



## DUAL P-CHANNEL ENHANCEMENT MODE MOSFET

This device contains two electrically-isolated P-channel, enhancement-mode MOSFETs, housed in a very small SOT-363 (SC70-6L) package. This device is ideal for portable applications where board space is at a premium.

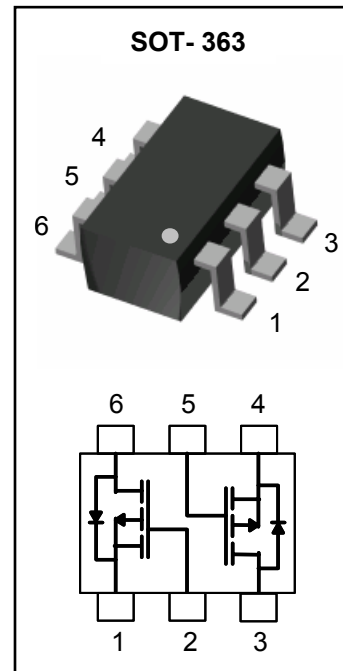
### FEATURES

- Low On-Resistance
- Low Gate Threshold Voltage
- Fast Switching
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### APPLICATIONS

- Switching Power Supplies
- Hand-Held Computers, PDAs

**MARKING CODE: S84**



### MAXIMUM RATINGS

$T_J = 25^{\circ}\text{C}$  Unless otherwise noted

Rating	Symbol	Value	Units
Drain-Source Voltage	$V_{DSS}$	- 50	V
Drain-Gate Voltage (Note 1)	$V_{DGR}$	- 50	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Drain Current	$I_D$	130	mA
Total Power Dissipation (Note 2)	$P_D$	200	mW
Operating Junction Temperature Range	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$

Note 1.  $R_{GS} < 20\text{K ohms}$

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Units
Thermal Resistance, Junction to Ambient (Note 2)	$R_{thja}$	625	$^{\circ}\text{C/W}$

Note 2. FR-4 board 70 x 60 x 1mm with minimum recommended pad layout



## Electrical Characteristics (Each Device)

T<sub>J</sub> = 25°C Unless otherwise noted

### OFF CHARACTERISTICS (Note 3)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> = -250μA, V <sub>GS</sub> = 0V	-50	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -50V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 25°C	-	-	-15	μA
		V <sub>DS</sub> = -50V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125°C	-	-	-60	
		V <sub>DS</sub> = -25V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 25°C	-	-	-0.1	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V	-	-	±10	nA

### ON CHARACTERISTICS (Note 3)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -1mA	-0.8	-1.44	-2.0	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = -5V, I <sub>D</sub> = -0.1A	-	3.8	10	Ohms
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> = -25V, I <sub>D</sub> = -0.1A	0.05	-	-	S

### DYNAMIC CHARACTERISTICS

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -25V, V <sub>GS</sub> = 0V, f = 1.0MHz	-	-	45	pF
Output Capacitance	C <sub>oss</sub>		-	-	25	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	-	12	pF

