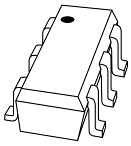


BF1207

Dual N-channel dual gate MOSFET

Rev. 01 — 28 July 2005 Product data sheet

1. Product profile

1.1 General description

The BF1207 is a combination of two dual gate MOSFET amplifiers with shared source and gate2 leads and an integrated switch.

The source and substrate are interconnected. Internal bias circuits enable Direct Current (DC) stabilization and a very good cross-modulation performance during Automatic Gain Control (AGC). Integrated diodes between the gates and source protect against excessive input voltage surges. The BF1207 has a SOT363 micro-miniature plastic package.

CAUTION

This device is sensitive to ElectroStatic Discharge (ESD). Therefore care should be taken during transport and handling.

1.2 Features

- Two low noise gain controlled amplifiers in a single package. One with a fully integrated bias and one with partly integrated bias
- Internal switch to save external components
- Superior cross-modulation performance during AGC
- High forward transfer admittance
- High forward transfer admittance to input capacitance ratio

1.3 Applications

- Gain controlled low noise amplifiers for Very High Frequency (VHF) and Ultra High Frequency (UHF) applications with 5 V supply voltage, such as digital and analog television tuners and professional communication equipment

PHILIPS

1.4 Quick reference data

Table 1: Quick reference data

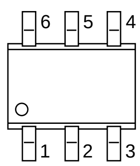
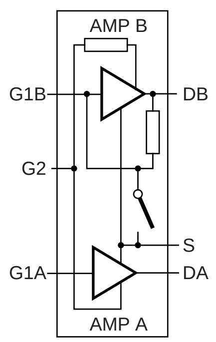
Per MOSFET unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{DS}	drain-source voltage	DC	-	-	6	V
I_D	drain current	DC	-	-	30	mA
P_{tot}	total power dissipation	$T_{sp} \leq 107$ °C [1]	-	-	180	mW
$\lvert y_{fs} \rvert$	forward transfer admittance	f = 1 MHz				
		amplifier A; I_D = 18 mA	25	30	40	mS
		amplifier B; I_D = 14 mA	26	31	41	mS
$C_{iss(G1)}$	input capacitance at gate1	f = 100 MHz				
		amplifier A	-	2.2	2.7	pF
		amplifier B	-	1.9	2.4	pF
C_{rss}	reverse transfer capacitance	f = 100 MHz	-	20	-	fF
NF	noise figure	amplifier A; f = 400 MHz	-	1.3	-	dB
		amplifier B; f = 800 MHz	-	1.4	-	dB
Xmod	cross-modulation	input level for k = 1 % at 40 dB AGC				
		amplifier A	100	105	-	dBμV
		amplifier B	100	103	-	dBμV
T_j	junction temperature		-	-	150	°C

[1] T_{sp} is the temperature at the soldering point of the source lead.

2. Pinning information

Table 2: Discrete pinning

Pin	Description	Simplified outline	Symbol
1	drain (AMP A)		
2	source		
3	drain (AMP B)		
4	gate1 (AMP B)		
5	gate2		
6	gate1 (AMP A)		

sym108

3. Ordering information

Table 3: Ordering information

Type number	Package		
	Name	Description	Version
BF1207	-	plastic surface mounted package; 6 leads	SOT363

4. Marking

Table 4: Marking

Type number	Marking code [1]
BF1207	M2*

[1] * = p: Made in Hong Kong.
* = t: Made in Malaysia.
* = W: Made in China.

5. Limiting values

Table 5: Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
Per MOSFET					
V_{DS}	drain-source voltage	DC	-	6	V
I_D	drain current	DC	-	30	mA
I_{G1}	gate1 current		-	±10	mA
I_{G2}	gate2 current		-	±10	mA
P_{tot}	total power dissipation	$T_{sp} \leq 107$ °C [1]	-	180	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		-	150	°C

[1] T_{sp} is the temperature at the soldering point of the source lead.

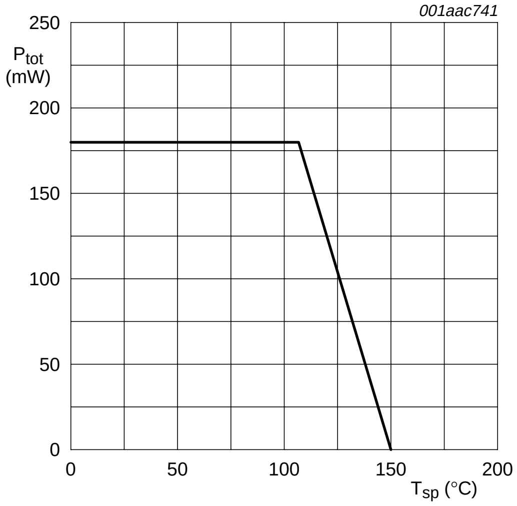


Fig 1. Power derating curve

6. Thermal characteristics

Table 6: Thermal characteristics

Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to soldering point		240	K/W

7. Static characteristics

Table 7: Static characteristics

T_j = 25 °C.

