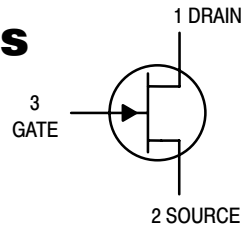


JFET VHF/UHF Amplifiers

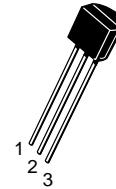
N-Channel — Depletion



2N5486

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain–Gate Voltage	V_{DG}	25	Vdc
Reverse Gate–Source Voltage	V_{GSR}	25	Vdc
Drain Current	I_D	30	mAdc
Forward Gate Current	$I_{G(f)}$	10	mAdc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$



**CASE 29-11, STYLE 5
TO-92 (TO-226AA)**

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 ($I_G = -1.0 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	-25	—	—	Vdc
Gate Reverse Current ($V_{GS} = -20 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = -20 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 100^\circ\text{C}$)	I_{GSS}	— —	— —	-1.0 -0.2	nAdc μAdc
Gate Source Cutoff Voltage ($V_{DS} = 15 \text{ Vdc}$, $I_D = 10 \text{ nAdc}$)	$V_{GS(off)}$	-2.0	—	-6.0	Vdc

ON CHARACTERISTICS

Zero–Gate–Voltage Drain Current ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$)	I_{DSS}	8.0	—	20	mAdc
---	-----------	-----	---	----	------

SMALL-SIGNAL CHARACTERISTICS

Forward Transfer Admittance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ kHz}$)	$ y_{fs} $	4000	—	8000	μhos
Input Admittance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 400 \text{ MHz}$)	$\text{Re}(y_{is})$	—	—	1000	μhos
Output Admittance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ kHz}$)	$ y_{os} $	—	—	75	μhos
Output Conductance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 400 \text{ MHz}$)	$\text{Re}(y_{os})$	—	—	100	μhos
Forward Transconductance ($V_{DS} = 15 \text{ Vdc}$, $V_{GS} = 0$, $f = 400 \text{ MHz}$)	$\text{Re}(y_{fs})$	3500	—	—	μhos

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

Characteristic	Symbol	Min	Typ	Max	Unit
SMALL-SIGNAL CHARACTERISTICS (continued)					
Input Capacitance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{iss}	—	—	5.0	pF
Reverse Transfer Capacitance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{rss}	—	—	1.0	pF
Output Capacitance ($V_{DS} = 15\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{oss}	—	—	2.0	pF

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

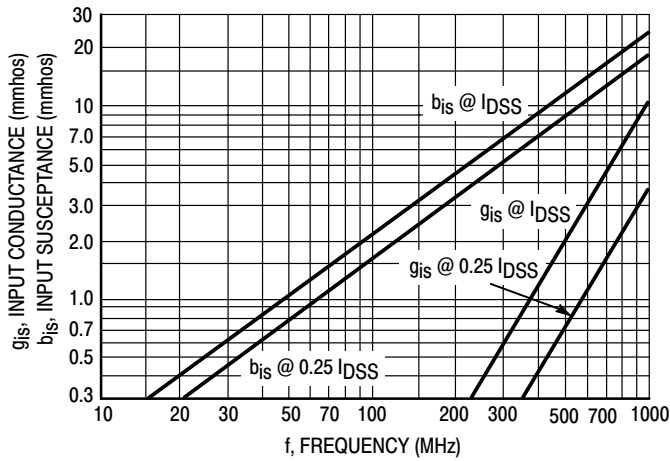


Figure 1. Input Admittance (y_{is})

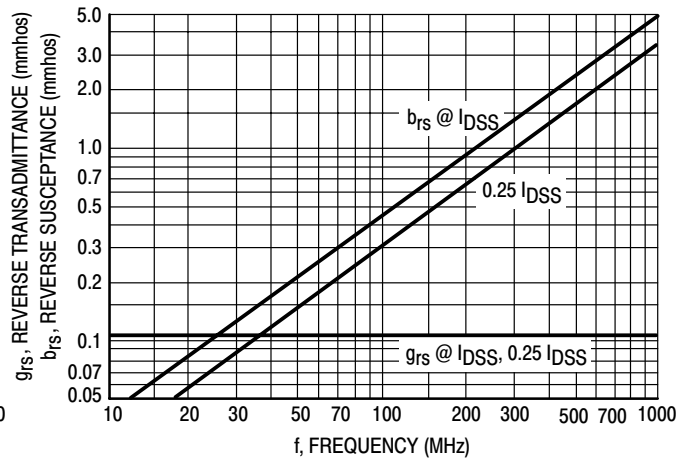


Figure 2. Reverse Transfer Admittance (y_{rs})

