

# DATA SHEET

## **Selection guide** **Small-signal field-effect transistors**

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## Small-signal field-effect transistors

## Selection guide

## N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTORS

| TYPE NUMBER  | PACKAGE       | $\pm V_{DS}$<br>(V) | CHARACTERISTICS |                                |                     |                    |                  | PAGE |
|--|---------------|---------------------|-----------------|--------------------------------|---------------------|--------------------|------------------|------|
|  |               |                     | $I_G$<br>(mA)   | $I_{DSS}$<br>min - max<br>(mA) | $-V_{(P)GS}$<br>(V) | $ y_{fs} $<br>(mS) | $C_{rs}$<br>(pF) |      |
| <b>General purpose analog applications</b>                               |               |                     |                 |                                |                     |                    |                  |      |
| J210   | TO-92         | 25                  | 10              | 2 to 15                        | 1 to 3              | 4                  | 0.8              |      |
| J211   | TO-92         | 25                  | 10              | 7 to 20                        | 2.5 to 4.5          | 6                  | 0.8              |      |
| J212   | TO-92         | 25                  | 10              | 15 to 40                       | 4 to 6              | 7                  | 0.8              |      |
| PMBFJ210   | SOT23         | 25                  | 10              | 2 to 15                        | 1 to 3              | 4                  | 0.8              |      |
| PMBFJ211   | SOT23         | 25                  | 10              | 7 to 20                        | 2.5 to 4.5          | 6                  | 0.8              |      |
| PMBFJ212   | SOT23         | 25                  | 10              | 15 to 40                       | 4 to 6              | 7                  | 0.8              |      |
| <b>DC, LF and HF amplifiers</b>  |               |                     |                 |                                |                     |                    |                  |      |
| BF245A   | TO-92 variant | 30                  | 10              | 2 to 6.5                       | <8                  | 3 to 6.5           | 1.1              |      |
| BF245B   | TO-92 variant | 30                  | 10              | 6 to 15                        | <8                  | 3 to 6.5           | 1.1              |      |
| BF245C   | TO-92 variant | 30                  | 10              | 12 to 25                       | <8                  | 3 to 6.5           | 1.1              |      |
| BF545A   | SOT23         | 30                  | 10              | 2 to 6.5                       | 0.4 to 7.5          | 3 to 6.5           | 0.8              |      |
| BF545B   | SOT23         | 30                  | 10              | 6 to 15                        | 0.4 to 7.5          | 3 to 6.5           | 0.8              |      |
| BF545C   | SOT23         | 30                  | 10              | 12 to 25                       | 0.4 to 7.5          | 3 to 6.5           | 0.8              |      |
| BF556A   | SOT23         | 30                  | 10              | 3 to 7                         | 0.5 to 7.5          | 4.5                | 0.8              |      |
| BF556B   | SOT23         | 30                  | 10              | 6 to 13                        | 0.5 to 7.5          | 4.5                | 0.8              |      |
| BF556C   | SOT23         | 30                  | 10              | 11 to 18                       | 0.5 to 7.5          | 4.5                | 0.8              |      |
| <b>Preamplifiers for AM tuners in car radios</b>                         |               |                     |                 |                                |                     |                    |                  |      |
| BF851A   | TO-92         | 25                  | 10              | 2 to 6.5                       | 0.2 to 1.0          | 12                 | 2.4              |      |
| BF851B   | TO-92         | 25                  | 10              | 6 to 15                        | 0.5 to 1.5          | 16                 | 2.4              |      |
| BF851C   | TO-92         | 25                  | 10              | 12 to 25                       | 0.8 to 2.0          | 20                 | 2.4              |      |
| BF861A   | SOT23         | 25                  | 10              | 2 to 6.5                       | 0.2 to 1.0          | 12                 | 2.1              |      |
| BF861B   | SOT23         | 25                  | 10              | 6 to 15                        | 0.5 to 1.5          | 16                 | 2.1              |      |
| BF861C   | SOT23         | 25                  | 10              | 12 to 25                       | 0.8 to 2.0          | 20                 | 2.1              |      |
| <b>RF stages FM portables, car radios, mains radios and mixer stages</b> |               |                     |                 |                                |                     |                    |                  |      |
| BF410A <sup>(1)</sup>  | TO-92 variant | 20                  | 10              | 0.7 to 3                       | typ. 0.8            | 2.5                | 0.5              |      |
| BF410B <sup>(1)</sup>  | TO-92 variant | 20                  | 10              | 2.5 to 7                       | typ. 1.5            | 4                  | 0.5              |      |
| BF410C <sup>(1)</sup>  | TO-92 variant | 20                  | 10              | 6 to 12                        | typ. 2.2            | 6                  | 0.5              |      |
| BF410D <sup>(1)</sup>  | TO-92 variant | 20                  | 10              | 10 to 18                       | typ. 3              | 7                  | 0.5              |      |
| BF510 <sup>(1)</sup>   | SOT23         | 20                  | 10              | 0.7 to 3                       | typ. 0.8            | 2.5                | 0.4              |      |
| BF511 <sup>(1)</sup>   | SOT23         | 20                  | 10              | 2.5 to 7                       | typ. 1.5            | 4                  | 0.4              |      |
| BF512 <sup>(1)</sup>   | SOT23         | 20                  | 10              | 6 to 12                        | typ. 2.2            | 6                  | 0.4              |      |
| BF513 <sup>(1)</sup>   | SOT23         | 20                  | 10              | 10 to 18                       | typ. 3              | 7                  | 0.4              |      |

