

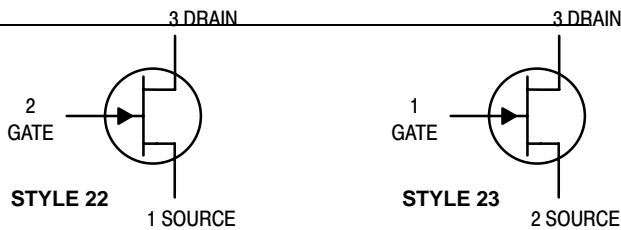


# JFET VHF/UHF Amplifier

## N-Channel — Depletion

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	$\pm 30$	Vdc
Drain-Gate Voltage	$V_{DG}$	30	Vdc
Gate-Source Voltage	$V_{GS}$	30	Vdc
Drain Current	$I_D$	100	mA <sub>dc</sub>
Forward Gate Current	$I_{G(f)}$	10	mA <sub>dc</sub>
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	350 2.8	mW mW/ $^\circ\text{C}$
Storage Channel Temperature Range	$T_{stg}$	-65 to +150	$^\circ\text{C}$



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

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

### OFF CHARACTERISTICS

Gate-Source Breakdown Voltage ( $I_G = 1.0 \mu\text{A}_{dc}$ , $V_{DS} = 0$ )	$V_{(BR)GSS}$	30	—	—	Vdc
--	---------------	----	---	---	-----

Gate-Source  
( $V_{DS} = 15 \text{ Vdc}$ ,  $I_D = 200 \mu\text{A}_{dc}$ )

BF245(1)

Breakdown: 1.2472 TD6(VfTj)076094 -0.248 TD0 TwE(G)TjE0.770-4067(B389 0.248 TD-0.002 TcE( = 15

# F245A BF245B

## ELECTRI

Symbol	Min	Typ	Max	Unit
Forward T				
Output Ad				
Forward T				
Reverse T				
Input Cap				
Reverse T				
Output Ca				
Cut-off F				

3. The frequ

s otherwise noted) (Continued)

	Symbol	Min	Typ	Max	Unit
$V_{GS} = 0, f = 1.0 \text{ kHz}$	$ Y_{fs} $	3.0	—	6.5	mmhos
$V_{GS} = 0, f = 1.0 \text{ kHz}$	$ Y_{OS} $	—	40	—	$\mu\text{mhos}$
$V_{GS} = 0, f = 200 \text{ MHz}$	$ Y_{fs} $	—	5.6	—	mmhos
$V_{GS} = 0, f = 200 \text{ MHz}$	$ Y_{rs} $	—	1.0	—	mmhos
$V_{dc}, -V_{GS} = 1.0 \text{ Vdc}$	$C_{iss}$	—	3.0	—	pF
$V_{dc} = 1.0 \text{ Vdc}, f = 1.0 \text{ MHz}$	$C_{rss}$	—	0.7	—	pF
$V_{dc} = 1.0 \text{ Vdc}, f = 1.0 \text{ MHz}$	$C_{oss}$	—	0.9	—	pF
$V_{DS} = 15 \text{ Vdc}, V_{GS} = 0$	$F(Y_{fs})$	—	700	—	MHz

## SOURCE CHARACTERISTICS

### IMPEDANCE PARAMETERS

15 Vdc,  $T_{channel} = 25^\circ\text{C}$

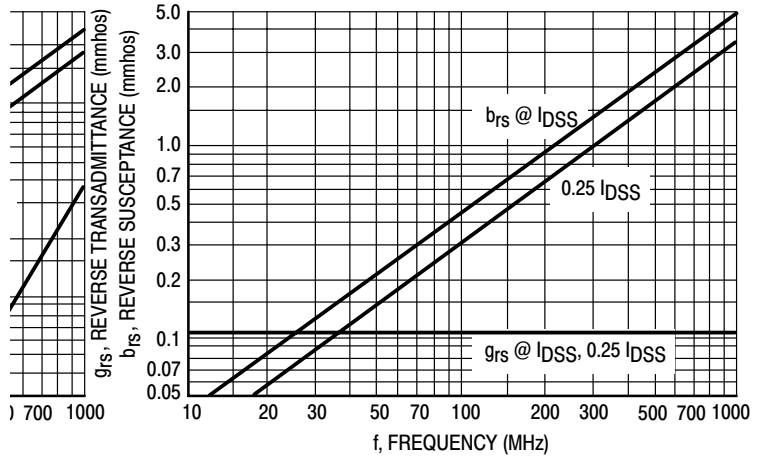
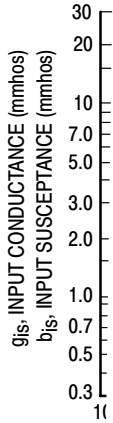


Figure 2. Reverse Transfer Admittance ( $y_{rs}$ )