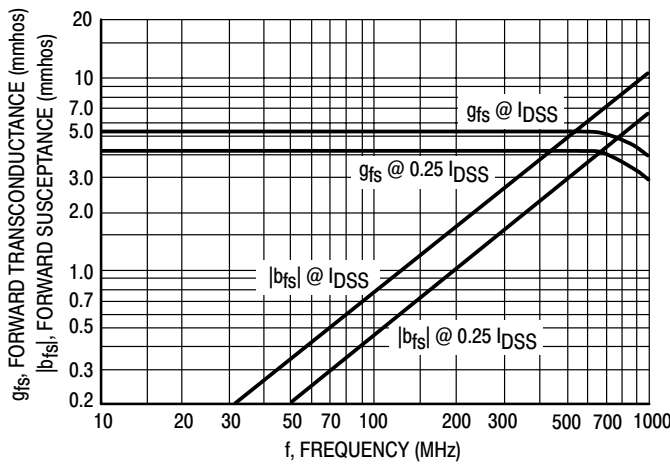


Figure 3. Forward Transadmittance (y_{fs})

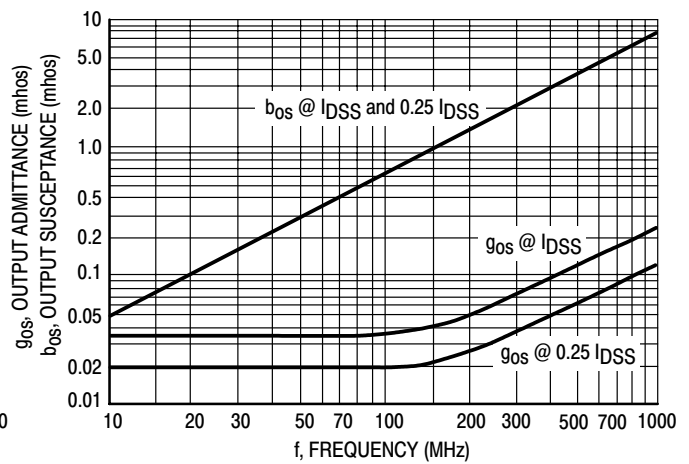


Figure 4. Output Admittance (y_{os})