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## N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTORS (continued)

| TYPE NUMBER                                 | PACKAGE | $\pm V_{DS}$<br>(V) | CHARACTERISTICS |                                |                     |                    |                  | PAGE |
|---|---------|---------------------|-----------------|--------------------------------|---------------------|--------------------|------------------|------|
|   |         |                     | $I_G$<br>(mA)   | $I_{DSS}$<br>min - max<br>(mA) | $-V_{(P)GS}$<br>(V) | $ y_{fs} $<br>(mS) | $C_{rs}$<br>(pF) |      |
| <b>Low level general purpose amplifiers</b> |         |                     |                 |                                |                     |                    |                  |      |
| BFR30                                       | SOT23   | 25                  | 5               | 4 to 10                        | <5                  | 1 to 4             | 1.5              |      |
| BFR31                                       | SOT23   | 25                  | 5               | 1 to 5                         | <2.5                | 1.5 to 4.5         | 1.5              |      |
| <b>General purpose amplifiers</b>           |         |                     |                 |                                |                     |                    |                  |      |
| BFT46                                       | SOT23   | 25                  | 5               | 0.2 to 1.5                     | <1.2                | >1                 | 1.5              |      |
| <b>AM input stages UHF/VHF amplifiers</b>   |         |                     |                 |                                |                     |                    |                  |      |
| PMBF4416                                    | SOT23   | 30                  | 10              | 5 to 15                        | <6                  | 4.5 to 7.5         | <0.8             |      |
| PMBF4416A                                   | SOT23   | 35                  | 10              | 5 to 15                        | 2.5 to 6            | 4.5 to 7.5         | <0.8             |      |
| PMBF5484                                    | SOT23   | 25                  | 10              | 1 to 5                         | 0.3 to 3            | 3 to 6             | <1               |      |
| PMBF5485                                    | SOT23   | 25                  | 10              | 4 to 10                        | 0.5 to 4            | 3.5 to 7           | <1               |      |
| PMBF5486                                    | SOT23   | 25                  | 10              | 8 to 20                        | 2 to 6              | 4 to 8             | <1               |      |
| PMBFJ308                                    | SOT23   | 25                  | 50              | 12 to 60                       | 1 to 6.5            | >10                | 1.3              |      |
| PMBFJ309                                    | SOT23   | 25                  | 50              | 12 to 30                       | 1 to 4              | >10                | 1.3              |      |
| PMBFJ310                                    | SOT23   | 25                  | 50              | 24 to 60                       | 2 to 6.5            | >10                | 1.3              |      |
| PN4416                                      | TO-92   | 30                  | 10              | 5 to 15                        | <6                  | 4.5 to 7.5         | 0.8              |      |
| PN4416A                                     | TO-92   | 35                  | 10              | 5 to 15                        | 2.5 to 6            | 4.5 to 7.5         | 0.8              |      |
| 2N5484                                      | TO-92   | 25                  | 10              | 1 to 5                         | 0.3 to 3            | 3 to 6             | <1               |      |
| 2N5485                                      | TO-92   | 25                  | 10              | 4 to 10                        | 0.5 to 4            | 3.5 to 7           | <1               |      |
| 2N5486                                      | TO-92   | 25                  | 10              | 8 to 20                        | 2 to 6              | 4 to 8             | <1               |      |

**Note**

- Asymmetrical.