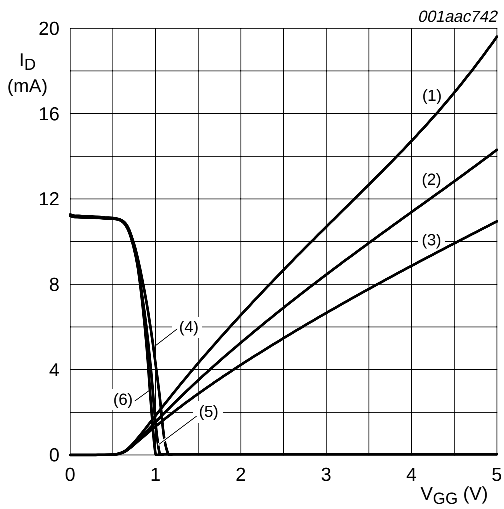
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per MOSFET; unless otherwise specified						
$V_{(BR)DSS}$	drain-source breakdown voltage	$V_{G1-S} = V_{G2-S} = 0$ V; $I_D = 10$ µA				
		amplifier A	6	-	-	V
		amplifier B	6	-	-	V
$V_{(BR)G1-SS}$	gate1-source breakdown voltage	$V_{GS} = V_{DS} = 0$ V; $I_{G1-S} = 10$ mA	6	-	10	V
$V_{(BR)G2-SS}$	gate2-source breakdown voltage	$V_{GS} = V_{DS} = 0$ V; $I_{G2-S} = 10$ mA	6	-	10	V
$V_{F(S-G1)}$	forward source-gate1 voltage	$V_{G2-S} = V_{DS} = 0$ V; $I_{S-G1} = 10$ mA	0.5	-	1.5	V
$V_{F(S-G2)}$	forward source-gate2 voltage	$V_{G1-S} = V_{DS} = 0$ V; $I_{S-G2} = 10$ mA	0.5	-	1.5	V
$V_{G1-S(th)}$	gate1-source threshold voltage	$V_{DS} = 5$ V; $V_{G2-S} = 4$ V; $I_D = 100$ µA	0.3	-	1.0	V
$V_{G2-S(th)}$	gate2-source threshold voltage	$V_{DS} = 5$ V; $V_{G1-S} = 5$ V; $I_D = 100$ µA	0.4	-	1.0	V
I_{DSX}	drain-source current	$V_{G2-S} = 4$ V; $V_{DS} = 5$ V; $R_{G1} = 68$ kΩ				
		amplifier A [1]	13	-	23	mA
		amplifier B [2]	9	-	19	mA

Table 7: Static characteristics *...continued*
T_j = 25 °C.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{G1-S}	gate1 cut-off current	$V_{G2-S} = V_{DS(A)} = 0$ V				
		amplifier A; $V_{G1-S(A)} = 5$ V; $V_{DS(B)} = 0$ V	-	-	50	nA
		amplifier B; $V_{G1-S(A)} = 0$ V; $I_{D(B)} = 0$ A	-	-	50	nA
I_{G2-S}	gate2 cut-off current	$V_{G2-S} = 4$ V; $V_{G1-S} = V_{DS(A)} = V_{DS(B)} = 0$ V;	-	-	20	nA

[1] R_{G1} connects gate1 (A) to V_{GG} = 5 V (see Figure 3).

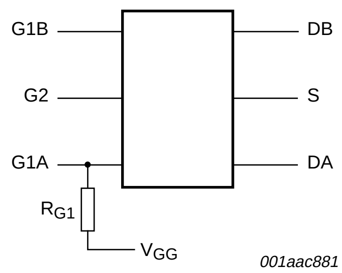
[2] R_{G1} connects gate1 (B) to V_{GG} = 0 V (see Figure 3).



(1) $I_{D(A)}$; R_{G1} = 47 kΩ.
(2) $I_{D(A)}$; R_{G1} = 68 kΩ.
(3) $I_{D(A)}$; R_{G1} = 100 kΩ.
(4) $I_{D(B)}$; R_{G1} = 100 kΩ.
(5) $I_{D(B)}$; R_{G1} = 68 kΩ.
(6) $I_{D(B)}$; R_{G1} = 47 kΩ.

$V_{DS(A)} = V_{DS(B)} = 5$ V; $V_{G2-S} = 4$ V; T_j = 25 °C.

Fig 2. Drain currents of MOSFET A and B as function of V_{GG}



V_{GG} = 5 V: amplifier A is on; amplifier B is off.
V_{GG} = 0 V: amplifier A is off; amplifier B is on.

Fig 3. Functional diagram

8. Dynamic characteristics

8.1 Dynamic characteristics for amplifier A

Table 8: Dynamic characteristics for amplifier A

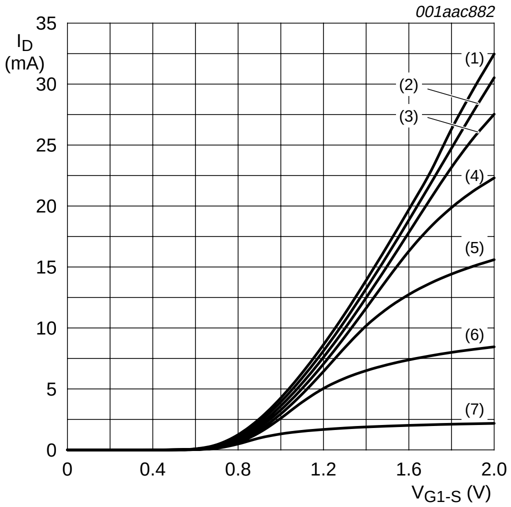
Common source; T_{amb} = 25 °C; V_{G2-S} = 4 V; V_{DS} = 5 V; I_D = 18 mA. [1]