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

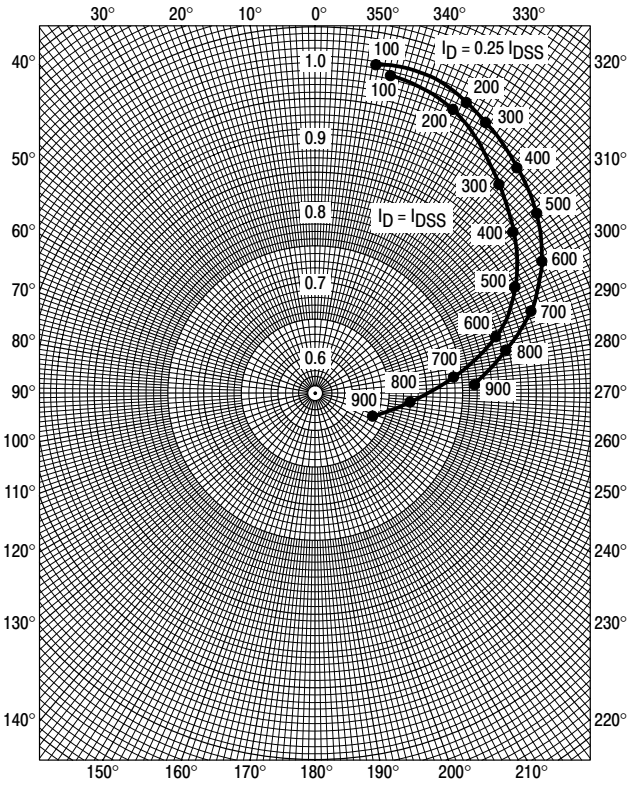


Figure 5. S_{11s}

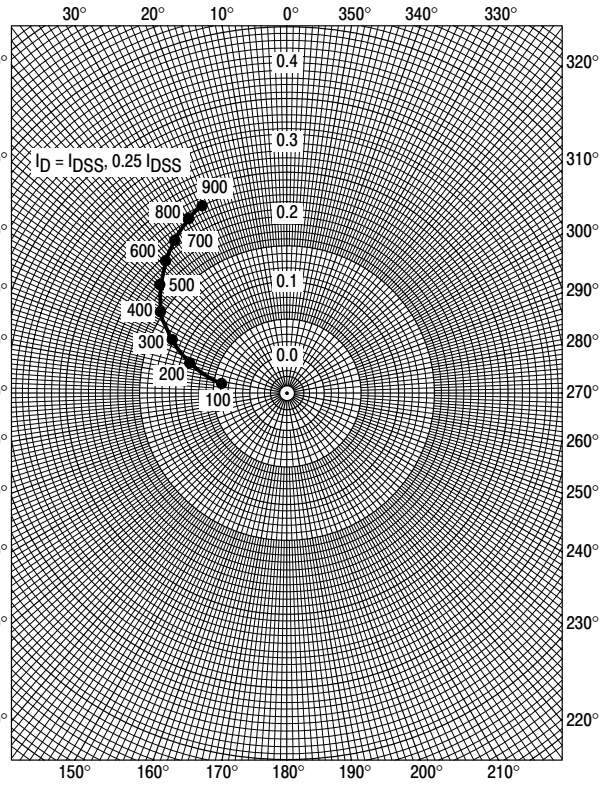


Figure 6. S_{12s}

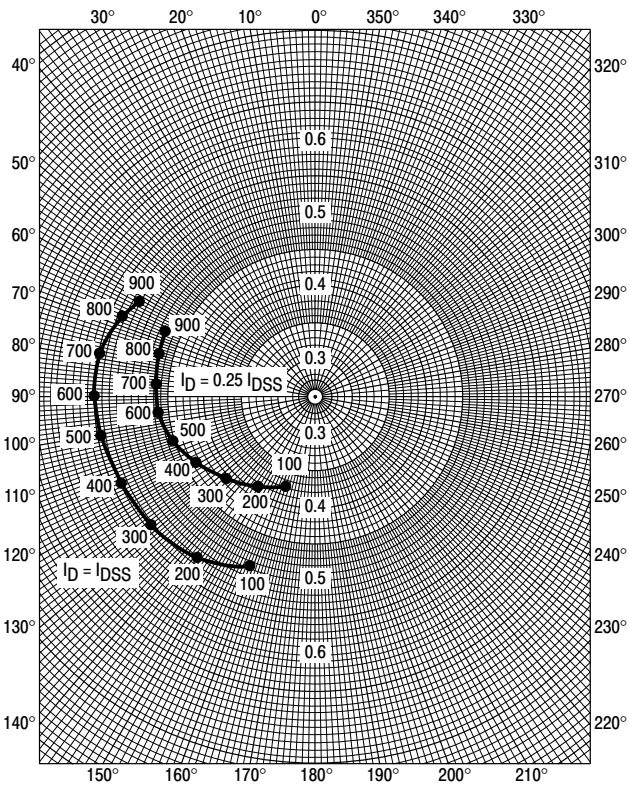


Figure 7. S_{21s}

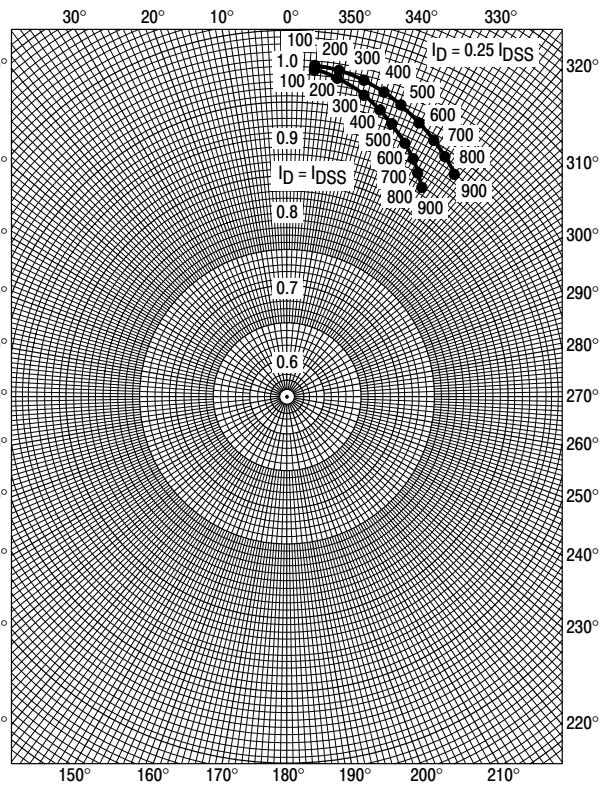


Figure 8. S_{22s}

