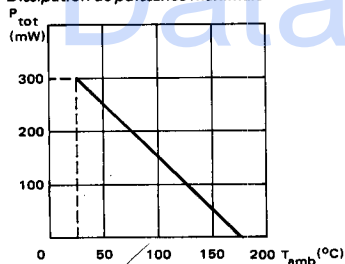


HF amplification  
 Amplification HF

LF amplification  
 Amplification BF

|                          |                |         |
|--------------------------|----------------|---------|
| I <sub>DSS</sub>         | 0,5 - 2,5 mA   | 2N 3821 |
|                          | 2 - 10 mA      | 2N 3822 |
|                          | 4 - 20 mA      | 2N 3823 |
| Y <sub>21s</sub>         | 1,5 - 4,5 mS   | 2N 3821 |
|                          | 3 - 6,5 mS     | 2N 3822 |
|                          | 3,5 - 6,5 mS   | 2N 3823 |
| C <sub>12ss</sub>        | 3 pF max       | 2N 3821 |
|                          | 3 pF max       | 2N 3822 |
|                          | 2 pF max       | 2N 3823 |
| e <sub>n</sub> ( 10 Hz ) | 200 nV/√Hz max | 2N 3821 |
|                          | 200 nV/√Hz max | 2N 3822 |
| F ( 100 MHz )            | 2,5 dB max     | 2N 3823 |

Maximum power dissipation  
 Dissipation de puissance maximale



Case TO-72 — See outline drawing CB-4 on last pages  
 Boîtier Voir dessin coté CB-4 dernières pages



Bottom view  
 Vue de dessous



Weight  
 Masse 0,7 g

Connection M is connected to case  
 La connexion M est reliée au boîtier

ABSOLUTE RATINGS ( LIMITING VALUES )  
 VALEURS LIMITES ABSOLUES D'UTILISATION

T<sub>amb</sub> = + 25 °C

( unless otherwise stated )  
 ( sauf indication contraire )

|   |     |                  | 2N 3821<br>2N 3822 | 2N 3823 |    |
|---|-----|------------------|--------------------|---------|----|
| Drain source voltage<br>Tension drain source    |     | V <sub>DS</sub>  | 50                 | 30      | V  |
| Gate source voltage<br>Tension grille source    |     | V <sub>GS</sub>  | - 50               | - 30    | V  |
| Gate drain voltage<br>Tension grille drain      |     | V <sub>GD</sub>  | - 50               | - 30    | V  |
| Gate current<br>Courant de grille               |     | I <sub>G</sub>   | 10                 | 10      | mA |
| Power dissipation<br>Dissipation de puissance   |     | P <sub>tot</sub> | 300                | 300     | mW |
| Junction temperature<br>Température de jonction | max | T <sub>j</sub>   | + 175              | + 175   | °C |
| Storage temperature<br>Température de stockage  | min | T <sub>stg</sub> | - 65               | - 65    | °C |
|   | max |                  | + 200              | + 200   | °C |

**STATIC CHARACTERISTICS**  
**CARACTÉRISTIQUES STATIQUES**
 $T_{amb} = +25\text{ }^{\circ}\text{C}$ ( unless otherwise stated )  
( sauf indication contraire )

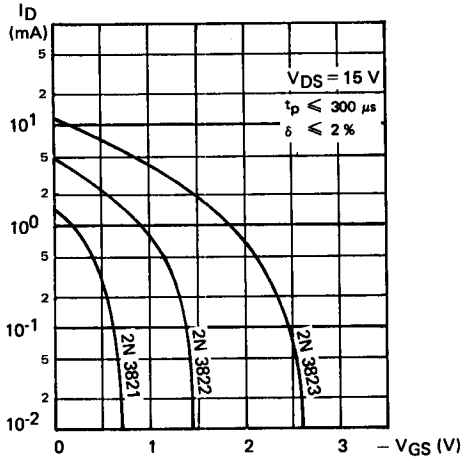
|   | Test conditions<br><i>Conditions de mesure</i>                                     |               |                               | min               | typ | max             |                |
|---|--|---------------|-------------------------------|-------------------|-----|-----------------|----------------|
| Total leakage gate current<br><i>Courant de fuite total de grille</i>     | $V_{DS} = 0$<br>$V_{GS} = -30\text{ V}$  | $I_{GSS}$     | 2N 3821<br>2N 3822            |                   |     | -0,1<br>-0,1    | nA<br>nA       |
|   | $V_{DS} = 0$<br>$V_{GS} = -20\text{ V}$  |               | 2N 3823                       |                   |     | -0,5            | nA             |
| Total leakage gate current<br><i>Courant de fuite total de grille</i>     | $V_{DS} = 0$<br>$V_{GS} = -30\text{ V}$<br>$t_{amb} = 150\text{ }^{\circ}\text{C}$ | $I_{GSS}$     | 2N 3821<br>2N 3822            |                   |     | -100<br>-100    | nA<br>nA       |
|   | $V_{DS} = 0$<br>$V_{GS} = -20\text{ V}$<br>$t_{amb} = 150\text{ }^{\circ}\text{C}$ |               | 2N 3823                       |                   |     | -500            | nA             |
| Gate source breakdown voltage<br><i>Tension de claquage grille source</i> | $V_{DS} = 0$<br>$I_G = -1\text{ }\mu\text{A}$                                      | $V_{(BR)GSS}$ | 2N 3821<br>2N 3822<br>2N 3823 | -50<br>-50<br>-30 |     |                 | V<br>V<br>V    |
| Drain current<br><i>Courant de drain</i>                                  | $V_{DS} = 15\text{ V}$<br>$V_{GS} = 0$   | $I_{DSS}^*$   | 2N 3821<br>2N 3822<br>2N 3823 | 0,5<br>2<br>4     |     | 2,5<br>10<br>20 | mA<br>mA<br>mA |
| Gate source cut-off voltage<br><i>Tension grille-source de blocage</i>    | $V_{DS} = 15\text{ V}$<br>$I_D = 0,5\text{ nA}$                                    | $V_{GSoff}$   | 2N 3821<br>2N 3822<br>2N 3823 |                   |     | -4<br>-6<br>-8  | V<br>V<br>V    |
| Gate source voltage<br><i>Tension grille source</i>                       | $V_{DS} = 15\text{ V}$<br>$I_D = 50\text{ }\mu\text{A}$                            | $V_{GS}$      | 2N 3821                       | -0,5              |     | -2              | V              |
|   | $V_{DS} = 15\text{ V}$<br>$I_D = 200\text{ }\mu\text{A}$                           |               | 2N 3822                       | -1                |     | -4              | V              |
|   | $V_{DS} = 15\text{ V}$<br>$I_D = 400\text{ }\mu\text{A}$                           |               | 2N 3823                       | -1                |     | -7,5            | V              |