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$\|y_{fs}\|$	forward transfer admittance	T_j = 25 °C		25	30	40	mS
$C_{iss(G1)}$	input capacitance at gate1	f = 100 MHz		-	2.2	2.7	pF
$C_{iss(G2)}$	input capacitance at gate2	f = 1 MHz		-	3.5	-	pF
C_{oss}	output capacitance	f = 100 MHz		-	0.9	-	pF
C_{rss}	reverse transfer capacitance	f = 100 MHz		-	20	-	fF
G_{tr}	power gain	$B_S = B_{S(opt)}$; $B_L = B_{L(opt)}$					
		f = 200 MHz; G_S = 2 mS; G_L = 0.5 mS		30	34	38	dB
		f = 400 MHz; G_S = 2 mS; G_L = 1 mS		26	30	34	dB
		f = 800 MHz; G_S = 3.3 mS; G_L = 1 mS		21	25	29	dB
NF	noise figure	f = 11 MHz; G_S = 20 mS; B_S = 0 S		-	3.0	-	dB
		f = 400 MHz; $Y_S = Y_{S(opt)}$		-	1.3	-	dB
		f = 800 MHz; $Y_S = Y_{S(opt)}$		-	1.4	-	dB
Xmod	cross-modulation	input level for k = 1 %; f_w = 50 MHz; f_{unw} = 60 MHz	[2]				
		at 0 dB AGC		90	-	-	dBμV
		at 10 dB AGC		-	90	-	dBμV
		at 20 dB AGC		-	99	-	dBμV
		at 40 dB AGC		100	105	-	dBμV

[1] For the MOSFET not in use: $V_{G1-S(B)}$ = 0 V; $V_{DS(B)}$ = 0 V.

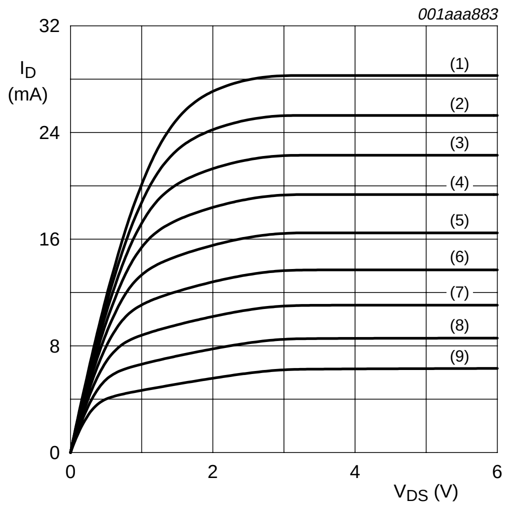
[2] Measured in Figure 29 test circuit.

8.1.1 Graphs for amplifier A



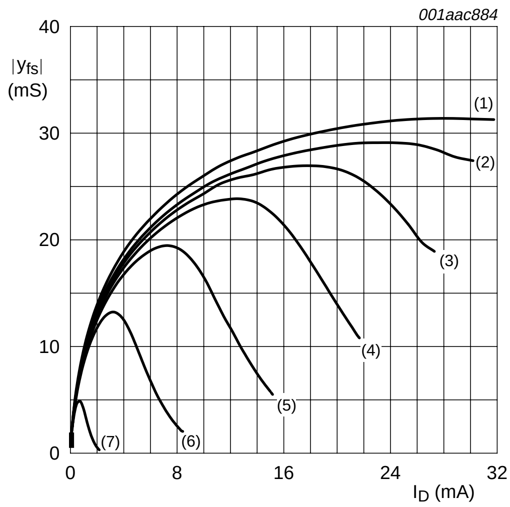
(1) V_{G2-S} = 4 V.
(2) V_{G2-S} = 3.5 V.
(3) V_{G2-S} = 3 V.
(4) V_{G2-S} = 2.5 V.
(5) V_{G2-S} = 2 V.
(6) V_{G2-S} = 1.5 V.
(7) V_{G2-S} = 1 V.
$V_{DS(A)}$ = 5 V; T_j = 25 °C.

Fig 4. Amplifier A: transfer characteristics; typical values



(1) $V_{G1-S(A)}$ = 1.9 V.
(2) $V_{G1-S(A)}$ = 1.8 V.
(3) $V_{G1-S(A)}$ = 1.7 V.
(4) $V_{G1-S(A)}$ = 1.6 V.
(5) $V_{G1-S(A)}$ = 1.5 V.
(6) $V_{G1-S(A)}$ = 1.4 V.
(7) $V_{G1-S(A)}$ = 1.3 V.
(8) $V_{G1-S(A)}$ = 1.2 V.
(9) $V_{G1-S(A)}$ = 1.1 V.
$V_{DS(A)}$ = 5 V; V_{G2-S} = 4 V; T_j = 25 °C.

Fig 5. Amplifier A: output characteristics; typical values



(1) $V_{G2\text{-}S}$ = 4 V.