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

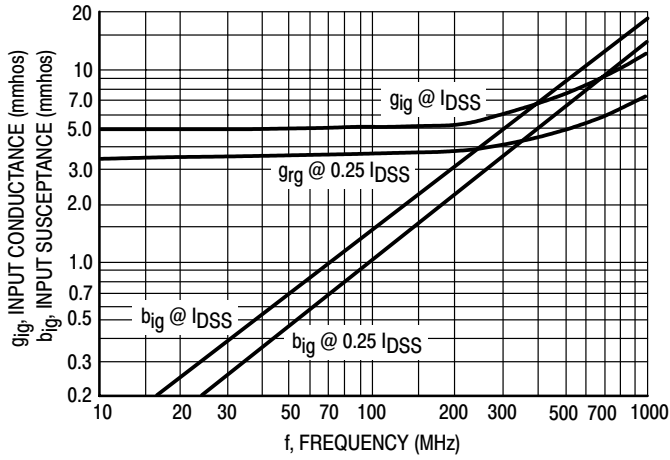


Figure 9. Input Admittance (y_{ig})

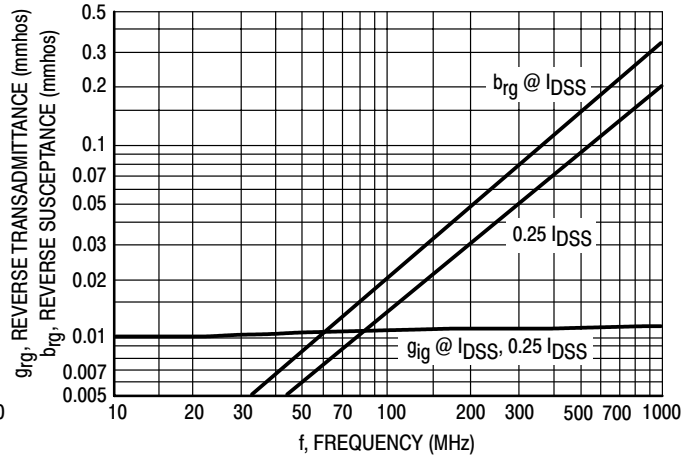


Figure 10. Reverse Transfer Admittance (y_{rg})

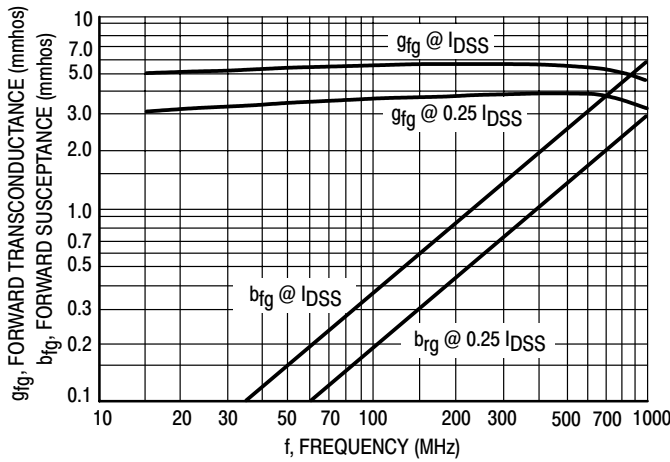


Figure 11. Forward Transfer Admittance (y_{fg})

