BFR30LT1, BFR31LT1

JFET A lifie

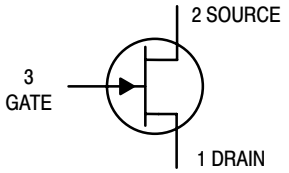
N−Channel

Features

- Pb−Free Package is Available

ON Semiconductor®

http://onsemi.com



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain−Source Voltage	V_{DS}	25	Vdc
Gate−Source Voltage	V_{GS}	25	Vdc

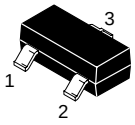
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

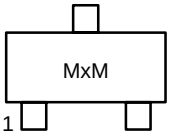
Characteristic	Symbol	Max	Unit
Total Device Dissipation (Note 1) T_A = 25°C Derate above 25°C	P_D	 225 1.8	 mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C Derate above 25°C	P_D	 300 2.4	 mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°C

1. Device mounted on FR4 glass epoxy printed circuit board using the recommended footprint.
2. Alumina = 0.4 x 0.3 x 0.024 in 99.5% alumina.

MARKING DIAGRAM



SOT−23
CASE 318
STYLE 10



x = 1 or 2
M = Date Code

ORDERING INFORMATION

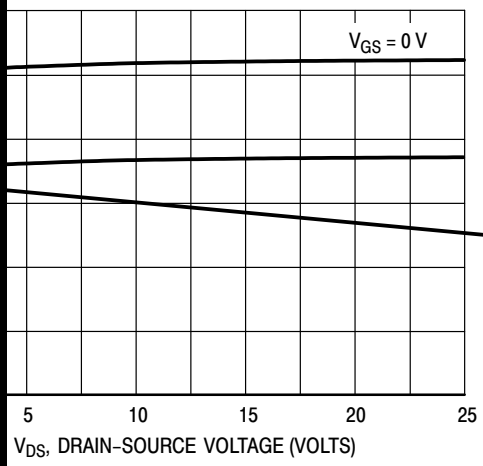
Device	Package	Shipping†
BFR30LT1	SOT−23	3000/Tape & Reel
BFR30LT1G	SOT−23 (Pb−Free)	3000/Tape & Reel
BFR31LT1	SOT−23	3000/Tape & Reel
BFR31LT1G	SOT−23 (Pb−Free)	3000/Tape & Reel

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

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic			Symbol	Min	Max	Unit
OFF CHARACTERISTICS						
Gate Reverse Current	(V_{GS} = 10 Vdc, V_{DS} = 0)		I_{GSS}	−	0.2	nAdc
Gate Source Cutoff Voltage	(I_D = 0.5 nAdc, V_{DS} = 10 Vdc)	BFR30 BFR31	$V_{GS(OFF)}$	− −	5.0 2.5	Vdc
Gate Source Voltage	(I_D = 1.0 mAdc, V_{DS} = 10 Vdc)	BFR30 BFR31	V_{GS}	−0.7 −	−3.0 −1.3	Vdc
	(I_D = 50 μAdc, V_{DS} = 10 Vdc)	BFR30 BFR31		− −	−4.0 −2.0	
ON CHARACTERISTICS						
Zero−Gate−Voltage Drain Current	(V_{DS} = 10 Vdc, V_{GS}					

TYPICAL CHARACTERISTICS



ure 3. Typical Drain Characteristics

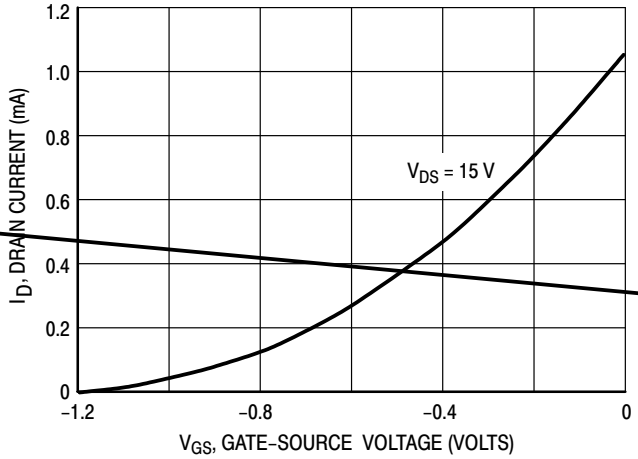
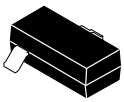


Figure 4. Common Source Transfer Characteristics



SCALE 4:1

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024

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 22:
PIN 1. RETURN
2. OUTPUT
3. INPUT

STYLE 23:
PIN 1. ANODE
2. ANODE
3. CATHODE
3.