(2) $V_{G2\text{-}S}$ = 3.5 V.

(3) $V_{G2\text{-}S}$ = 3 V.

(4) $V_{G2\text{-}S}$ = 2.5 V.

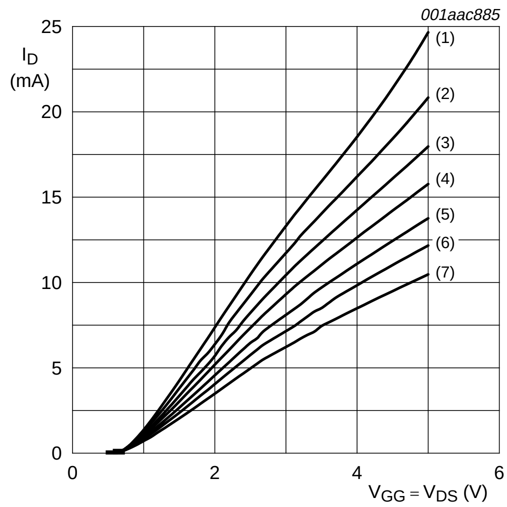
(5) $V_{G2\text{-}S}$ = 2 V.

(6) $V_{G2\text{-}S}$ = 1.5 V.

(7) $V_{G2\text{-}S}$ = 1 V.

$V_{DS(A)}$ = 5 V; T_j = 25 °C.

Fig 6. Amplifier A: forward transfer admittance as a function of drain current; typical values



(1) $R_{G1(A)}$ = 39 kΩ.

(2) $R_{G1(A)}$ = 47 kΩ.

(3) $R_{G1(A)}$ = 68 kΩ.

(4) $R_{G1(A)}$ = 82 kΩ.

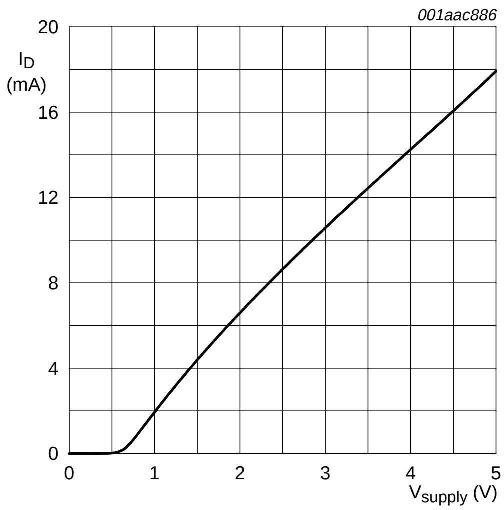
(5) $R_{G1(A)}$ = 100 kΩ.

(6) $R_{G1(A)}$ = 120 kΩ.

(7) $R_{G1(A)}$ = 150 kΩ.

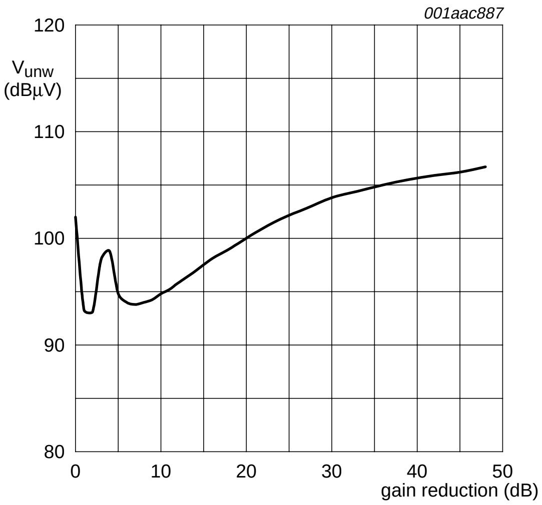
$V_{G2\text{-}S}$ = 4 V; T_j = 25 °C.

Fig 7. Amplifier A: drain current as a function of V_{DS} and V_{GG}; typical values



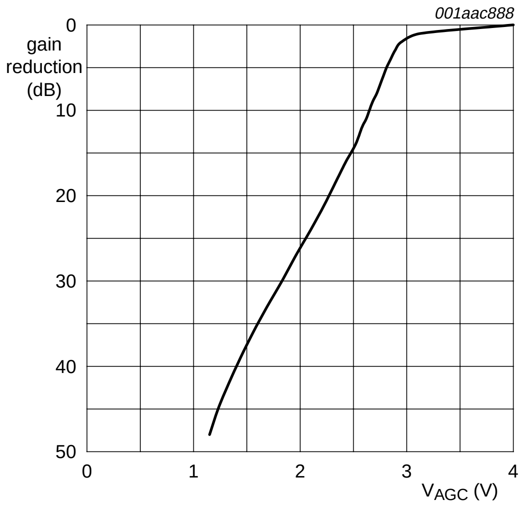
$V_{G2\text{-}S}$ = 4 V, T_j = 25 °C, $R_{G1(B)}$ = 68 kΩ (connected to ground); see Figure 3.

