

N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

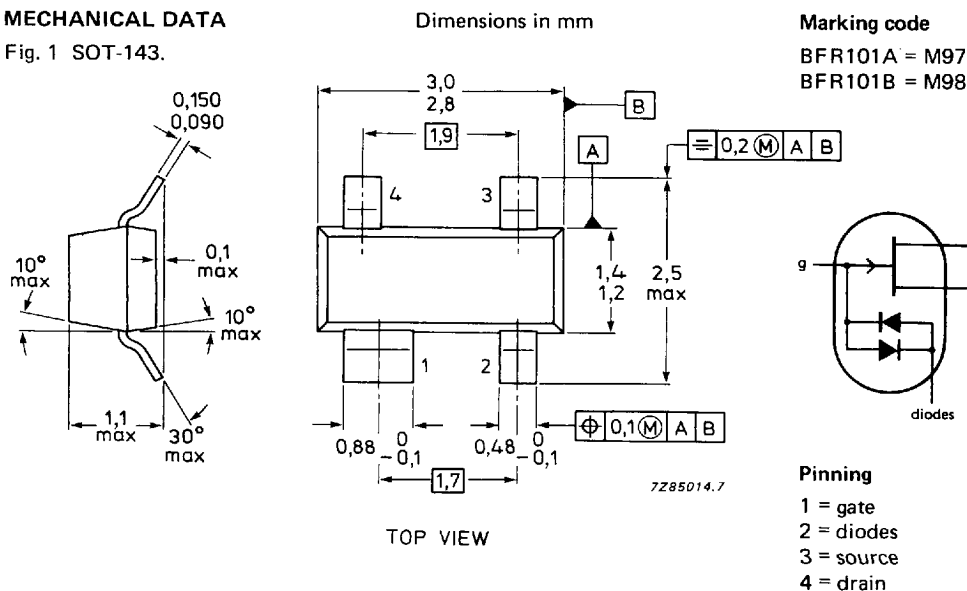
Symmetrical n-channel silicon junction field-effect transistor, designed primarily for use as a source follower with the input protected against successive voltage surges by a forward and reverse integrated diode.

QUICK REFERENCE DATA

Drain-source voltage	$\pm V_{DS}$	max.	30 V
Gate-source voltage (open drain)	$-V_{GS}$	max.	30 V
Total power dissipation up to $T_{amb} = 60^\circ\text{C}$	P_{tot}	max.	200 mW
Drain current			
$V_{DS} = 6\text{ V}; V_{GS} = 0$: BFR101A	I_{DSS}	0,2 to 1,5 mA	
$V_{DS} = 6\text{ V}; V_{GS} = 0$: BFR101B	I_{DSS}	1,0 to 5,0 mA	
Transfer admittance (common source)			
$V_{DS} = 6\text{ V}; V_{GS} = 0$; $f = 1\text{ kHz}$: BFR101A	$ y_{fs} $	>	1,2 mS
$V_{DS} = 6\text{ V}; V_{GS} = 0$; $f = 1\text{ kHz}$: BFR101B	$ y_{fs} $	>	2,5 mS

MECHANICAL DATA

Fig. 1 SOT-143.



Note: Drain and source are interchangeable.

See also *Soldering recommendations*.

BFR101A
BFR101B

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Drain-source voltage	$\pm V_{DS}$	max.	30 V
Drain-gate voltage (open source)	V_{DGO}	max.	30 V
Gate-source voltage (open drain)	$-V_{GSO}$	max.	30 V
Drain current (d.c.)	I_D	max.	20 mA
Gate current (d.c.)	I_G	max.	10 mA
Total power dissipation up to $T_{amb} = 60\text{ }^{\circ}\text{C}^*$	P_{tot}	max.	200 mW
Storage temperature	T_{stg}		$-65\text{ to }+150\text{ }^{\circ}\text{C}$
Junction temperature	T_j	max.	150 $^{\circ}\text{C}$

THERMAL RESISTANCE

From junction to ambient in free air*	$R_{th\ j-a}$	=	460 K/W
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CHARACTERISTICS with source connected to case for all measurements

 $T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

		BFR101A	BFR101B
Gate leakage current $V_{DS} = 6\text{ V}; I_D = 10\text{ }\mu\text{A}$	$-I_G$	< 5	5 nA
Drain current $V_{DS} = 6\text{ V}; V_{GS} = 0$	I_{DSS}	0,2 to 1,5	1 to 5 mA
Gate-source cut-off voltage $V_{DS} = 6\text{ V}; I_D = 1\text{ }\mu\text{A}$	$-V_{(P)GS}$	0,2 to 1	0,5 to 2,5 V
Small-signal common-source characteristics $V_{DS} = 6\text{ V}; V_{GS} = 0; T_{amb} = 25\text{ }^{\circ}\text{C}$			
Transfer admittance $f = 1\text{ kHz}$	$ Y_{fs} $	> 1,2	2,5 mS
Output admittance at $f = 1\text{ kHz}$	$ Y_{os} $	typ. 10	50 mS
Input capacitance at $f = 1\text{ MHz}$ diodes not connected	C_{is}	< 5	5 pF
Diode capacitance $V_D = 0$; source and drain not connected	C_d	typ. 0,7	0,7 pF
Diode forward voltage $\pm I_F = 10\text{ mA}$	V_F	0,7 to 1,2	0,7 to 1,2 V

* Device mounted on a ceramic substrate of 8 mm x 10 mm x 0,7 mm.