

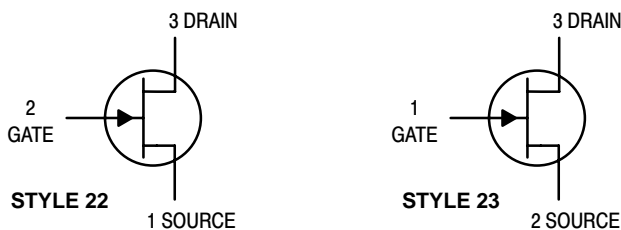
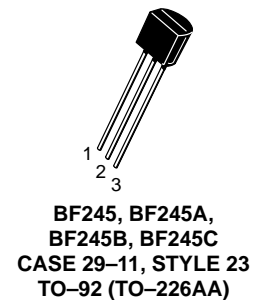
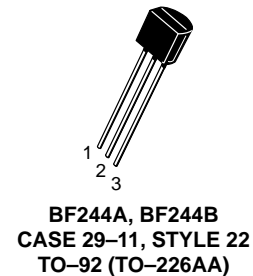
JFET VHF/UHF Amplifiers

N-Channel — Depletion

BF245A BF245B

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	± 30	Vdc
Drain-Gate Voltage	V_{DG}	30	Vdc
Gate-Source Voltage	V_{GS}	30	Vdc
Drain Current	I_D	100	mAdc
Forward Gate Current	$I_{G(f)}$	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°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
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OFF CHARACTERISTICS

Gate-Source Breakdown Voltage ($I_G = 1.0 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	30	—	—	Vdc
Gate-Source ($V_{DS} = 15 \text{Vdc}$, $I_D = 200 \mu\text{Adc}$)	V_{GS}	0.4	—	7.5	Vdc
	BF245(1)	0.4	—	2.2	
	BF245A, BF244A(2)	1.6	—	3.8	
	BF245B, BF244B	3.2	—	7.5	
	BF245C				
Gate-Source Cutoff Voltage ($V_{DS} = 15 \text{Vdc}$, $I_D = 10 \text{nAdc}$)	$V_{GS(off)}$	-0.5	—	-8.0	Vdc
Gate Reverse Current ($V_{GS} = 20 \text{Vdc}$, $V_{DS} = 0$)	I_{GSS}	—	—	5.0	nAdc

ON CHARACTERISTICS

Zero-Gate-Voltage Drain Current ($V_{DS} = 15 \text{Vdc}$, $V_{GS} = 0$)	I_{DSS}	2.0	—	25	mAdc
	BF245(1)	2.0	—	6.5	
	BF245A, BF244A(2)	6.0	—	15	
	BF245B, BF244B	12	—	25	
	BF245C				

1. On orders against the BF245, any or all subgroups might be shipped.
2. On orders against the BF244A, any or all subgroups might be shipped.

BF245A BF245B

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

Characteristic	Symbol	Min	Typ	Max	Unit
SMALL-SIGNAL CHARACTERISTICS					
Forward Transfer Admittance ($V_{DS} = 15\text{ Vdc}, V_{GS} = 0, f = 1.0\text{ kHz}$)	$ Y_{fs} $	3.0	—	6.5	mmhos
Output Admittance ($V_{DS} = 15\text{ Vdc}, V_{GS} = 0, f = 1.0\text{ kHz}$)	$ Y_{os} $	—	40	—	μmhos
Forward Transfer Admittance ($V_{DS} = 15\text{ Vdc}, V_{GS} = 0, f = 200\text{ MHz}$)	$ Y_{fs} $	—	5.6	—	mmhos
Reverse Transfer Admittance ($V_{DS} = 15\text{ Vdc}, V_{GS} = 0, f = 200\text{ MHz}$)	$ Y_{rs} $	—	1.0	—	mmhos
Input Capacitance ($V_{DS} = 20\text{ Vdc}, -V_{GS} = 1.0\text{ Vdc}$)	C_{iss}	—	3.0	—	pF
Reverse Transfer Capacitance ($V_{DS} = 20\text{ Vdc}, -V_{GS} = 1.0\text{ Vdc}, f = 1.0\text{ MHz}$)	C_{rss}	—	0.7	—	pF
Output Capacitance ($V_{DS} = 20\text{ Vdc}, -V_{GS} = 1.0\text{ Vdc}, f = 1.0\text{ MHz}$)	C_{oss}	—	0.9	—	pF
Cut-off Frequency ⁽³⁾ ($V_{DS} = 15\text{ Vdc}, V_{GS} = 0$)	$F(Y_{fs})$	—	700	—	MHz