Fig 8. Amplifier A: drain current of amplifier A as a function of supply voltage of A and B amplifier; typical values



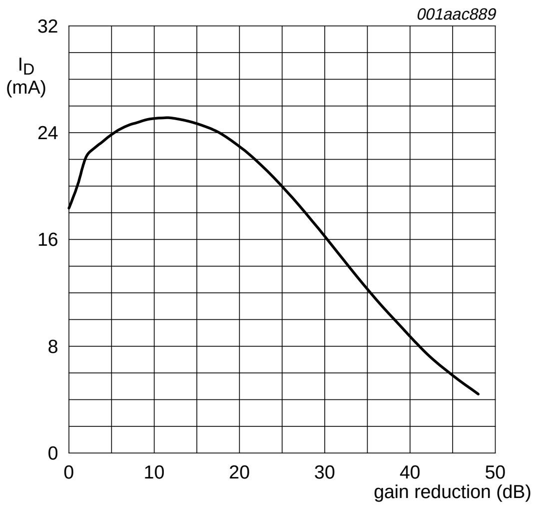
$V_{DS(A)} = V_{DS(B)} = 5$ V; $V_{G1\text{-}S(B)} = 0$ V; $f_w = 50$ MHz; $f_{unw} = 60$ MHz; $T_{amb} = 25$ °C; see Figure 29.

Fig 9. Amplifier A: unwanted voltage for 1 % cross-modulation as a function of gain reduction; typical values



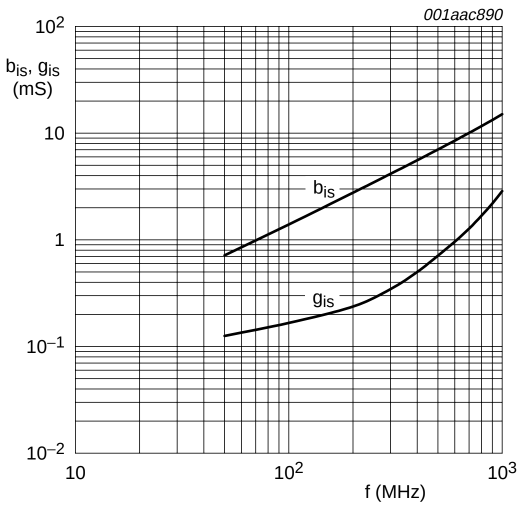
$V_{DS(A)} = V_{DS(B)} = 5$ V; $V_{G1\text{-}S(B)} = 0$ V; f = 50 MHz; see Figure 29.

Fig 10. Amplifier A: gain reduction as a function of AGC voltage; typical values



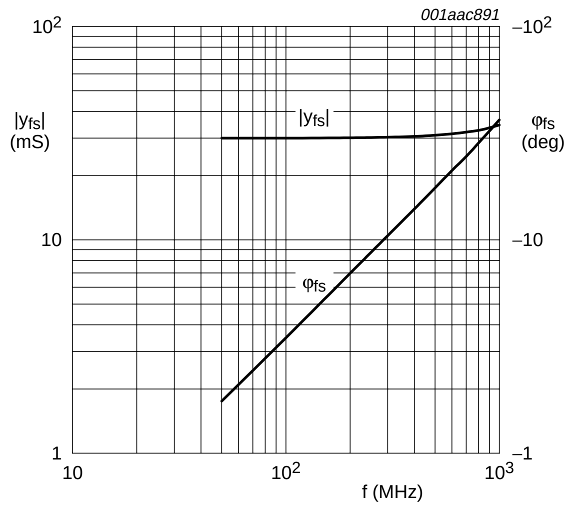
$V_{DS(A)} = V_{DS(B)} = 5$ V; $V_{G1\text{-}S(B)} = 0$ V; f = 50 MHz; $T_{amb} = 25$ °C; see Figure 29.

Fig 11. Amplifier A: drain current as a function of gain reduction; typical values



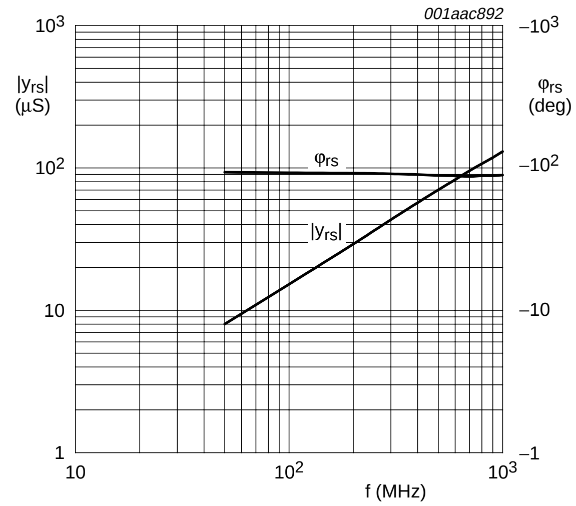
$V_{DS(A)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(B)}$ = $V_{G1\text{-}S(B)}$ = 0 V;
$I_{D(A)}$ = 18 mA.

