



## BSS84ZDW

Preliminary

Power MOSFET

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

#### DESCRIPTION

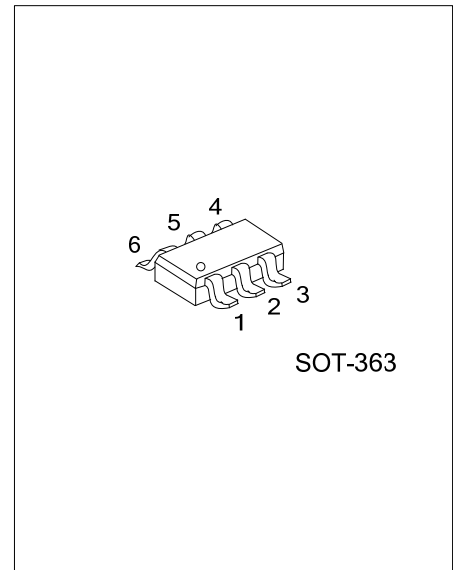
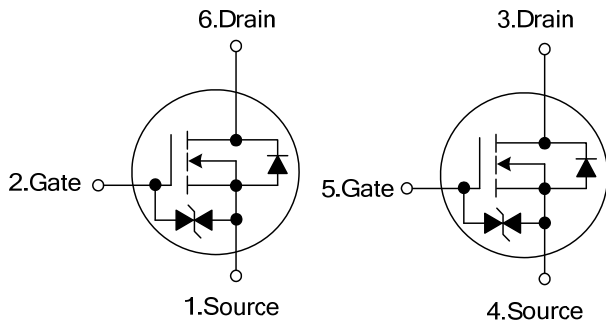
These P-Channel enhancement mode field vertical D-MOS transistors are in a SOT-363 SMD package, and in most applications they require up to 0.13A DC and can deliver current up to 0.52A.

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

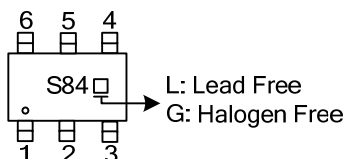


#### ORDERING INFORMATION

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
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#### MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	$V_{DSS}$	-50	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	DC Pulse	$I_D$	-0.13
			-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
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0\text{V}, I_D=-250\mu\text{A}$	-50			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-50\text{V}, V_{GS}=0\text{V}$			-15	$\mu\text{A}$
Gate-Body Leakage, Forward	$I_{GSS}$	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			$\pm 10$	$\mu\text{A}$
<b>ON CHARACTERISTICS (Note)</b>						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-1\text{mA}$	-0.8	-1.7	-2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5\text{V}, I_D=-0.1\text{A}$		1.2	10	$\Omega$
On-State Drain Current	$I_{D(ON)}$	$V_{GS}=-10\text{V}, V_{DS}=-5\text{V}$	-0.6			A
Forward Transconductance	$g_{FS}$	$V_{DS}=-25\text{V}, I_D=-0.1\text{A}$	0.05	0.6		S
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS}=-25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		73		pF
Output Capacitance	$C_{OSS}$			10		pF
Reverse Transfer Capacitance	$C_{RSS}$			5		pF
<b>SWITCHING PARAMETERS (Note)</b>						
Total Gate Charge	$Q_G$	$V_{DS}=-30\text{V}, V_{GS}=-10\text{V}, I_D=-0.1\text{A}$		0.9	1.3	nC
Gate Source Charge	$Q_{GS}$			0.2		nC
Gate Drain Charge	$Q_{GD}$			0.3		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=-30\text{V}, I_D=-0.1\text{A}, V_{GS}=-10\text{V}, R_G=6\Omega,$		2.5	5	ns
Turn-ON Rise Time	$t_R$			6.3	13	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			10	20	ns
Turn-OFF Fall-Time	$t_F$			4.8	9.6	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0\text{V}, I_S=-0.13\text{A}$ (Note)		-0.8	-1.2	V
Max. Diode Forward Current	$I_S$				-0.13	A
Pulsed Drain-Source Current	$I_{Sm}$				-0.52	A

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

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