3. The frequency at which g_{fs} is 0.7 of its value at 1 kHz.

COMMON SOURCE CHARACTERISTICS ADMITTANCE PARAMETERS ($V_{DS} = 15\text{ Vdc}, T_{channel} = 25^\circ\text{C}$)

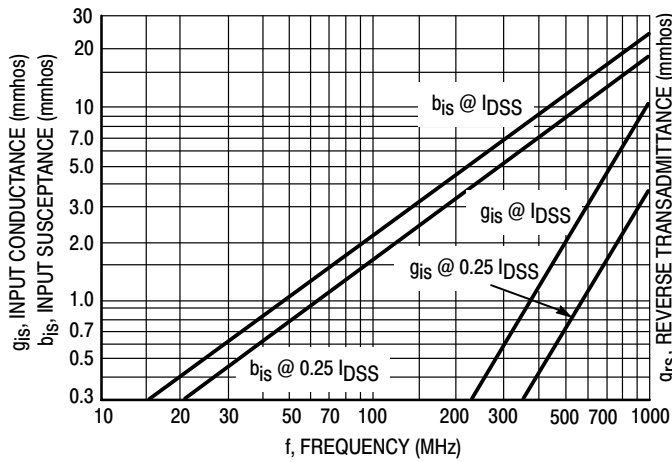


Figure 1. Input Admittance (y_{is})

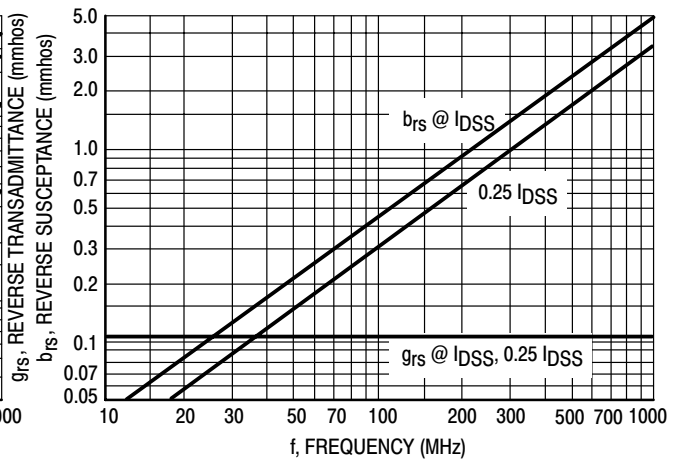


Figure 2. Reverse Transfer Admittance (y_{rs})

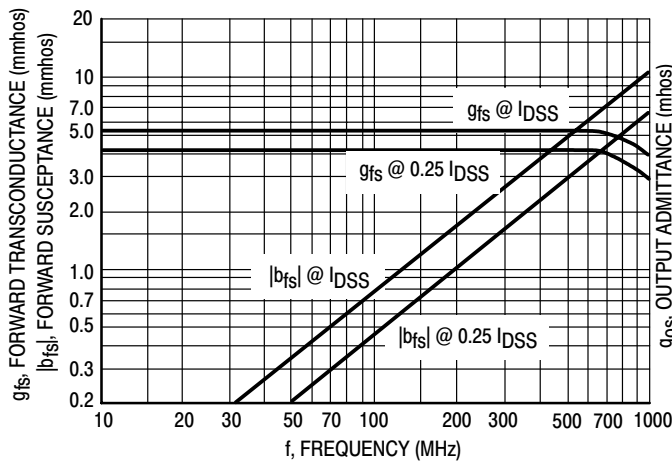


Figure 3. Forward Transadmittance (y_{fs})