## N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTORS FOR SWITCHING

| TYPE NUMBER | PACKAGE | RATINGS         |               | CHARACTERISTICS   |      |                     |      |                                    |                          |                          |                           | PAGE |
|-------------|---------|-----------------|---------------|-------------------|------|---------------------|------|------------------------------------|--------------------------|--------------------------|---------------------------|------|
|             |         | $V_{DS}$<br>(V) | $I_G$<br>(mA) | $I_{DSS}$<br>(mA) |      | $-V_{(P)GS}$<br>(V) |      | $R_{DSon}$<br>max.<br>( $\Omega$ ) | $C_{rs}$<br>max.<br>(pF) | $t_{on}$<br>max.<br>(ns) | $t_{off}$<br>max.<br>(ns) |      |
|             |         |                 |               | min.              | max. | min.                | max. |                                    |                          |                          |                           |      |
| BSR56       | SOT23   | 40              | 50            | 50                | –    | 4                   | 10   | 25                                 | 5                        | –                        | 25                        |      |
| BSR57       | SOT23   | 40              | 50            | 20                | 100  | 2                   | 6    | 40                                 | 5                        | –                        | 50                        |      |
| BSR58       | SOT23   | 40              | 50            | 8                 | 80   | 0.8                 | 4    | 60                                 | 5                        | –                        | 100                       |      |
| J108        | TO-92   | 25              | 50            | 80                | –    | 3                   | 10   | 8                                  | 15                       | typ. 4                   | typ. 6                    |      |
| J109        | TO-92   | 25              | 50            | 40                | –    | 2                   | 6    | 12                                 | 15                       | typ. 4                   | typ. 6                    |      |
| J110        | TO-92   | 25              | 50            | 10                | –    | 0.5                 | 4    | 18                                 | 15                       | typ. 4                   | typ. 6                    |      |
| J111        | TO-92   | 40              | 50            | 20                | –    | 3                   | 10   | 30                                 | typ. 3                   | typ. 13                  | typ. 35                   |      |

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## N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTORS FOR SWITCHING (continued)

| TYPE NUMBER | PACKAGE | RATINGS                |                        | CHARACTERISTICS          |      |                            |      |                                  |                                 |                                 |                                  | PAGE |
|-------------|---------|------------------------|------------------------|--------------------------|------|----------------------------|------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|------|
|             |         | V <sub>DS</sub><br>(V) | I <sub>G</sub><br>(mA) | I <sub>DSS</sub><br>(mA) |      | -V <sub>(P)GS</sub><br>(V) |      | R <sub>DSon</sub><br>max.<br>(Ω) | C <sub>rs</sub><br>max.<br>(pF) | t <sub>on</sub><br>max.<br>(ns) | t <sub>off</sub><br>max.<br>(ns) |      |
|             |         |                        |                        | min.                     | max. | min.                       | max. |                                  |                                 |                                 |                                  |      |
| J112        | TO-92   | 40                     | 50                     | 5                        | –    | 1                          | 5    | 50                               | typ. 3                          | typ. 13                         | typ. 35                          |      |
| J113        | TO-92   | 40                     | 50                     | 2                        | –    | 0.5                        | 3    | 100                              | typ. 3                          | typ. 13                         | typ. 35                          |      |
| PMBF4391    | SOT23   | 40                     | 50                     | 50                       | 150  | 4                          | 10   | 30                               | 3.5                             | 15                              | 20                               |      |
| PMBF4392    | SOT23   | 40                     | 50                     | 25                       | 75   | 2                          | 5    | 60                               | 3.5                             | 15                              | 35                               |      |
| PMBF4393    | SOT23   | 40                     | 50                     | 5                        | 30   | 0.5                        | 3    | 100                              | 3.5                             | 15                              | 50                               |      |
| PMBFJ108    | SOT23   | 25                     | 50                     | 80                       | –    | 3                          | 10   | 8                                | 15                              | typ. 4                          | typ. 6                           |      |
| PMBFJ109    | SOT23   | 25                     | 50                     | 40                       | –    | 2                          | 6    | 12                               | 15                              | typ. 4                          | typ. 6                           |      |
| PMBFJ110    | SOT23   | 25                     | 50                     | 10                       | –    | 0.5                        | 4    | 18                               | 15                              | typ. 4                          | typ. 6                           |      |
| PMBFJ111    | SOT23   | 40                     | 50                     | 20                       | –    | 3                          | 10   | 30                               | typ. 3                          | typ. 13                         | typ. 35                          |      |
| PMBFJ112    | SOT23   | 40                     | 50                     | 5                        | –    | 1                          | 5    | 50                               | typ. 3                          | typ. 13                         | typ. 35                          |      |
| PMBFJ113    | SOT23   | 40                     | 50                     | 2                        | –    | 0.5                        | 3    | 100                              | typ. 3                          | typ. 13                         | typ. 35                          |      |
| PN4391      | TO-92   | 40                     | 50                     | 50                       | –    | 4                          | 10   | 30                               | 5                               | 15                              | 20                               |      |
| PN4392      | TO-92   | 40                     | 50                     | 25                       | –    | 2                          | 5    | 60                               | 5                               | 15                              | 35                               |      |
| PN4393      | TO-92   | 40                     | 50                     | 5                        | –    | 0.5                        | 3    | 100                              | 5                               | 15                              | 50                               |      |

