



BSS84Z

Preliminary

Power MOSFET

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

DESCRIPTION

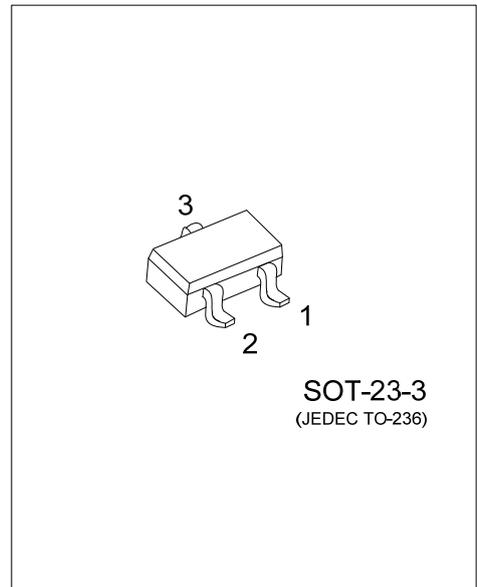
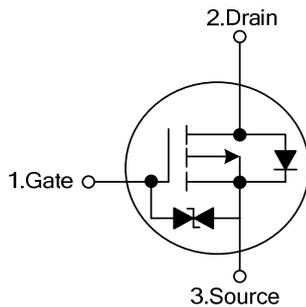
These P-Channel enhancement mode field vertical D-MOS transistors are in a SOT-23-3 SMD package, and in most applications they require up to 0.13A DC and can deliver current up to 0.52A.

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

FEATURES

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

SYMBOL



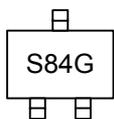
ORDERING INFORMATION

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

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

<p>BSS84ZG-AE2-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE2: SOT-23-3</p> <p>(3) G: Halogen Free and 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}	± 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	θ_{JA}	350	$^\circ\text{C}/\text{W}$

■ 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_{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	μA
Gate-Body Leakage, Forward	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 10	μA
ON CHARACTERISTICS (Note)						
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	Ω
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
DYNAMIC PARAMETERS						
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
SWITCHING PARAMETERS (Note)						
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
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
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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