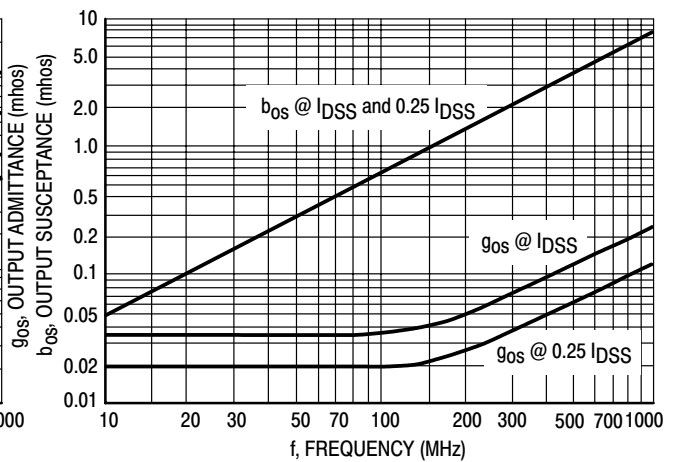


Figure 4. Output Admittance (y_{os})

BF245A BF245B

COMMON SOURCE CHARACTERISTICS S-PARAMETERS

($V_{DS} = 15 \text{ Vdc}$, $T_{\text{channel}} = 25^\circ\text{C}$, Data Points in MHz)