\* Pulsed

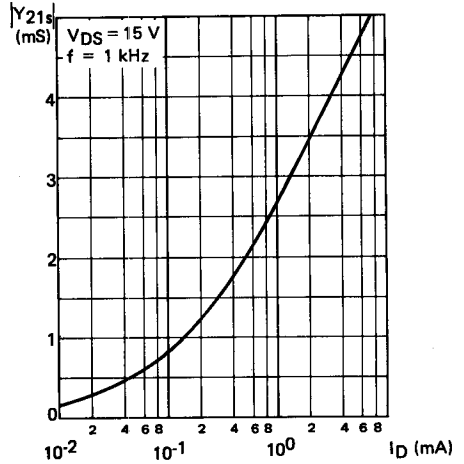
\* Impulsion  $t_p < 300\text{ }\mu\text{s}$   $\delta < 2\%$

| DYNAMIC CHARACTERISTICS ( for small signals )<br>CARACTÉRISTIQUES DYNAMIQUES ( pour petits signaux ) |   |                                  |                               | T <sub>amb</sub> = + 25 °C |     | ( unless otherwise stated )<br>( sauf indication contraire ) |                        |
|--|---|----------------------------------|-------------------------------|----------------------------|-----|--|------------------------|
|  | Test conditions<br>Conditions de mesure   |                                  |                               | min                        | typ | max  |                        |
| Input capacitance<br>Capacité d'entrée   | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 1 MHz                            | C <sub>11ss</sub>                | 2N 3821<br>2N 3822<br>2N 3823 |                            |     | 6<br>6<br>6  | pF<br>pF<br>pF         |
| Reverse transfer capacitance<br>Capacité de transfert inverse  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 1 MHz                            | C <sub>12ss</sub>                | 2N 3821<br>2N 3822<br>2N 3823 |                            |     | 3<br>3<br>2  | pF<br>pF<br>pF         |
| Input admittance<br>Admittance d'entrée  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 200 MHz                          | R <sub>e</sub>  Y <sub>11s</sub> | 2N 3823                       |                            |     | 800  | μS                     |
| Forward transfer admittance<br>Admittance de transfert direct  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 1 kHz                            | Y <sub>21s</sub>                 | 2N 3821<br>2N 3822<br>2N 3823 | 1,5<br>3<br>3,5            |     | 4,5<br>6,5<br>6,5  | mS<br>mS<br>mS         |
|  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 200 MHz                          |                                  | 2N 3821<br>2N 3822<br>2N 3823 | 1,5<br>3<br>3,2            |     |  | mS<br>mS<br>mS         |
| Output admittance<br>Admittance de sortie  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 1 kHz                            | Y <sub>22s</sub>                 | 2N 3821<br>2N 3822<br>2N 3823 |                            |     | 10<br>20<br>35   | μS<br>μS<br>μS         |
| Output admittance<br>Admittance de sortie  | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 200 MHz                          | R <sub>e</sub>  Y <sub>22s</sub> | 2N 3823                       |                            |     | 200  | μS                     |
| Noise figure<br>Facteur de bruit   | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>R <sub>G</sub> = 1 kΩ<br>f = 100 MHz | F                                | 2N 3823                       |                            |     | 2,5  | dB                     |
| Equivalent reverse voltage<br>Tension équivalente de bruit   | V <sub>DS</sub> = 15 V<br>V <sub>GS</sub> = 0<br>f = 10 Hz                            | e <sub>n</sub>                   | 2N 3821<br>2N 3822            |                            |     | 200<br>200   | $\frac{nV}{\sqrt{Hz}}$ |

STATIC CHARACTERISTICS  
CARACTÉRISTIQUES STATIQUES



DYNAMIC CHARACTERISTICS ( for small signals )  
CARACTÉRISTIQUES DYNAMIQUES ( pour petits signaux )



DYNAMIC CHARACTERISTICS ( for small signals )  
CARACTÉRISTIQUES DYNAMIQUES ( pour petits signaux )

