$R_{GEN}$ = 50 $\Omega$ , $V_{GS}$ = -10 $V$		

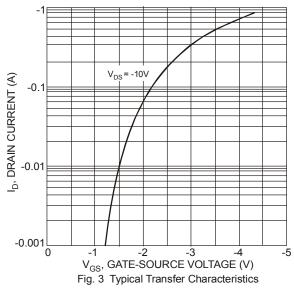
 $\mbox{Notes:} \qquad \mbox{5.} \quad \mbox{R}_{\mbox{\scriptsize GS}} \leq \mbox{20}\mbox{K}\Omega.$ 

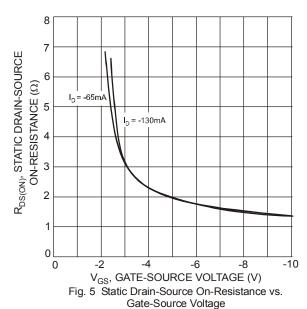
7. Short duration pulse test used to minimize self-heating effect.

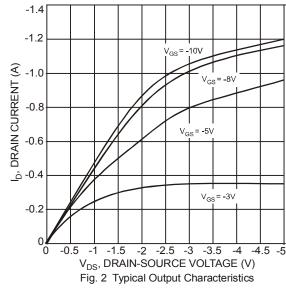
<sup>6.</sup> Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.











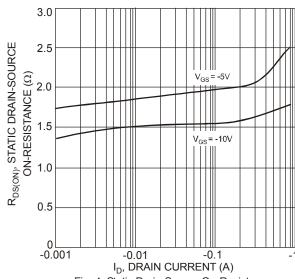
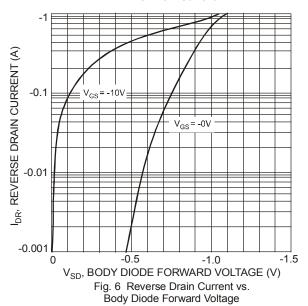


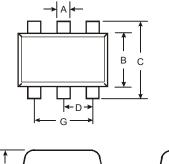
Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

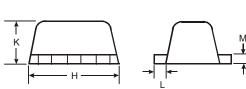




# **Package Outline Dimensions**

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

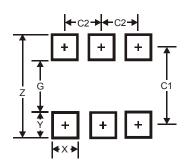




SOT563						
Dim	Min	Max	Тур			
Α	0.15	0.30	0.20			
В	1.10	1.25	1.20			
С	1.55	1.70	1.60			
D	-	ı	0.50			
G	0.90	1.10	1.00			
Н	1.50	1.70	1.60			
K	0.55	0.60	0.60			
L	0.10	0.30	0.20			
М	0.10	0.18	0.11			
All Dimensions in mm						

# **Suggested Pad Layout**

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



Dimensions	Value (in mm)
Z	2.2
G	1.2
Х	0.375
Y	0.5
C1	1.7
C2	0.5



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многоканальный

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