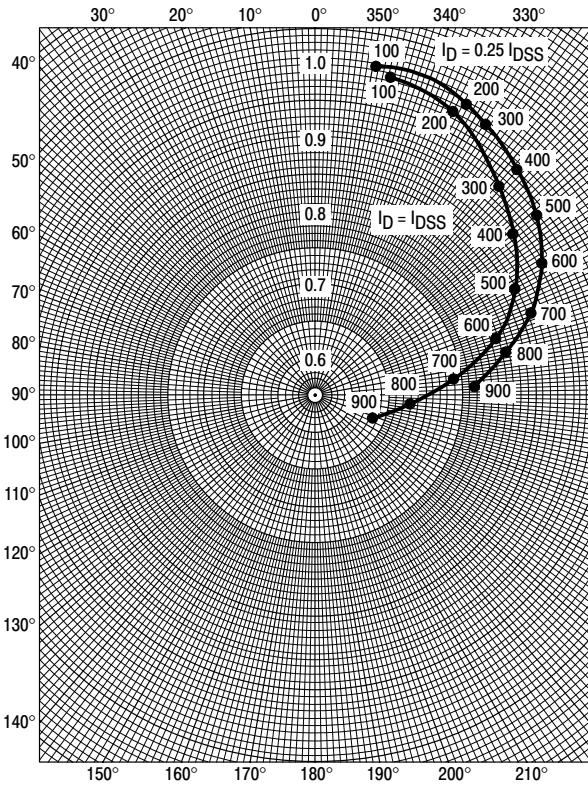


Figure 5. S_{11s}

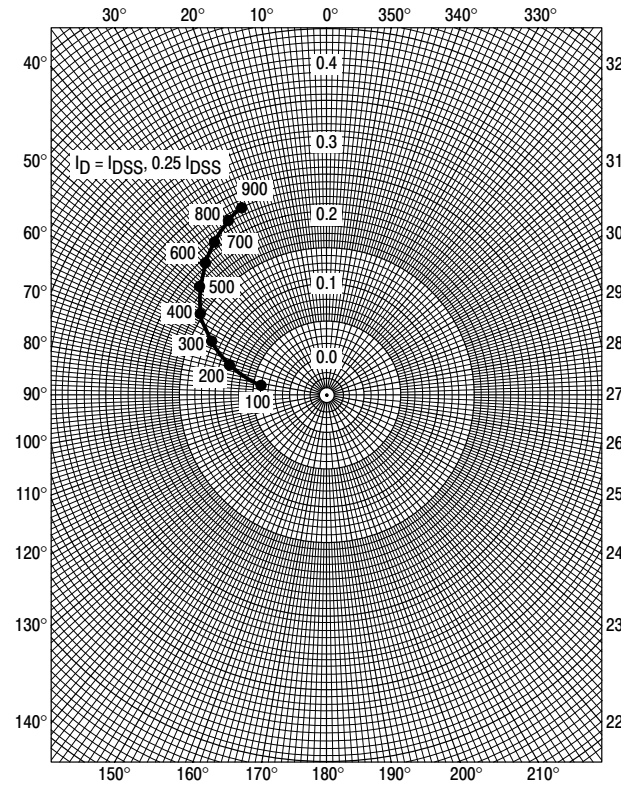


Figure 6. S_{12s}

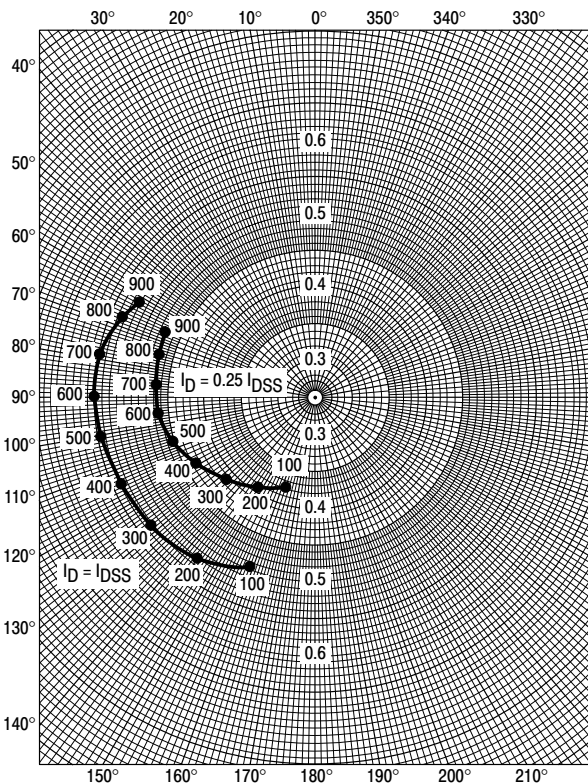


Figure 7. S_{21s}

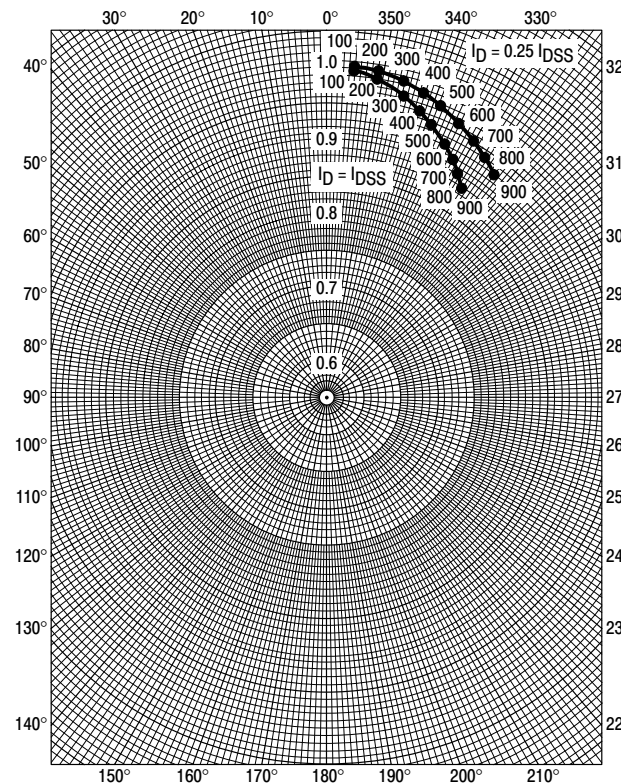


Figure 8. S_{22s}

BF245A BF245B

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

