



## BSS84Z

Power MOSFET

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

#### DESCRIPTION

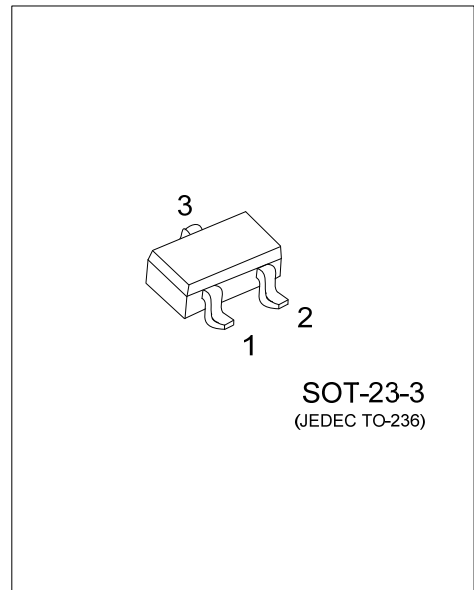
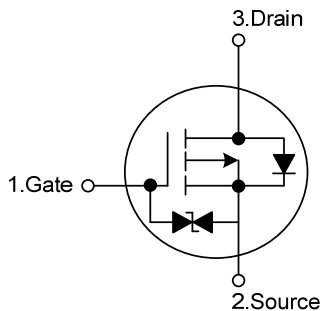
These P-Channel enhancement mode field vertical D-MOS transistors are in a SOT-23-3 SMD package, and in most applications they require up to -0.13A DC and can deliver current up to -0.52A.

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

#### FEATURES

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

#### SYMBOL



SOT-23-3  
(JEDEC TO-236)

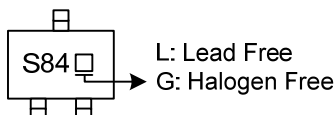
#### ORDERING INFORMATION

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

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

<p>BSS84ZG-AE2-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) AE2: SOT-23-3</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
--	--

