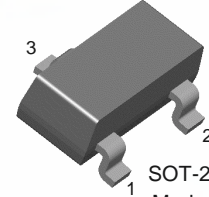


**FAIRCHILD**  
SEMICONDUCTOR®

## BSR56

### N-Channel Low-Frequency Low-Noise Amplifier

- This device is designed for low-power chopper or switching application sourced from process 51



SOT-23  
Mark: M4  
1. Drain 2. Source 3. Gate

### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{DGO}$	Drain-Gate Voltage	40	V
$V_{GSO}$	Gate-Source Voltage	- 40	V
$I_{GF}$	Forward Gate Current	50	mA
$P_{tot}$	Total Power Dissipation up to $T_{amb}=40^\circ\text{C}$	250	mW
$T_{STG}$	Storage Temperature Range	- 55 ~ 150	$^\circ\text{C}$
$T_J$	Junction Temperature	150	$^\circ\text{C}$

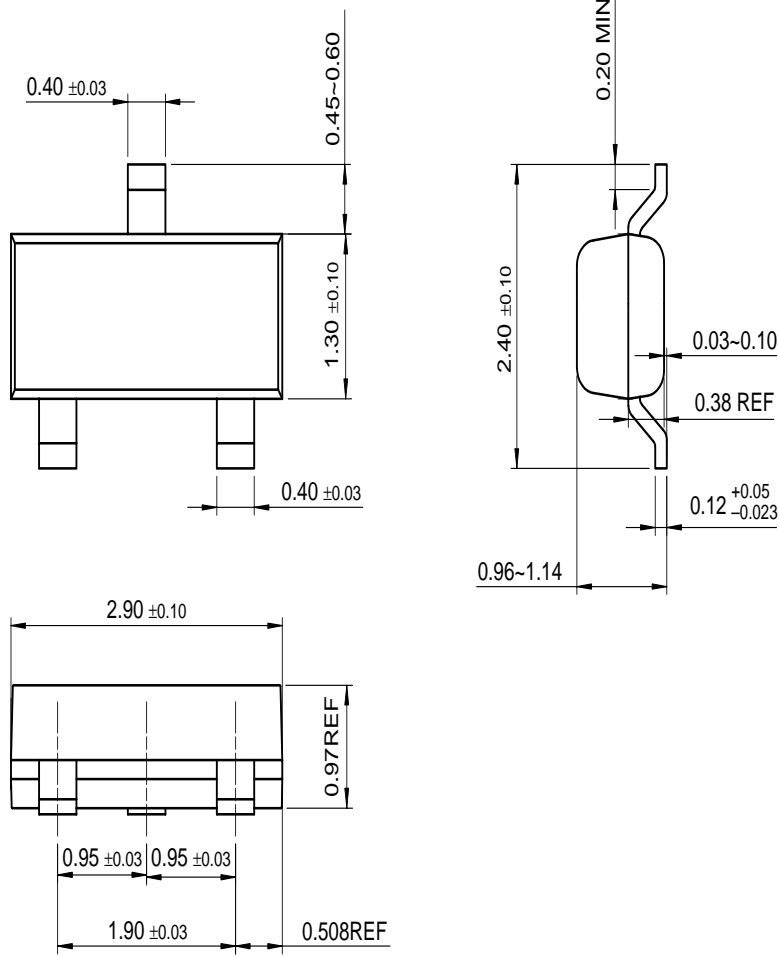
### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{GSS}$	Gate-Source Voltage	$V_{DS} = 0V, I_C = 1\mu\text{A}$	40			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = 20V$			1	nA
$I_{DSS}$	Zero-Gate Voltage Drain Current	$V_{DS} = 15V, V_{GS} = 0V$	50			mA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	$V_{DS} = 15V, I_D = 0.5\text{nA}$	4		10	V
$V_{DS(on)}$	Drain-Source On Voltage	$V_{GS} = 0V, I_D = 20\text{mA}$			750	mV
$r_{ds(on)}$	Drain-Source On Reverse	$V_{GS} = 0V, I_D = 0$			25	$\Omega$
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 10V, V_{GS} = 0V$			5	pF
$t_d$	Delay Time	$V_{DD} = 10V, V_{GS(on)} = 0V$			6	nS
$t_r$	Rise Time	$I_D = 20\text{mA}, V_{GS(off)} = 10V$			3	nS
$t_{off}$	Turn-off Time				25	nS



# Package Dimensions

## SOT-23



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOMET™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic™
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I <sup>2</sup> C™	OCX™	RapidConfigure™	UHC™
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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Datasheet Identification	Product Status	Definition
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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