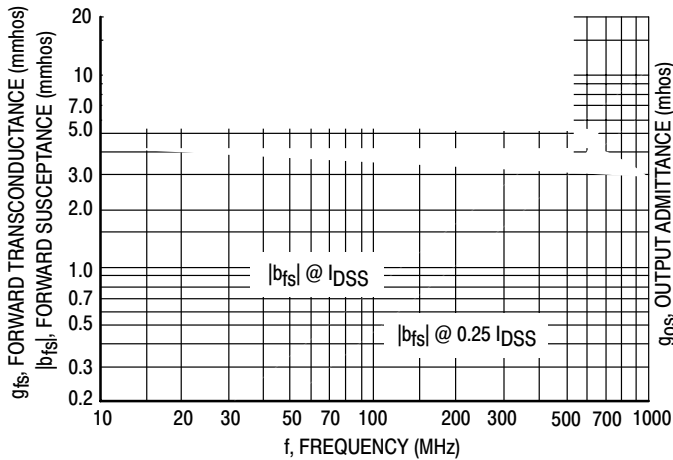


Figure 3. Forward Transadmittance ( $y_{fs}$ )

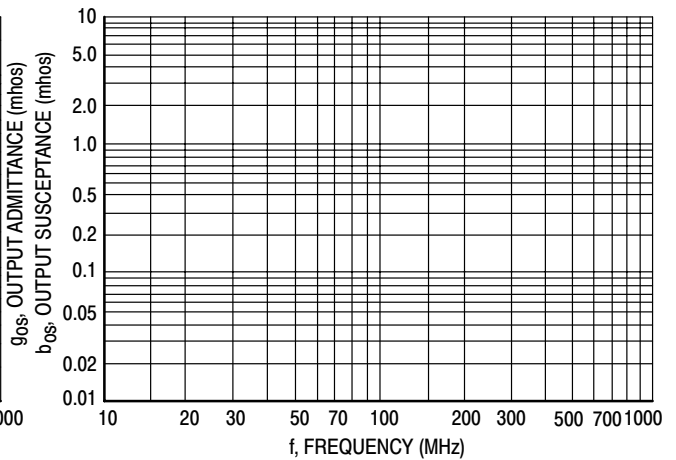


Figure 4. Output Admittance ( $y_{os}$ )

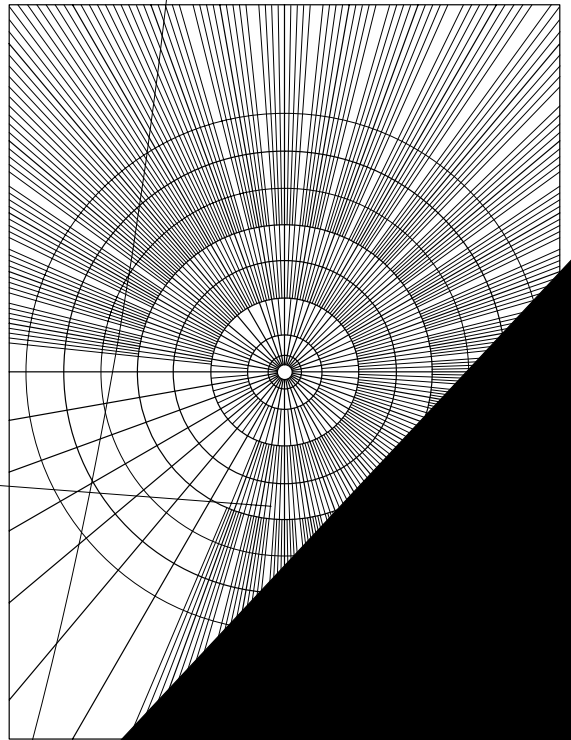


Figure 5. S11s

# BF245A BF245B

## ADMITTANCE PARAMETERS ( $V_{DG} = 15 \text{ Vdc}$ , $T_{\text{channel}} = 25^{\circ}\text{C}$ )

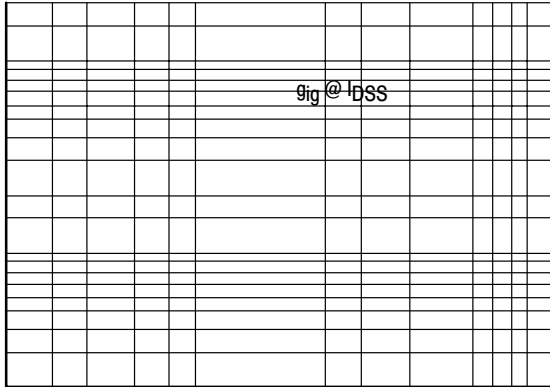


Figure 9. Input Admittance ( $y_{ig}$ )