#### 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 CHARACTERISTICS

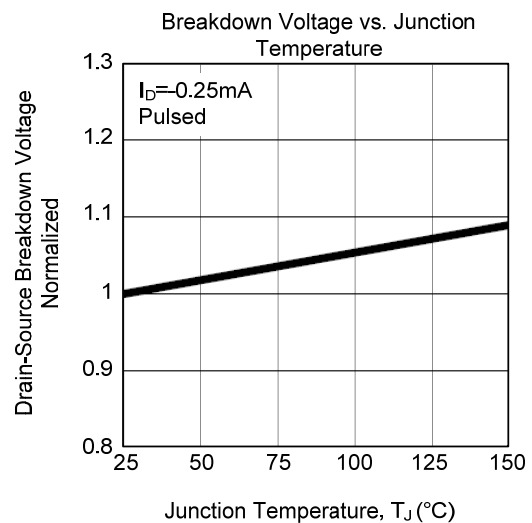
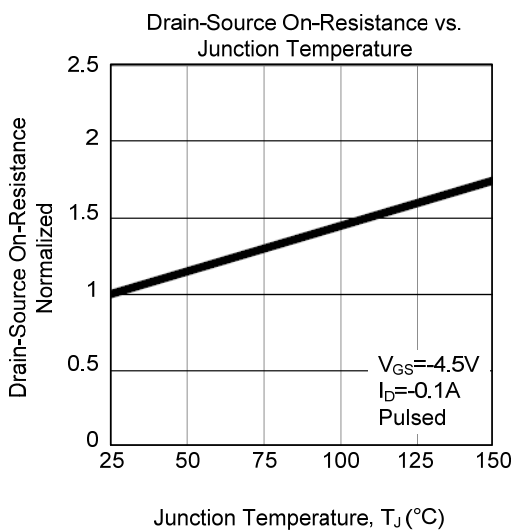
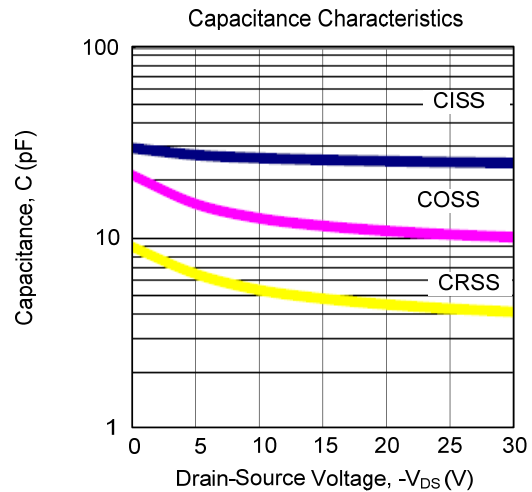
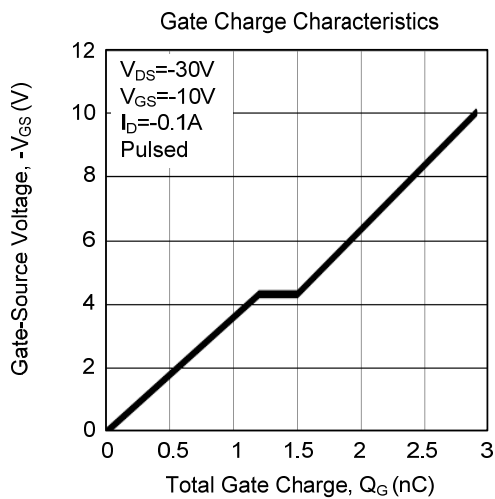
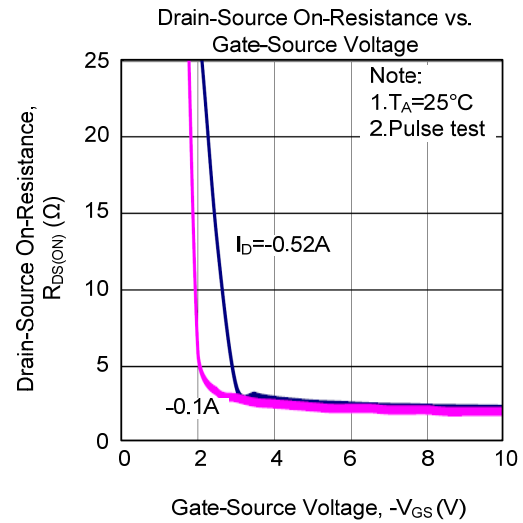
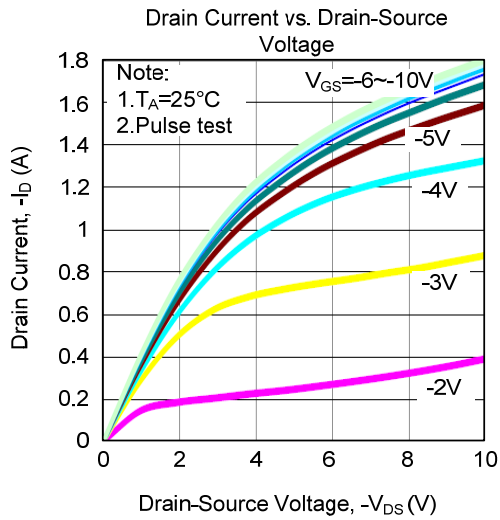
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	350	$^\circ\text{C/W}$