### SWITCHING CHARACTERISTICS

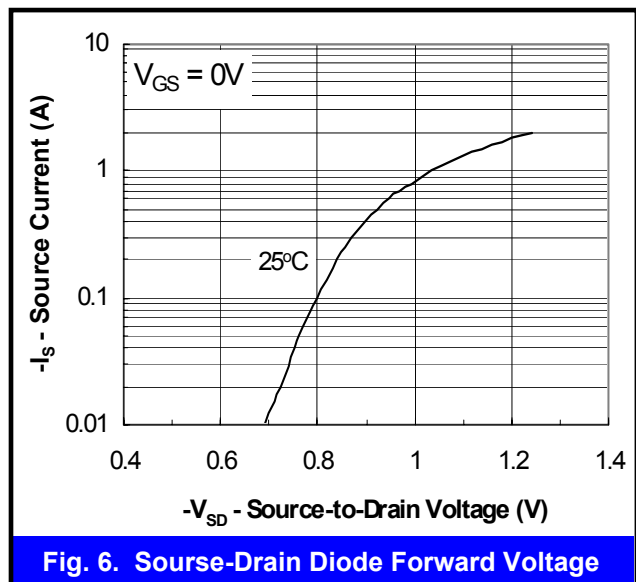
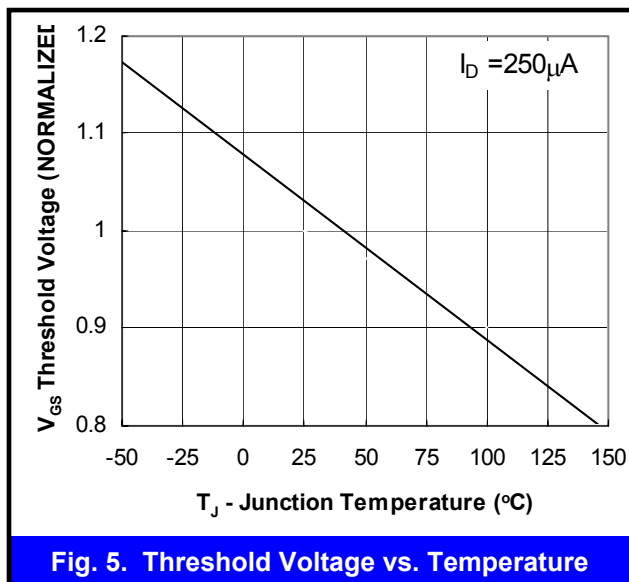
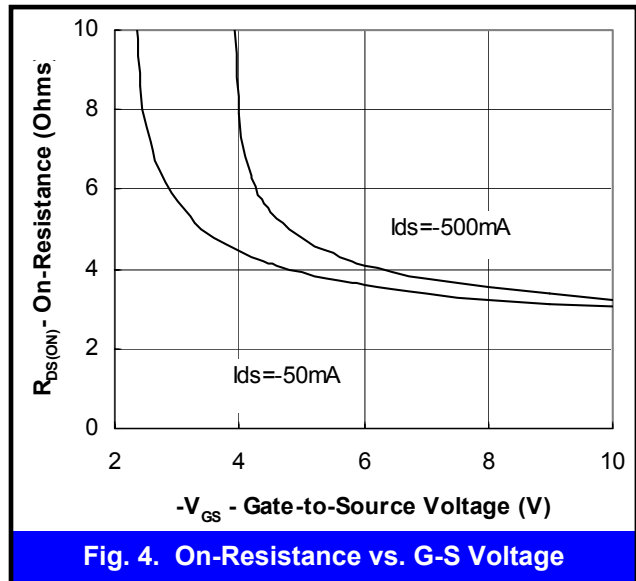
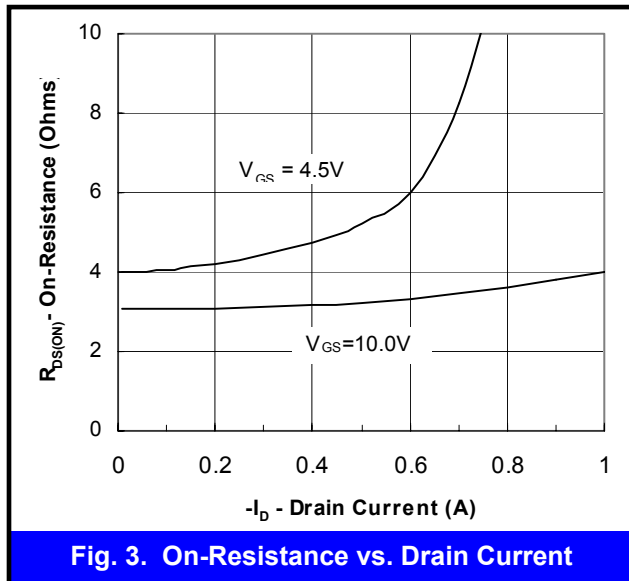
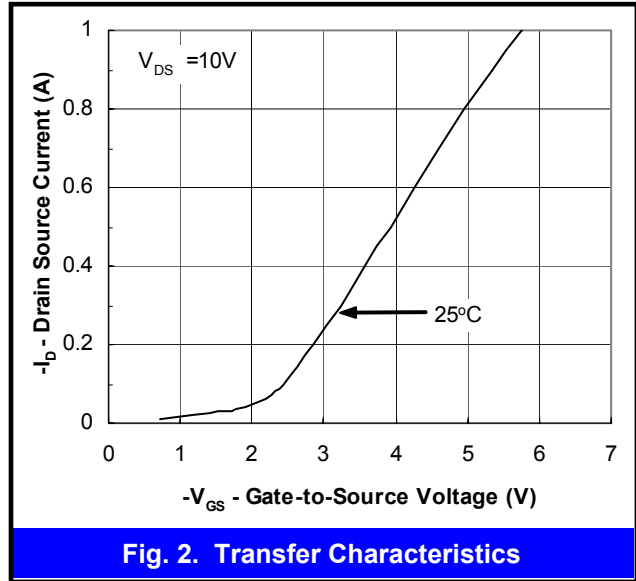
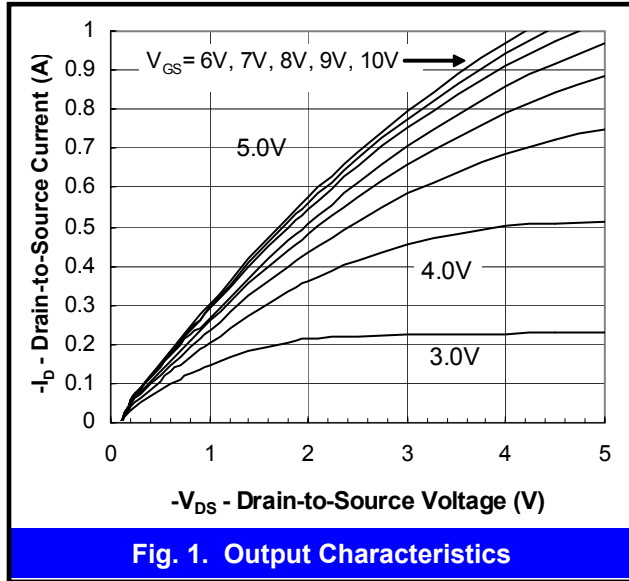
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Turn-On Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> = -30V, I <sub>D</sub> = -0.27A, R <sub>GEN</sub> = 50ohm, V <sub>GS</sub> = -10V	-	7.5	-	ns
Turn-Off Delay Time	t <sub>D(OFF)</sub>		-	25	-	ns