## P-CHANNEL JUNCTION FIELD-EFFECT TRANSISTORS FOR SWITCHING

| TYPE NUMBER | PACKAGE | RATINGS                |                        | CHARACTERISTICS          |      |                            |      |                                  |                                 |                                 |                                  | PAGE |
|-------------|---------|------------------------|------------------------|--------------------------|------|----------------------------|------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|------|
|             |         | V <sub>DS</sub><br>(V) | I <sub>G</sub><br>(mA) | I <sub>DSS</sub><br>(mA) |      | -V <sub>(P)GS</sub><br>(V) |      | R <sub>DSon</sub><br>max.<br>(Ω) | C <sub>rs</sub><br>typ.<br>(pF) | t <sub>on</sub><br>typ.<br>(ns) | t <sub>off</sub><br>typ.<br>(ns) |      |
|             |         |                        |                        | min.                     | max. | min.                       | max. |                                  |                                 |                                 |                                  |      |
| J174        | TO-92   | 30                     | 50                     | 20                       | 135  | 5                          | 10   | 85                               | 4                               | 7                               | 15                               |      |
| J175        | TO-92   | 30                     | 50                     | 7                        | 70   | 3                          | 6    | 125                              | 4                               | 15                              | 30                               |      |
| J176        | TO-92   | 30                     | 50                     | 2                        | 35   | 1                          | 4    | 250                              | 4                               | 35                              | 35                               |      |
| J177        | TO-92   | 30                     | 50                     | 1.5                      | 20   | 0.8                        | 2.25 | 300                              | 4                               | 45                              | 45                               |      |
| PMBFJ174    | SOT23   | 30                     | 50                     | 20                       | 135  | 5                          | 10   | 85                               | 4                               | 7                               | 15                               |      |
| PMBFJ175    | SOT23   | 30                     | 50                     | 7                        | 70   | 3                          | 6    | 125                              | 4                               | 15                              | 30                               |      |
| PMBFJ176    | SOT23   | 30                     | 50                     | 2                        | 35   | 1                          | 4    | 250                              | 4                               | 35                              | 35                               |      |
| PMBFJ177    | SOT23   | 30                     | 50                     | 1.5                      | 20   | 0.8                        | 2.25 | 300                              | 4                               | 45                              | 45                               |      |