Fig 12. Amplifier A: input admittance as a function of frequency; typical values



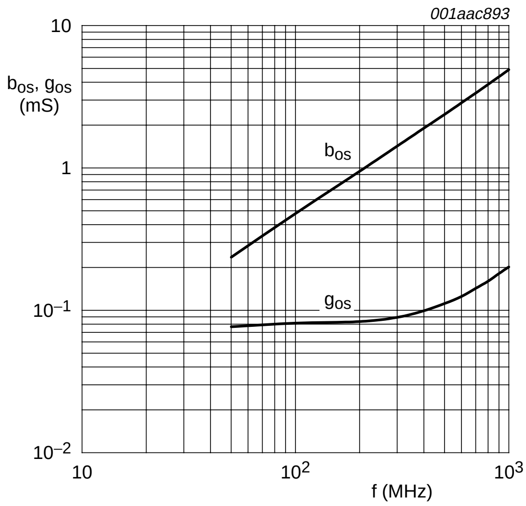
$V_{DS(A)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(B)}$ = $V_{G1\text{-}S(B)}$ = 0 V;
$I_{D(A)}$ = 18 mA.

Fig 13. Amplifier A: forward transfer admittance and phase as a function of frequency; typical values



$V_{DS(A)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(B)}$ = $V_{G1\text{-}S(B)}$ = 0 V;
$I_{D(A)}$ = 18 mA.

Fig 14. Amplifier A: reverse transfer admittance and phase as a function of frequency: typical values



$V_{DS(A)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(B)}$ = $V_{G1\text{-}S(B)}$ = 0 V;
$I_{D(A)}$ = 18 mA.

Fig 15. Amplifier A: output admittance as a function of frequency; typical values

8.1.2 Scattering parameters for amplifier A

Table 9: Scattering parameters for amplifier A

$V_{DS(A)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $I_{D(A)}$ = 18 mA; $V_{DS(B)}$ = 0 V; $V_{G1\text{-}S(B)}$ = 0 V; T_{amb} = 25 °C; typical values.

f (MHz)	s_{11}		s_{21}		s_{12}		s_{22}	
	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)
50	0.987	–4.169	2.87	175.5	0.0008	83.82	0.992	–1.42
100	0.983	–8.109	2.95	171.14	0.0015	82.08	0.992	–2.86
200	0.976	–15.97	2.93	162.44	0.0028	77.50	0.990	–5.66
300	0.966	–23.844	2.89	153.77	0.0041	73.45	0.989	–8.49
400	0.952	–31.575	2.84	145.23	0.0053	69.42	0.986	–11.28
500	0.935	–35.225	2.78	136.82	0.0063	65.72	0.984	–14.03
600	0.917	–46.678	2.72	128.50	0.0072	61.48	0.981	–16.80
700	0.898	–54.094	2.65	120.44	0.0079	58.05	0.977	–19.55
800	0.876	–61.205	2.57	112.33	0.0084	52.74	0.974	–22.32
900	0.852	–68.299	2.49	104.32	0.0089	48.61	0.970	–25.10
1000	0.826	–75.321	2.41	96.42	0.0091	43.86	0.967	–27.88

8.2 Dynamic characteristics for amplifier B

Table 10: Dynamic characteristics for amplifier B

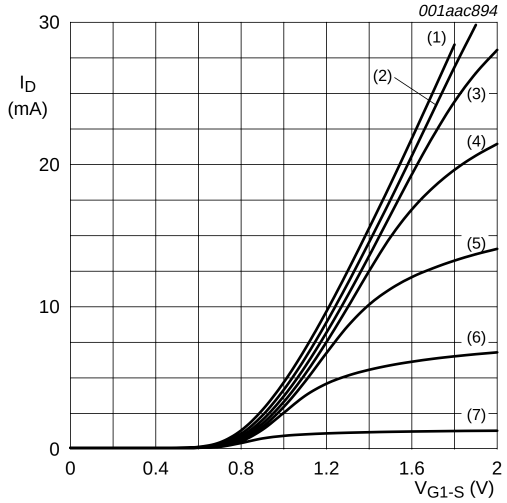
Common source; T_{amb} = 25 °C; V_{G2-S} = 4 V; V_{DS} = 5 V; I_D = 14 mA. [1]

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$\lvert y_{fs} \rvert$	forward transfer admittance	T_j = 25 °C	26	31	41	mS
$C_{iss(G1)}$	input capacitance at gate1	f = 100 MHz	-	1.8	2.3	pF
$C_{iss(G2)}$	input capacitance at gate2	f = 1 MHz	-	3.5	-	pF
C_{oss}	output capacitance	f = 100 MHz	-	0.8	-	pF
C_{rss}	reverse transfer capacitance	f = 100 MHz	-	20	-	fF
G_{tr}	power gain	$B_S = B_{S(opt)}$; $B_L = B_{L(opt)}$				
		f = 200 MHz; G_S = 2 mS; G_L = 0.5 mS	30	34	38	dB
		f = 400 MHz; G_S = 2 mS; G_L = 1 mS	27	31	35	dB
		f = 800 MHz; G_S = 3.3 mS; G_L = 1 mS	23	27	31	dB
NF	noise figure	f = 11 MHz; G_S = 20 mS; B_S = 0 S	-	5	-	dB
		f = 400 MHz; $Y_S = Y_{S(opt)}$	-	1.3	-	dB
		f = 800 MHz; $Y_S = Y_{S(opt)}$	-	1.4	-	dB
Xmod	cross-modulation	input level for k = 1 %; f_w = 50 MHz; f_{unw} = 60 MHz [2]				
		at 0 dB AGC	90	-	-	dBμV
		at 10 dB AGC	-	88	-	dBμV
		at 20 dB AGC	-	94	-	dBμV
		at 40 dB AGC	100	103	-	dBμV

[1] For the MOSFET not in use: $V_{G1-S(A)}$ = 0 V; $V_{DS(A)}$ = 0 V.

