



### **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**  $T_{J} = 25^{\circ}C$  Unless otherwise noted

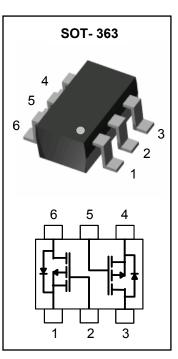
Rating	Symbol	Value	Units
Drain-Source Voltage	V <sub>DSS</sub>	- 50	V
Drain-Gate Voltage (Note 1)	V <sub>DGR</sub>	- 50	V
Gate-Source Voltage	V <sub>GSS</sub>	± 20	V
Drain Current	۱ <sub>D</sub>	130	mA
Total Power Dissipation (Note 2)	PD	200	mW
Operating Junction Temperature Range	Τ <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

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

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Units
Thermal Resistance, Junction to Ambient (Note 2)	R <sub>thja</sub>	625	°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	Тур	Max	Units
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	Ι <sub>D</sub> = -250μΑ, V <sub>GS</sub> = 0V	-50	-	-	V
		V <sub>DS</sub> = -50V, V <sub>GS</sub> = 0V, T <sub>J</sub> =25°C	-	-	-15	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -50V, V <sub>GS</sub> = 0V, T <sub>J</sub> =125°C	-	-	-60	μA
		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	Тур	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-Resistanc	R <sub>DS(ON)</sub>	V <sub>GS</sub> = -5V, I <sub>D</sub> = -0.1A	-	3.8	10	Ohms
Forward Transconductance	9 <sub>FS</sub>	V <sub>DS</sub> = -25V, I <sub>D</sub> = -0.1A	0.05	-	-	S

#### **DYNAMIC CHARACTERISTICS**

Parameter	Symbol	Conditions	Min	Тур	Мах	Units
Input Capacitance	Ciss	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

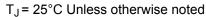
Parameter	Symbol	Conditions	Min	Тур	Мах	Units
Turn-On Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> = -30V, I <sub>D</sub> = -0.27A,	-	7.5	-	ns
Turn-Off Delay Time	t <sub>D(OFF)</sub>	D = 50  obm  V = 10 V	-	25	-	ns

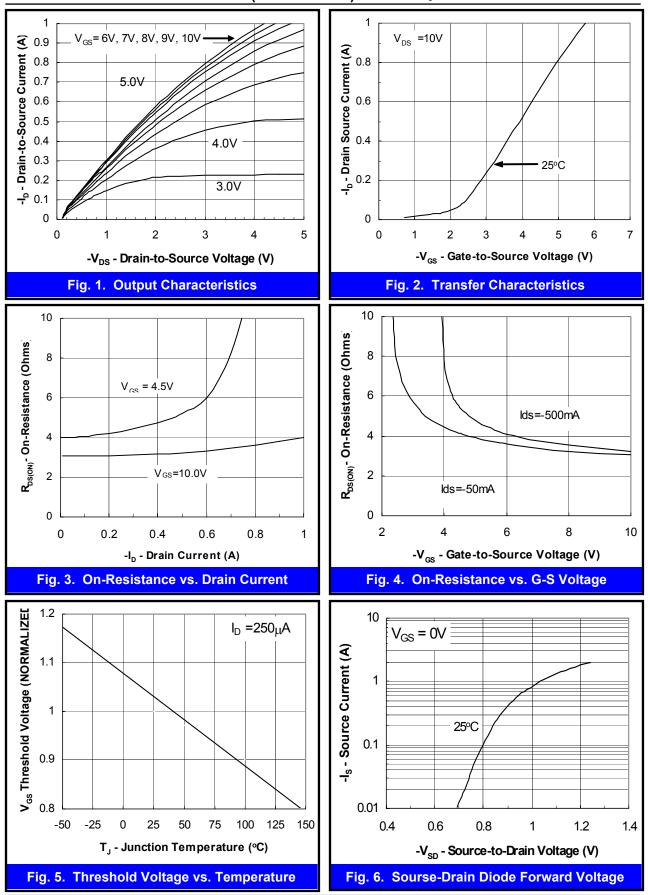
Note 3. Short duration test pulse used to minimize self-heating





#### **Electrical Characteristic Curves (Each Device)**





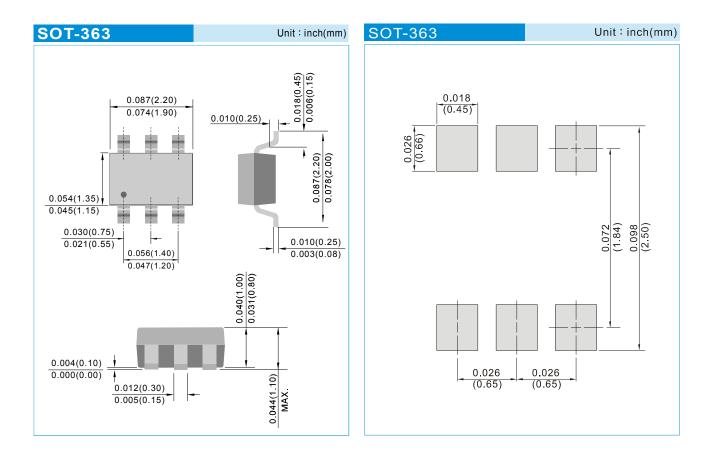
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#### PACKAGE LAYOUT AND SUGGESTED PAD DIMENSIONS



#### **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 XX					Version Code XXXXX			
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)	Α	N/A	0	HF	0	serial number		
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number		
Bulk Packing (B/P)	В	13"	2					
Tube Packing (T/P)	т	26mm	X					
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y					
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U					
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D					





# BSS84DW

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