



## BSS84ZDW

Preliminary

Power MOSFET

### 0.13A, 50V P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

#### DESCRIPTION

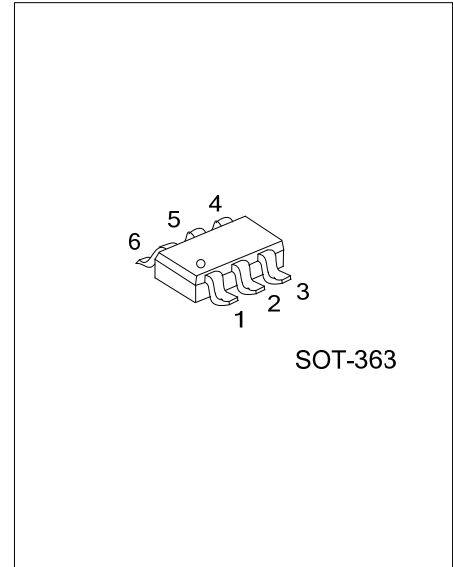
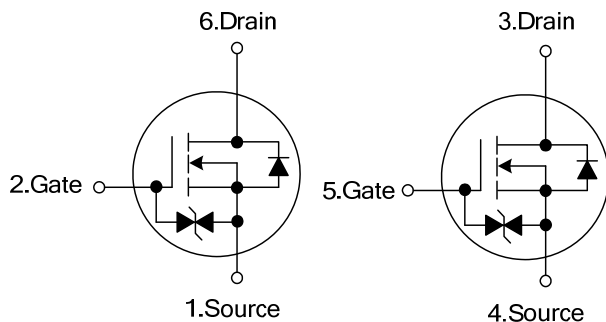
These P-Channel enhancement mode field vertical D-MOS transistors are in a SOT-363 SMD package, and in most applications they require up to 0.13A DC and can deliver current up to 0.52A.

This product is particularly suited to low voltage applications requiring a low current high side switch.

#### FEATURES

\*  $R_{DS(ON)} < 10\Omega$  @  $V_{GS} = -4.5V$ ,  $I_D = -0.1A$

#### SYMBOL

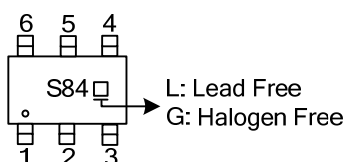


#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
BSS84ZWL-AL6-R	BSS84ZWG-AL6-R	SOT-363	S1	G1	D2	S2	G2	D1	Tape Reel

BSS84ZDWG-AL6-R	(1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free
-----------------	--	---

#### MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	$V_{DS}$	-50	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	DC	-0.13	A
	Pulse	-0.52	
Power Dissipation	$P_D$	0.36	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	350	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-50			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-50V, V <sub>GS</sub> =0V			-15	μA
Gate-Body Leakage, Forward	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±10	μA
ON CHARACTERISTICS (Note)						
Gate-Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-1m A	-0.8	-1.7	-2	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-0.1A		1.2	10	Ω
On-State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-10 V, V <sub>DS</sub> =-5V	-0.6			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-25V, I <sub>D</sub> =-0.1A	0.05	0.6		S
DYNAMIC PARAMETERS						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz		73		pF
Output Capacitance	C <sub>OSS</sub>			10		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			5		pF
SWITCHING PARAMETERS (Note)						
Total Gate Charge	Q <sub>G</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-0.1A		0.9	1.3	nC
Gate Source Charge	Q <sub>GS</sub>			0.2		nC
Gate Drain Charge	Q <sub>GD</sub>			0.3		nC
Turn-ON Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> =-30V, I <sub>D</sub> =-0.1A,V <sub>GS</sub> =-10V, R <sub>G</sub> =6Ω,		2.5	5	ns
Turn-ON Rise Time	t <sub>R</sub>			6.3	13	ns
Turn-OFF Delay Time	t <sub>D(OFF)</sub>			10	20	ns
Turn-OFF Fall-Time	t <sub>F</sub>			4.8	9.6	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> =-0.13A (Note)		-0.8	-1.2	V
Max. Diode Forward Current	I <sub>S</sub>				-0.13	A
Pulsed Drain-Source Current	I <sub>Sm</sub>				-0.52	A

Note: Pulse test, pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.