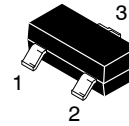


N-Channel JFET Low-Frequency Low-Noise Amplifier



1. Drain
2. Source
3. Gate

BSR58

SOT-23
CASE 318-08

Description

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

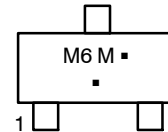
ABSOLUTE MAXIMUM RATINGS

($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DG0}	Drain-Source 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 to +150	$^\circ\text{C}$
T_J	Junction Temperature	150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

MARKING DIAGRAM



- M6 = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BSR58	SOT-23 (Pb-Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

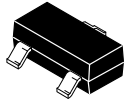
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{GSS}	Gate-Source Voltage	$V_{DS} = 0\text{ V}, I_C = 1.0\ \mu\text{A}$	40.0	-	-	V
I_{GSS}	Gate Reverse Current	$V_{GS} = 20\text{ V}$	-	-	1.0	nA
I_{DSS}	Zero-Gate Voltage Drain Current	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V}$	8.0	-	80.0	mA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	$V_{DS} = 15\text{ V}, I_D = 0.5\text{ nA}$	0.8	-	4.0	V
$V_{DS(on)}$	Drain-Source On Voltage	$V_{GS} = 0\text{ V}, I_D = 5\text{ mA}$	-	-	0.4	V
$r_{ds(on)}$	Drain-Source On Reverse	$V_{GS} = 0\text{ V}, I_D = 0\text{ mA}$	-	-	60.0	Ω
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 0\text{ V}, V_{GS} = 10\text{ V}$	-	-	5.0	pF
t_d	Delay Time	$V_{DD} = 10\text{ V}, V_{GS(on)} = 0\text{ V}$ $I_D = 10\text{ mA}, V_{GS(off)} = 10.0\text{ V}$	-	-	10.0	ns
t_r	Rise Time		-	-	10.0	
t_{off}	Turn-off Time		-	-	100.0	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

MECHANICAL CASE OUTLINE

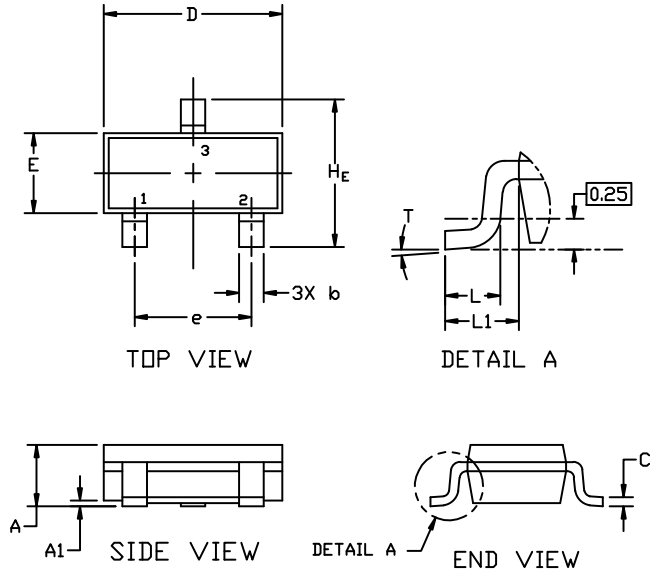
PACKAGE DIMENSIONS



SOT-23 (TO-236)
CASE 318
ISSUE AT

DATE 01 MAR 2023

SCALE 4:1

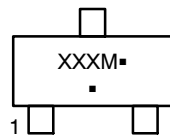


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M,1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

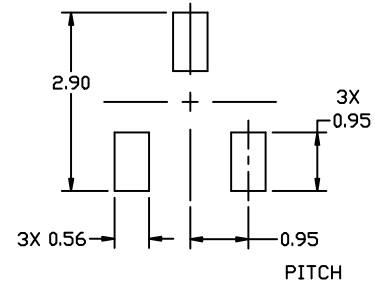
DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
H _E	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	---	10°	0°	---	10°

GENERIC MARKING DIAGRAM*



- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



RECOMMENDED MOUNTING FOOTPRINT

* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

STYLES ON PAGE 2

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MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS



SOT-23 (TO-236)
CASE 318
ISSUE AT

DATE 01 MAR 2023

- | | | | | | |
|---|---|---|---|---|---|
| STYLE 1 THRU 5:
CANCELLED | STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR | STYLE 7:
PIN 1. EMITTER
2. BASE
3. COLLECTOR | STYLE 8:
PIN 1. ANODE
2. NO CONNECTION
3. CATHODE | | |
| STYLE 9:
PIN 1. ANODE
2. ANODE
3. CATHODE | STYLE 10:
PIN 1. DRAIN
2. SOURCE
3. GATE | STYLE 11:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE | STYLE 12:
PIN 1. CATHODE
2. CATHODE
3. ANODE | STYLE 13:
PIN 1. SOURCE
2. DRAIN
3. GATE | STYLE 14:
PIN 1. CATHODE
2. GATE
3. ANODE |
| STYLE 15:
PIN 1. GATE
2. CATHODE
3. ANODE | STYLE 16:
PIN 1. ANODE
2. CATHODE
3. CATHODE | STYLE 17:
PIN 1. NO CONNECTION
2. ANODE
3. CATHODE | STYLE 18:
PIN 1. NO CONNECTION
2. CATHODE
3. ANODE | STYLE 19:
PIN 1. CATHODE
2. ANODE
3. CATHODE-ANODE | STYLE 20:
PIN 1. CATHODE
2. ANODE
3. GATE |
| STYLE 21:
PIN 1. GATE
2. SOURCE
3. DRAIN | STYLE 22:
PIN 1. RETURN
2. OUTPUT
3. INPUT | STYLE 23:
PIN 1. ANODE
2. ANODE
3. CATHODE | STYLE 24:
PIN 1. GATE
2. DRAIN
3. SOURCE | STYLE 25:
PIN 1. ANODE
2. CATHODE
3. GATE | STYLE 26:
PIN 1. CATHODE
2. ANODE
3. NO CONNECTION |
| STYLE 27:
PIN 1. CATHODE
2. CATHODE
3. CATHODE | STYLE 28:
PIN 1. ANODE
2. ANODE
3. ANODE | | | | |

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