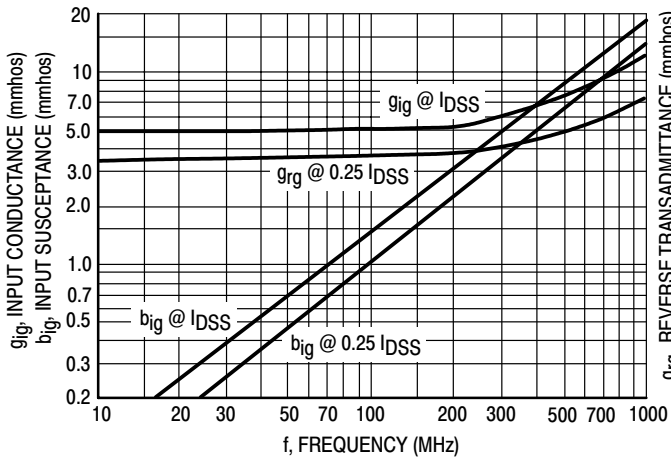


Figure 9. Input Admittance (y_{ig})

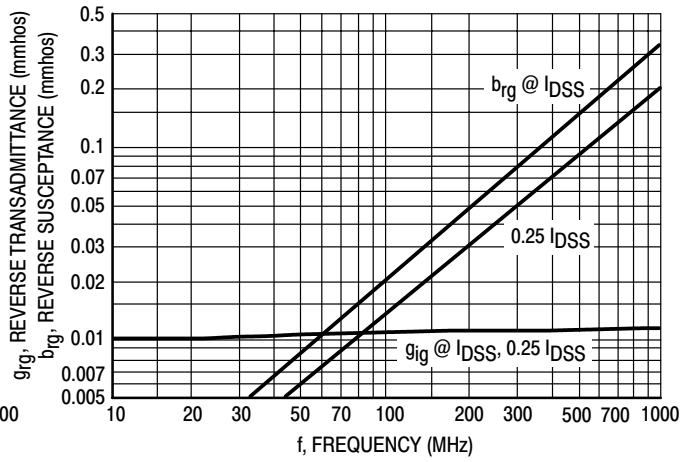


Figure 10. Reverse Transfer Admittance (y_{rg})

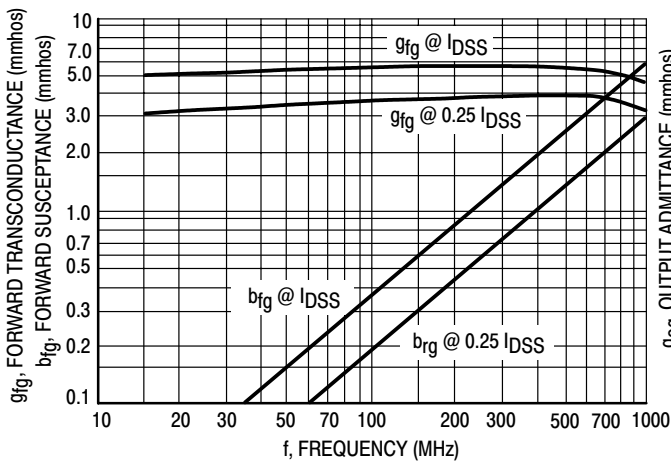


Figure 11. Forward Transfer Admittance (y_{fg})

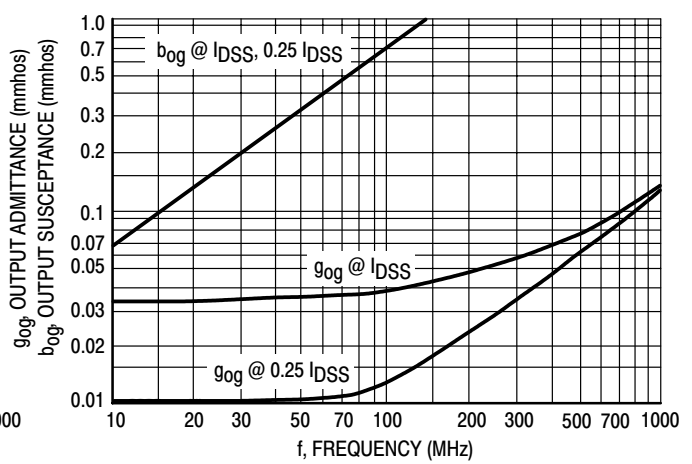


Figure 12. Output Admittance (y_{og})