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## N-CHANNEL, SINGLE GATE MOS-FETS FOR SWITCHING

| TYPE NUMBER | PACKAGE | RATINGS                |                        | CHARACTERISTICS          |      |                            |                  |       |                                  |                                  | PAGE |   |
|-------------|---------|------------------------|------------------------|--------------------------|------|----------------------------|------------------|-------|----------------------------------|----------------------------------|------|---|
|             |         | V <sub>DS</sub><br>(V) | I <sub>D</sub><br>(mA) | I <sub>DSS</sub><br>(mA) |      | -V <sub>(P)GS</sub><br>(V) |                  | MODE  | R <sub>DSon</sub><br>max.<br>(Ω) | C <sub>rss</sub><br>typ.<br>(pF) |      | t <sub>on</sub> /t <sub>off</sub><br>max.<br>(ns) |
|             |         |                        |                        | min.                     | max. | min.                       | max.             |       |                                  |                                  |      |   |
| BSD22       | SOT143  | 20                     | 50                     | -                        | -    | -                          | 2                | depl. | 30                               | 0.6                              | 1/5  |   |
| BSS83       | SOT143  | 10                     | 50                     | -                        | -    | 0.1 <sup>(1)</sup>         | 2 <sup>(1)</sup> | enh.  | 45                               | 0.6                              | 1/5  |   |

## Notes

1. V<sub>GS(th)</sub>.

## N-CHANNEL, DUAL GATE MOS-FETS

All types protected against excessive input voltage surges.

| TYPE NUMBER | PACKAGE | RATINGS                |                        | CHARACTERISTICS                          |                                    |                                   |                                 |                                 |                                    | REMARKS   | PAGE |
|-------------|---------|------------------------|------------------------|--|------------------------------------|-----------------------------------|---------------------------------|---------------------------------|------------------------------------|-----------|------|
|             |         | V <sub>DS</sub><br>(V) | I <sub>D</sub><br>(mA) | I <sub>DSS</sub><br>min.<br>max.<br>(mA) | -V <sub>(P)GS</sub><br>max.<br>(V) | y <sub>fs</sub>  <br>min.<br>(mS) | C <sub>is</sub><br>typ.<br>(pF) | C <sub>os</sub><br>typ.<br>(pF) | F<br>typ.<br>(dB)<br>at<br>800 MHz |           |      |
| BF901       | SOT143  | 12                     | 30                     | -  | 0.7 <sup>(1)</sup>                 | 25                                | 2.35                            | 1.4                             | 1.7                                | VHF & UHF |      |
| BF901R      | SOT143R | 12                     | 30                     | -  | 0.7 <sup>(1)</sup>                 | 25                                | 2.35                            | 1.4                             | 1.7                                | VHF & UHF |      |
| BF904       | SOT143  | 7                      | 30                     | -  | 1 <sup>(1)</sup>                   | 22                                | 2.2                             | 1.3                             | 2                                  | VHF & UHF |      |
| BF904R      | SOT143R | 7                      | 30                     | -  | 1 <sup>(1)</sup>                   | 22                                | 2.2                             | 1.3                             | 2                                  | VHF & UHF |      |
| BF904WR     | SOT343R | 7                      | 30                     | -  | 1 <sup>(1)</sup>                   | 22                                | 2.2                             | 1.3                             | 2                                  | VHF & UHF |      |
| BF908       | SOT143  | 12                     | 40                     | 3 to 27                                  | 2                                  | 36                                | 3.1                             | 1.7                             | 1.5                                | VHF & UHF |      |
| BF908R      | SOT143R | 12                     | 40                     | 3 to 27                                  | 2                                  | 36                                | 3.1                             | 1.7                             | 1.5                                | VHF & UHF |      |
| BF908WR     | SOT343R | 12                     | 40                     | 3 to 27                                  | 2                                  | 36                                | 3.1                             | 1.7                             | 1.5                                | VHF & UHF |      |
| BF909       | SOT143  | 7                      | 40                     | -  | 1 <sup>(1)</sup>                   | 36                                | 3.6                             | 2.3                             | 2                                  | VHF & UHF |      |
| BF909R      | SOT143R | 7                      | 40                     | -  | 1 <sup>(1)</sup>                   | 36                                | 3.6                             | 2.3                             | 2                                  | VHF & UHF |      |
| BF909WR     | SOT343R | 7                      | 40                     | -  | 1 <sup>(1)</sup>                   | 36                                | 3.6                             | 2.3                             | 2                                  | VHF & UHF |      |
| BF989       | SOT143  | 20                     | 20                     | 2 to 20                                  | 2.7                                | 9.5                               | 1.8                             | 0.9                             | 2.8                                | UHF       |      |
| BF990A      | SOT143  | 18                     | 30                     | -  | 1.3                                | 18                                | 2.6                             | 1.2                             | 2                                  | UHF       |      |
| BF991       | SOT143  | 20                     | 20                     | 4 to 25                                  | 2.5                                | 10                                | 2.1                             | 1.1                             | 0.7 <sup>(2)</sup>                 | VHF       |      |
| BF992       | SOT143  | 20                     | 40                     | -  | 1.3                                | 20                                | 4                               | 2                               | 1.2 <sup>(2)</sup>                 | VHF       |      |
| BF992R      | SOT143R | 20                     | 40                     | -  | 1.3                                | 20                                | 4                               | 2                               | 1.2 <sup>(2)</sup>                 | VHF       |      |
| BF994S      | SOT143  | 20                     | 30                     | 4 to 20                                  | 2.5                                | 15                                | 2.5                             | 1                               | 1 <sup>(2)</sup>                   | VHF       |      |
| BF996S      | SOT143  | 20                     | 30                     | 4 to 20                                  | 2.5                                | 15                                | 2.3                             | 0.8                             | 1.8                                | UHF       |      |
| BF998       | SOT143  | 12                     | 30                     | 2 to 18                                  | 2.5                                | 21                                | 2.1                             | 1.05                            | 1                                  | VHF & UHF |      |
| BF998R      | SOT143R | 12                     | 30                     | 2 to 18                                  | 2.5                                | 21                                | 2.1                             | 1.05                            | 1                                  | VHF & UHF |      |
| BF998WR     | SOT343R | 12                     | 30                     | 2 to 18                                  | 2.5                                | 22                                | 2.1                             | 1.05                            | 1                                  | VHF & UHF |      |