[2] Measured in Figure 30 test circuit.

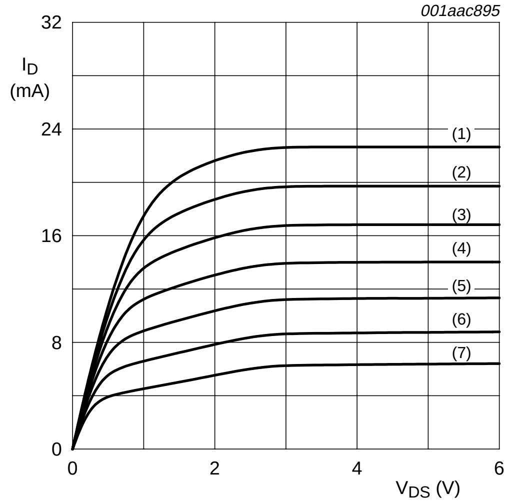
8.2.1 Graphs for amplifier B



(1) V_{G2-S} = 4 V.
(2) V_{G2-S} = 3.5 V.
(3) V_{G2-S} = 3 V.
(4) V_{G2-S} = 2.5 V.
(5) V_{G2-S} = 2 V.
(6) V_{G2-S} = 1.5 V.
(7) V_{G2-S} = 1 V.

$V_{DS(B)}$ = 5 V; $V_{G1-S(A)}$ = 0 V; T_j = 25 °C.

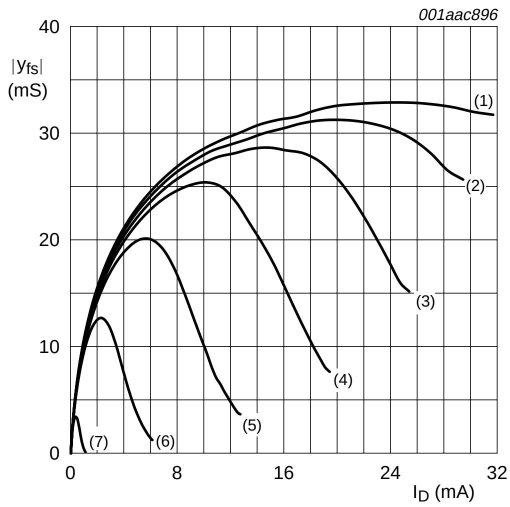
Fig 16. Amplifier B: transfer characteristics; typical values



(1) $V_{G1-S(B)}$ = 1.7 V.
(2) $V_{G1-S(B)}$ = 1.6 V.
(3) $V_{G1-S(B)}$ = 1.5 V.
(4) $V_{G1-S(B)}$ = 1.4 V.
(5) $V_{G1-S(B)}$ = 1.3 V.
(6) $V_{G1-S(B)}$ = 1.2 V.
(7) $V_{G1-S(B)}$ = 1.1 V.

V_{G2-S} = 4 V; $V_{G1-S(A)}$ = 0 V; T_j = 25 °C.

Fig 17. Amplifier B: output characteristics; typical values



(1) $V_{G2\text{-}S}$ = 4 V.

(2) $V_{G2\text{-}S}$ = 3.5 V.

(3) $V_{G2\text{-}S}$ = 3 V.

(4) $V_{G2\text{-}S}$ = 2.5 V.

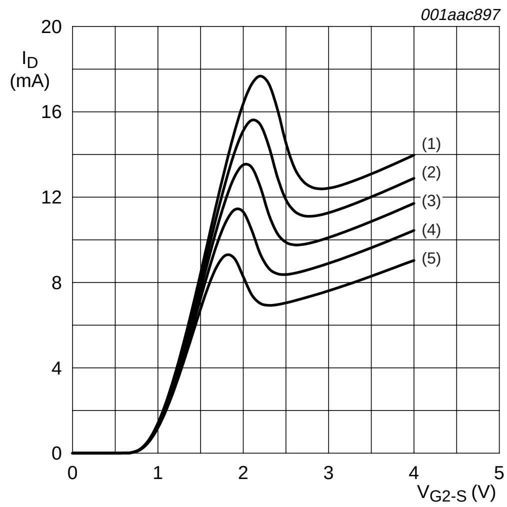
(5) $V_{G2\text{-}S}$ = 2 V.

(6) $V_{G2\text{-}S}$ = 1.5 V.

(7) $V_{G2\text{-}S}$ = 1 V.

$V_{DS(B)}$ = 5 V; $V_{G1\text{-}S(A)}$ = 0 V; T_j = 25 °C.

Fig 18. Amplifier B: forward transfer admittance as a function of drain current; typical values



(1) V_{DS} = 5 V.

(2) V_{DS} = 4.5 V.