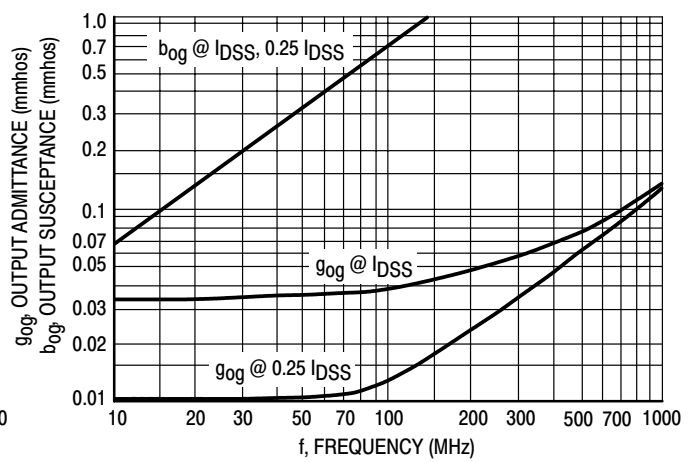


Figure 12. Output Admittance (y_{og})

**COMMON GATE CHARACTERISTICS
S-PARAMETERS**

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

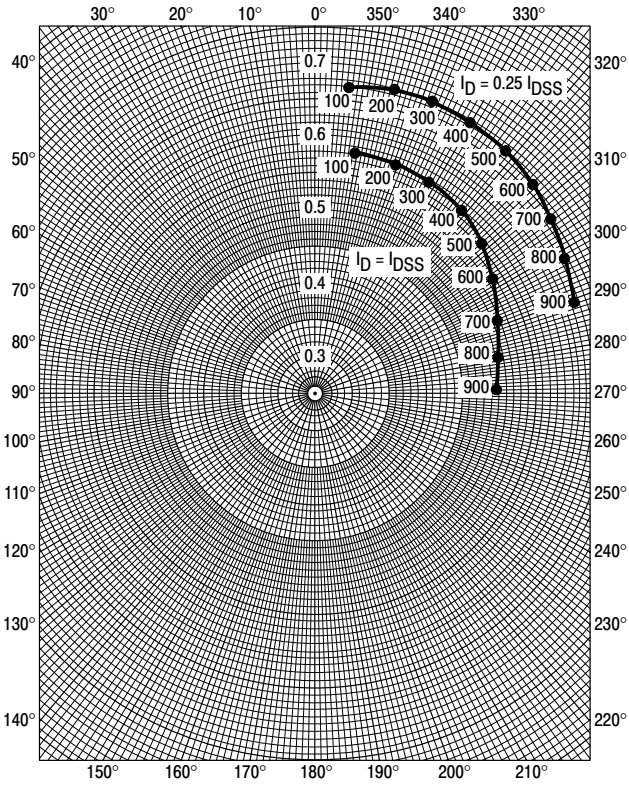


Figure 13. S_{11g}

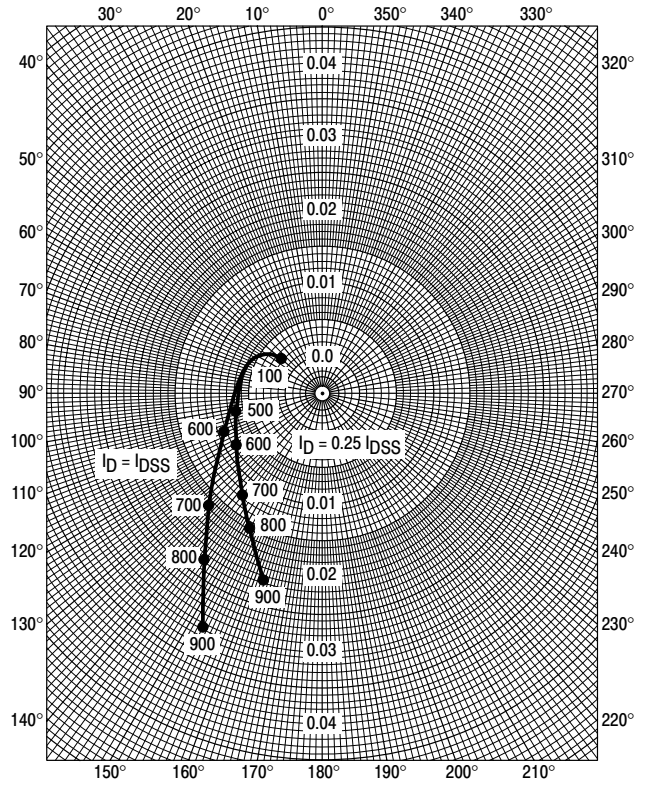


Figure 14. S_{12g}

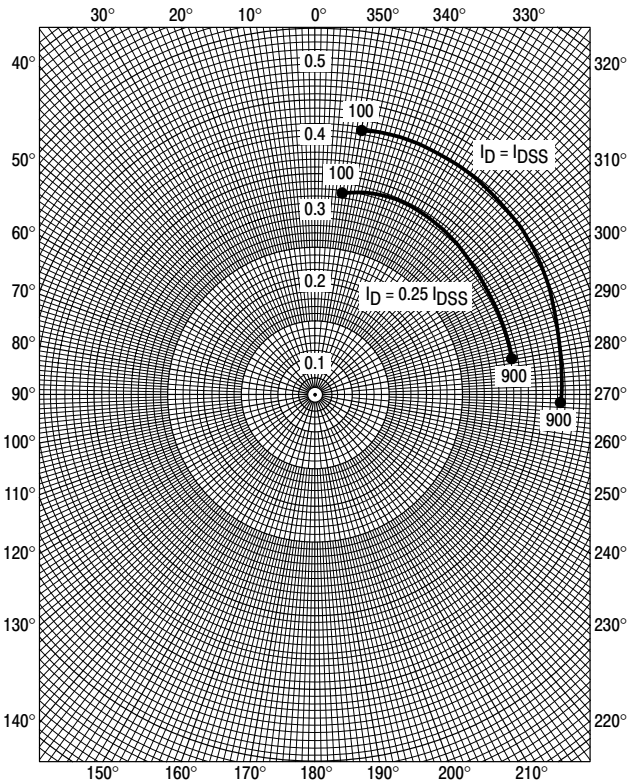


Figure 15. S_{21a}