## Small-signal field-effect transistors

## Selection guide

**N-CHANNEL, DUAL GATE MOS-FETS (continued)**

All types protected against excessive input voltage surges.

| TYPE NUMBER | PACKAGE | RATINGS             |                     | CHARACTERISTICS                  |                              |                             |                           |                           |                        | REMARKS   | PAGE |
|-------------|---------|---------------------|---------------------|----------------------------------|------------------------------|-----------------------------|---------------------------|---------------------------|------------------------|-----------|------|
|             |         | V <sub>DS</sub> (V) | I <sub>D</sub> (mA) | I <sub>DSS</sub> min.. max. (mA) | -V <sub>(P)GS</sub> max. (V) | y <sub>fs</sub>   min. (mS) | C <sub>is</sub> typ. (pF) | C <sub>os</sub> typ. (pF) | F typ. (dB) at 800 MHz |           |      |
| BF1100      | SOT143  | 14                  | 30                  | –                                | 1 <sup>(1)</sup>             | 24                          | 2.2                       | 1.4                       | 2                      | VHF & UHF |      |
| BF1100R     | SOT143R | 14                  | 30                  | –                                | 1 <sup>(1)</sup>             | 24                          | 2.2                       | 1.4                       | 2                      | VHF & UHF |      |
| BF1100WR    | SOT343R | 14                  | 30                  | –                                | 1 <sup>(1)</sup>             | 24                          | 2.2                       | 1.4                       | 2                      | VHF & UHF |      |
| BF1105      | SOT143  | 7                   | 30                  | –                                | –                            | 25                          | 2.2                       | –                         | 1.7                    | VHF & UHF |      |
| BF1105R     | SOT143R | 7                   | 30                  | –                                | –                            | 25                          | 2.2                       | –                         | 1.7                    | VHF & UHF |      |
| BF1105WR    | SOT343R | 7                   | 30                  | –                                | –                            | 25                          | 2.2                       | –                         | 1.7                    | VHF & UHF |      |
| BF1109      | SOT143  | 11                  | 30                  | –                                | 1.2 <sup>(1)</sup>           | 30                          | 2.2                       | –                         | 1.5                    | VHF & UHF |      |
| BF1109R     | SOT143R | 11                  | 30                  | –                                | 1.2 <sup>(1)</sup>           | 30                          | 2.2                       | –                         | 1.5                    | VHF & UHF |      |
| BF1109WR    | SOT343R | 11                  | 30                  | –                                | 1.2 <sup>(1)</sup>           | 30                          | 2.2                       | –                         | 1.5                    | VHF & UHF |      |

**Notes**

1. V<sub>GS(th)</sub>.
2. At 200 MHz.