Note 3. Short duration test pulse used to minimize self-heating



## Electrical Characteristic Curves (Each Device)

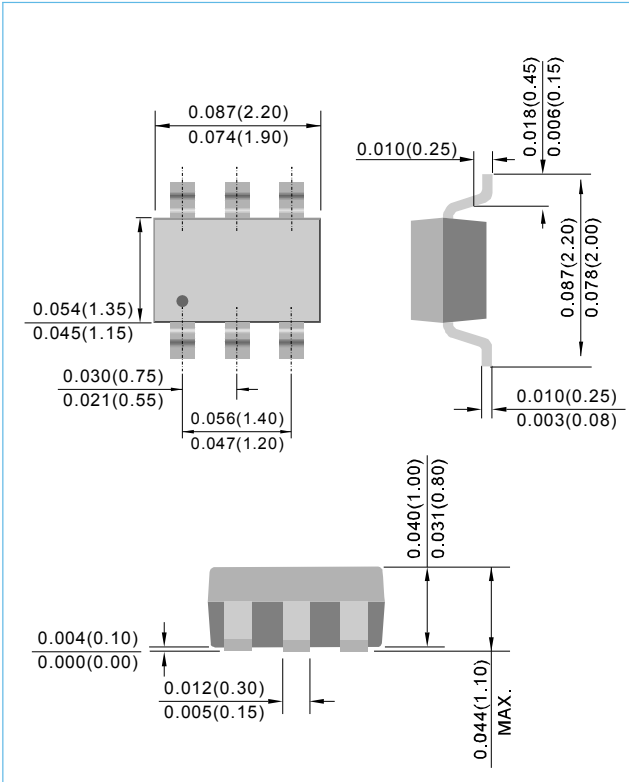
$T_J = 25^\circ\text{C}$  Unless otherwise noted



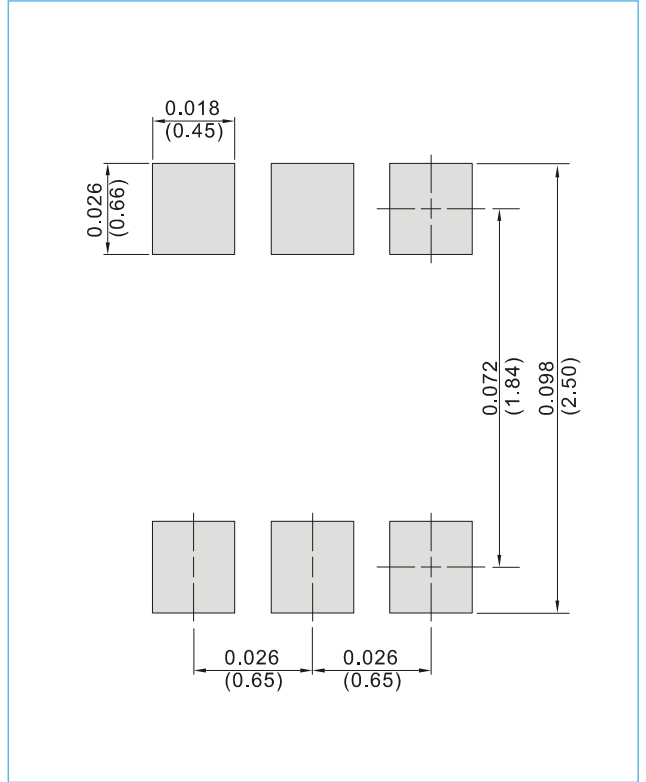


## PACKAGE LAYOUT AND SUGGESTED PAD DIMENSIONS

**SOT-363** Unit : inch(mm)



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## ORDERING INFORMATION

BSS84DW T/R7 - 7 inch reel, 3K units per reel

BSS84DW T/R13 - 13 inch reel, 10K units per reel



# BSS84DW

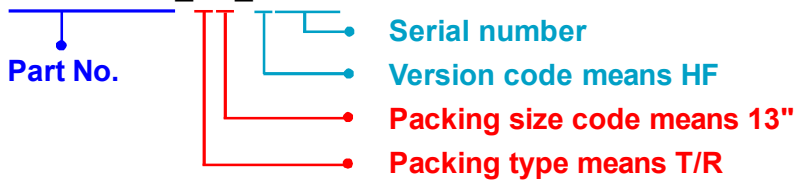
## Part No\_packing code\_Version

BSS84DW\_R1\_00001

BSS84DW\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



## BSS84DW

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