



## BSS84Z

Preliminary

Power MOSFET

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

#### DESCRIPTION

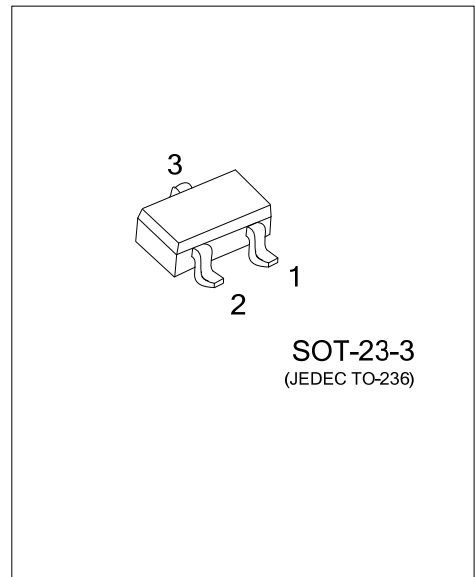
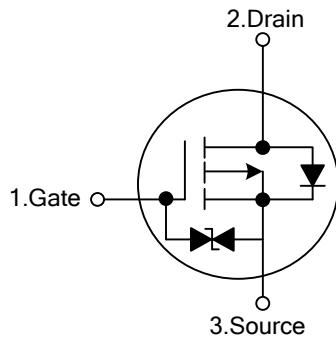
These P-Channel enhancement mode field vertical D-MOS transistors are in a SOT-23-3 SMD package, and in most applications they require up to 0.13A DC and can deliver current up to 0.52A.

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

#### FEATURES

\*  $R_{DS(ON)}=10\Omega @ V_{GS}=-5V$

#### SYMBOL



SOT-23-3  
(JEDEC TO-236)

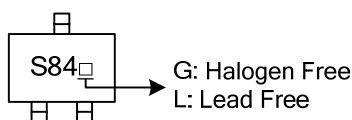
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BSS84ZL-AE2-R	BSS84ZG-AE2-R	SOT-23-3	S	G	D	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source

<p>BSS84ZL-AE2-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) R: Tape Reel (2) AE2: SOT-23-3 (3) G: Halogen Free, L: Lead Free</p>
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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	A
			-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	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-50V, V_{GS}=0V$			-15	$\mu A$
Gate-Body Leakage, Forward	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
<b>ON CHARACTERISTICS (Note)</b>						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-1m A$	-0.8	-1.7	-2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-5V, I_D=-0.1A$		1.2	10	$\Omega$
		$V_{GS}=-55V, I_D=-0.1A, T_J=125^\circ\text{C}$		1.9	17	
On-State Drain Current	$I_{D(ON)}$	$V_{GS}=-10V, V_{DS}=-5V$	-0.6			A
Forward Transconductance	$g_{FS}$	$V_{DS}=-25V, I_D=-0.1A$	0.05	0.6		S
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		73		pF
Output Capacitance	$C_{OSS}$			10		pF
Reverse Transfer Capacitance	$C_{RSS}$			5		pF
<b>SWITCHING PARAMETERS (Note)</b>						
Total Gate Charge	$Q_G$	$V_{DS}=-30V, V_{GS}=-10V, I_D=-0.1A$		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	$t_{D(ON)}$	$V_{DD}=-30V, I_D=-0.1A, V_{GS}=-10V, R_G=6\Omega,$		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	$V_{SD}$	$V_{GS}=0V, I_S=-0.26A$ (Note)		-0.8	-1.2	V
Max. Diode Forward Current	$I_S$				-0.13	A

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

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