COMMON GATE CHARACTERISTICS
S-PARAMETERS
 ($V_{DS} = 15 \text{ Vdc}$, $T_{\text{channel}} = 25^\circ\text{C}$, Data Points in MHz)

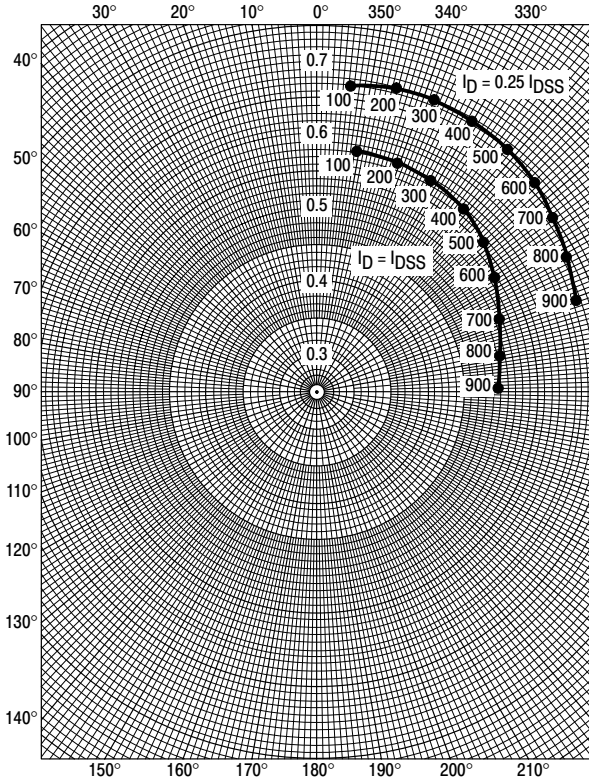


Figure 13. S_{11g}

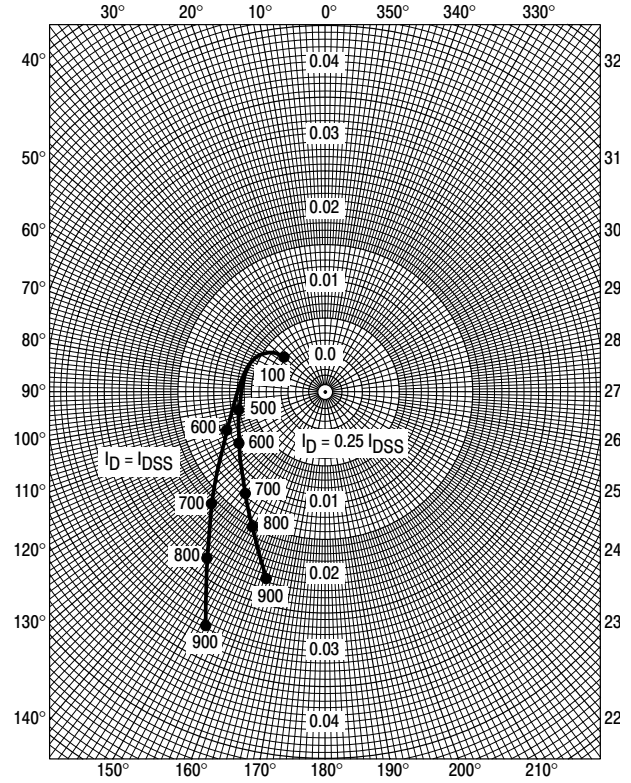


Figure 14. S_{12g}

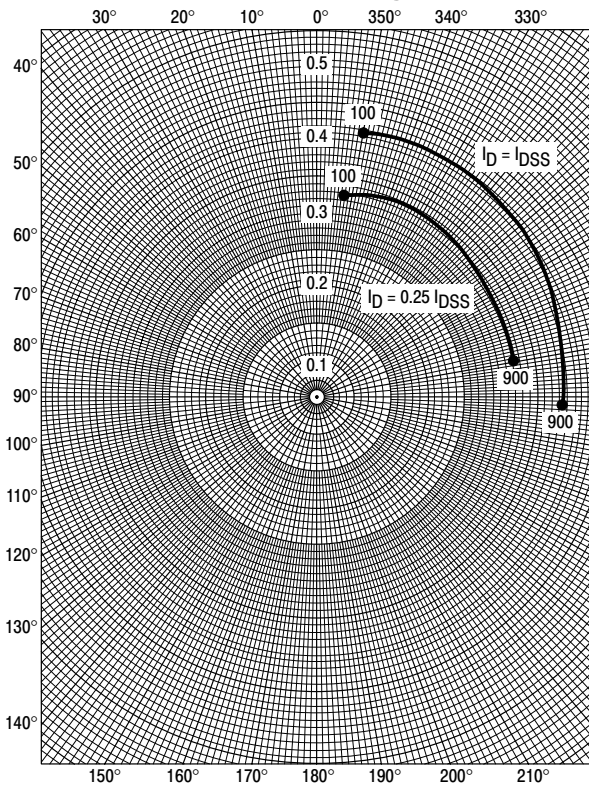


Figure 15. S_{21g}

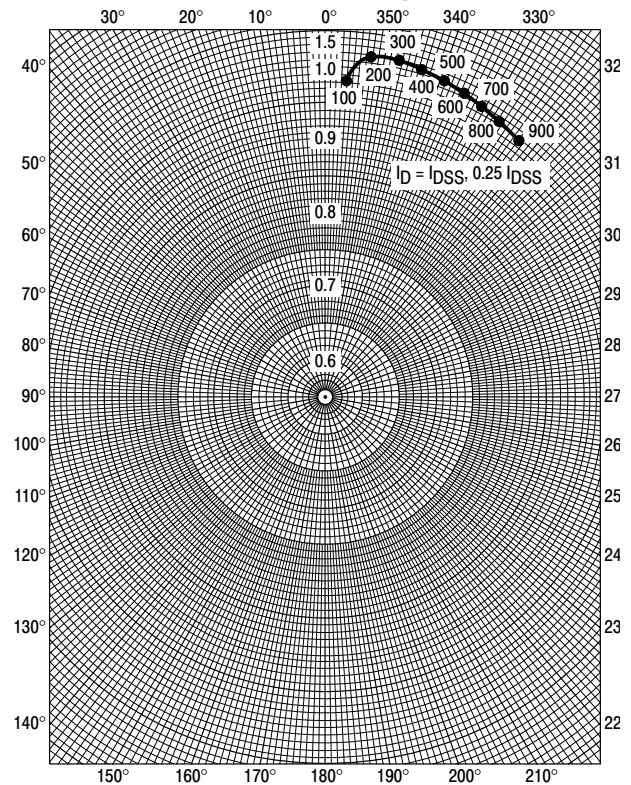
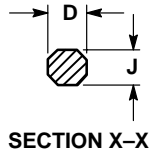
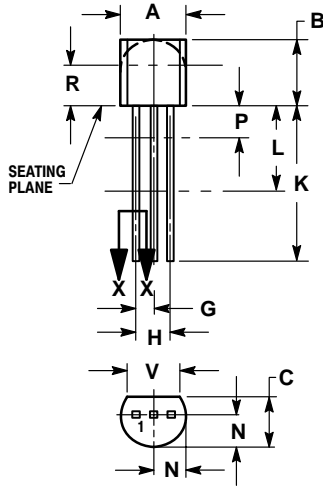


Figure 16. S_{22g}

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.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---


STYLE 22:

- PIN 1. SOURCE
2. GATE
3. DRAIN

STYLE 23:

- PIN 1. GATE
2. SOURCE
3. DRAIN

Notes

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