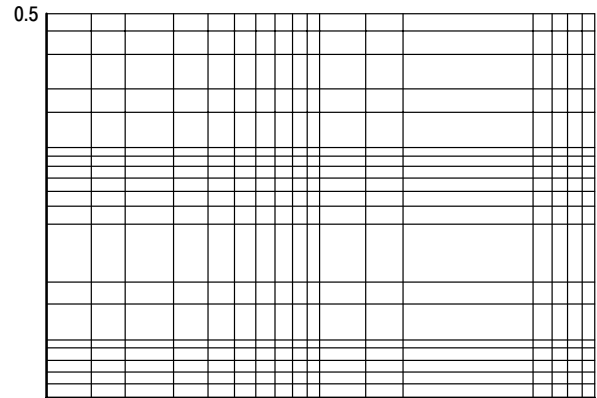


Figure 10. Reverse Transfer Admittance ( $y_{rg}$ )

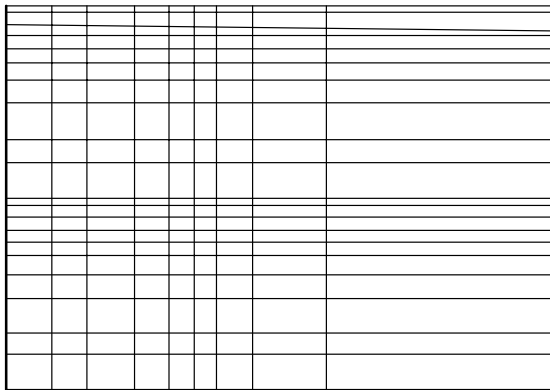


Figure 11. Forward Transfer Admittance ( $y_{fr}$ )

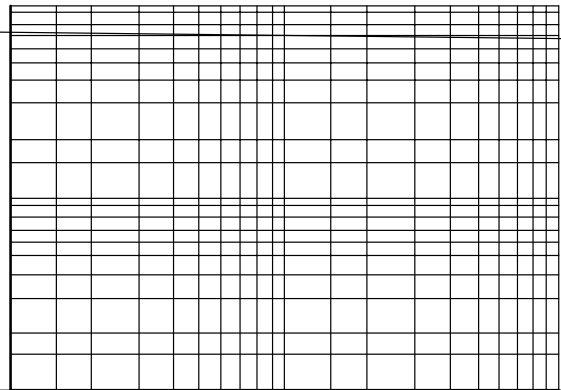
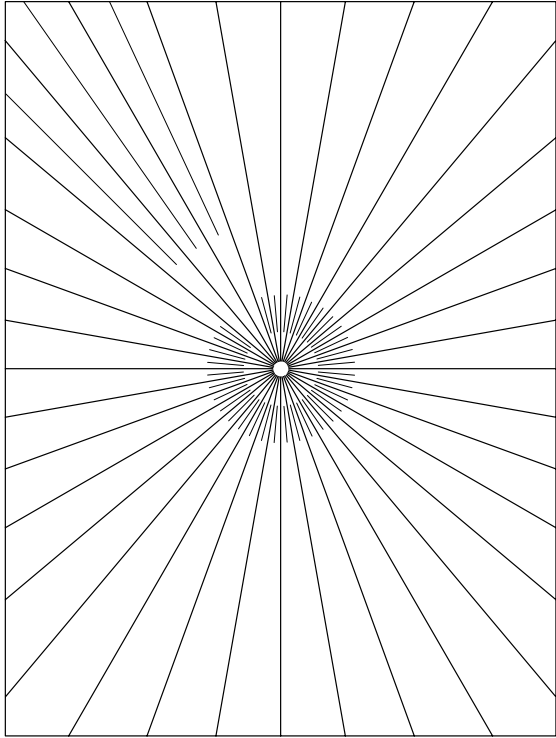


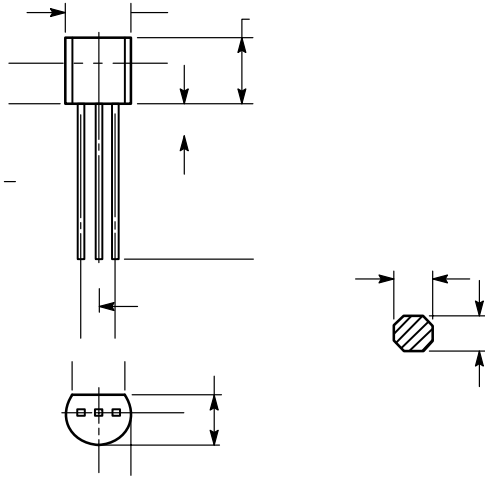
Figure 12. Output Admittance ( $y_{op}$ )



# BF245A BF245B

## PACKAGE DIMENSIONS

TO-92 (TO-226)  
CASE 29-11  
ISSUE AL



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

**Notes**



## BF245A BF245B

**ON Semiconductor** and \_\_\_\_\_ are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

---

### PUBLICATION ORDERING INFORMATION