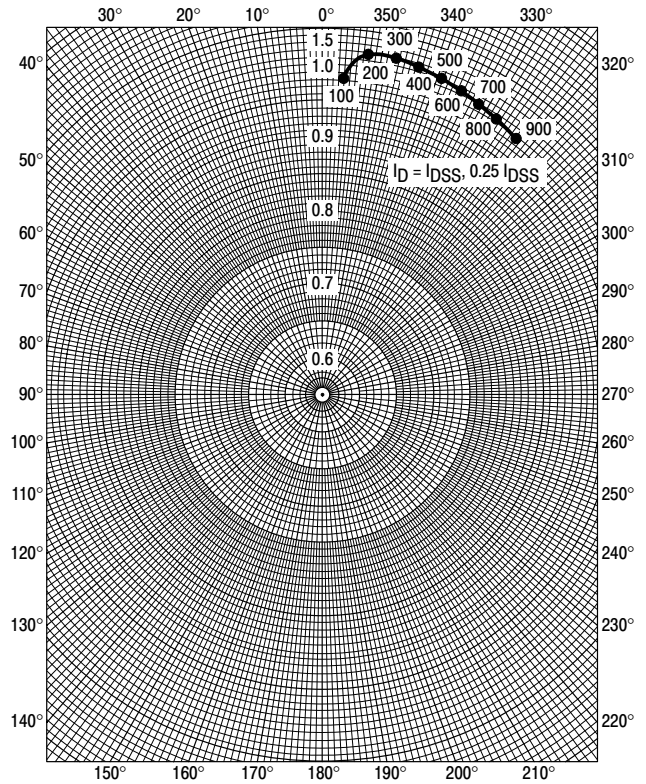
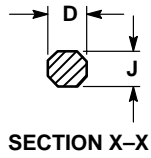
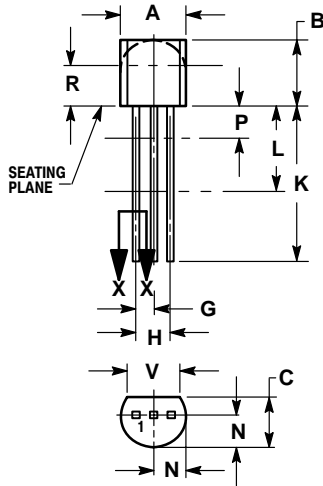


Figure 16. S_{22a}

2N5486

PACKAGE DIMENSIONS

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



STYLE 5:
PIN 1. DRAIN
2. SOURCE
3. GATE

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	---

Notes

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