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

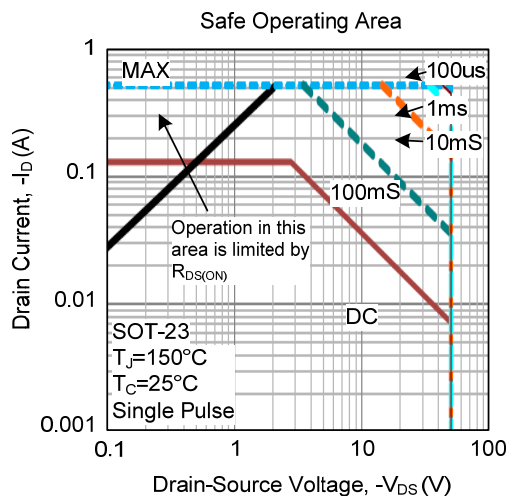
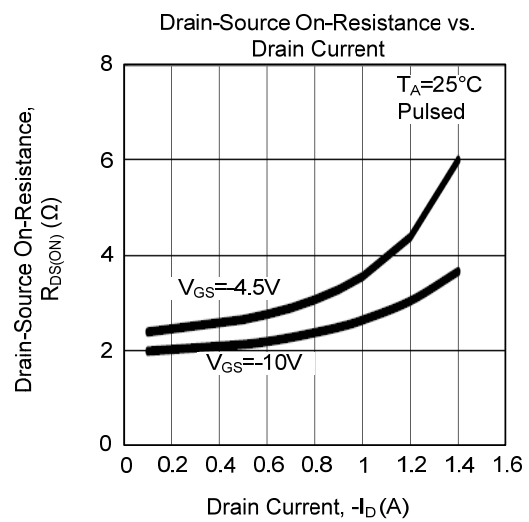
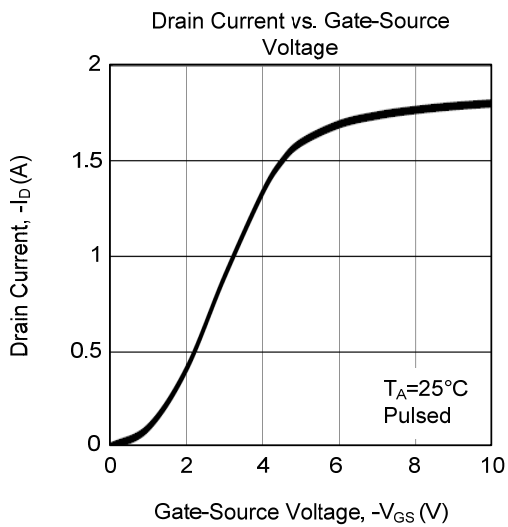
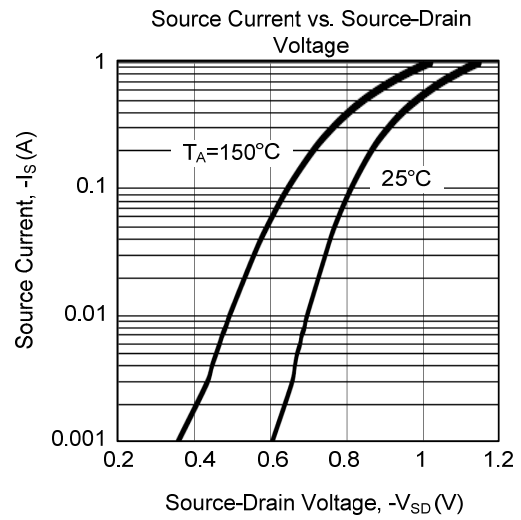
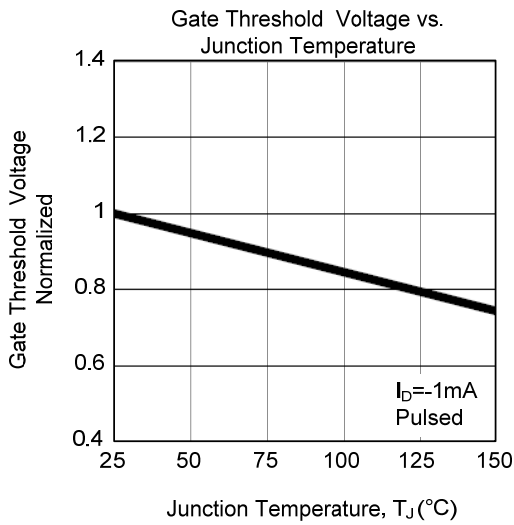
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-50			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-50V, V_{GS}=0V$			-15	$\mu A$
Gate-Body Leakage, Forward	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
<b>ON CHARACTERISTICS (Note)</b>						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-1m A$	-0.8		-2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-0.1A$			10	$\Omega$
On-State Drain Current	$I_{D(ON)}$	$V_{GS}=-10 V, V_{DS}=-5V$	-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	$C_{ISS}$	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		25		pF
Output Capacitance	$C_{OSS}$			10		pF
Reverse Transfer Capacitance	$C_{RSS}$			5		pF
<b>SWITCHING PARAMETERS (Note)</b>						
Total Gate Charge	$Q_G$	$V_{DS}=-30V, V_{GS}=-10V, I_D=-0.1A$ $I_G=-1mA$ (Note 1, 2)		2.9		nC
Gate Source Charge	$Q_{GS}$			1.2		nC
Gate Drain Charge	$Q_{GD}$			0.3		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=-30V, V_{GS}=-10V,$ $I_D=-0.1A, R_G=6\Omega$ (Note 1, 2)		4		ns
Turn-ON Rise Time	$t_R$			12		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			18		ns
Turn-OFF Fall-Time	$t_F$			40		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Max. Diode Forward Current	$I_S$				-0.13	A
Pulsed Drain-Source Current	$I_{SM}$				-0.52	A
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=-0.13A$ (Note)		-0.8	-1.2	V

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

## TYPICAL CHARACTERISTICS



### TYPICAL CHARACTERISTICS (Cont.)



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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.