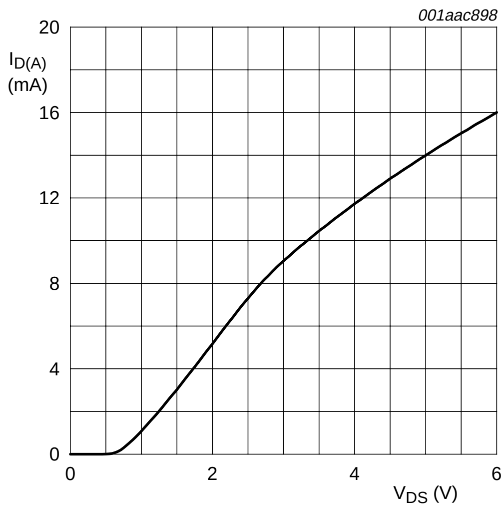
(3) V_{DS} = 4 V.

(4) V_{DS} = 3.5 V.

(5) V_{DS} = 3 V.

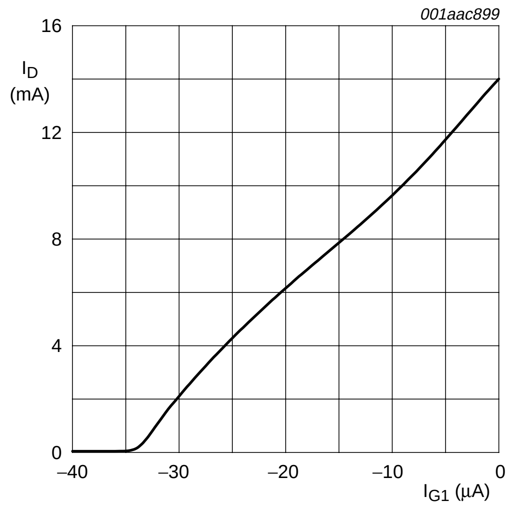
$V_{G1\text{-}S(A)}$ = 0 V; T_j = 25 °C.

Fig 19. Amplifier B: drain current as function of gate2 voltage; typical values



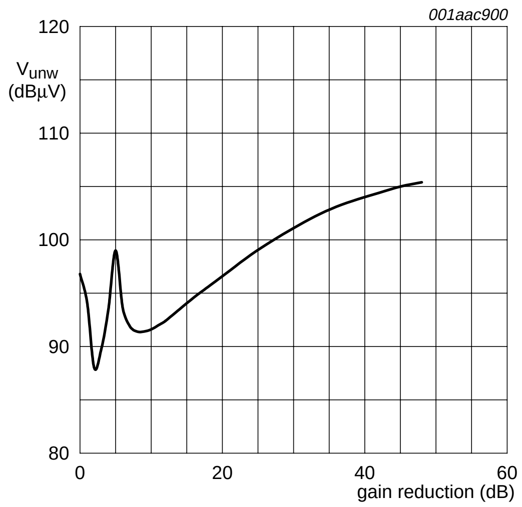
$V_{DS(B)}$ = 5 V; $V_{G1\text{-}S(A)}$ = 0 V; T_j = 25 °C.

Fig 20. Amplifier B: drain current as a function of drain source voltage; typical values



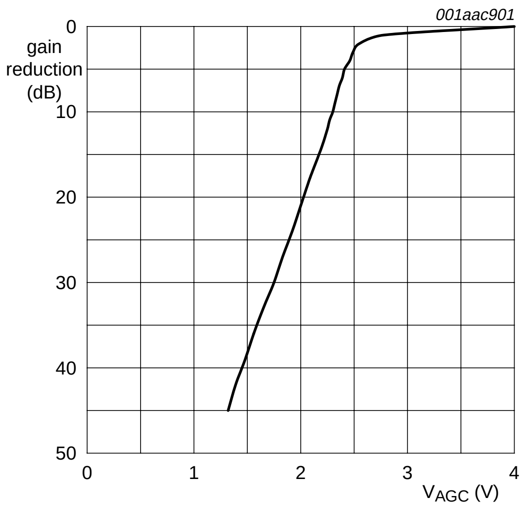
$V_{DS(B)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{G1\text{-}S(A)}$ = 0 V; T_j = 25 °C.

Fig 21. Amplifier B: drain current as a function of gate1 current; typical values



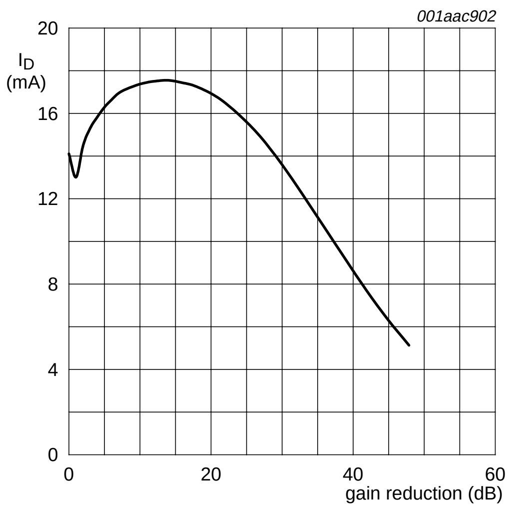
$V_{DS(B)}$ = 5 V; V_{GG} = 5 V; $V_{DS(A)}$ = $V_{G1-S(A)}$ = 0 V; $R_{G1(B)}$ = 150 kΩ (connected to V_{GG}); f_w = 50 MHz; f_{unw} = 60 MHz; T_{amb} = 25 °C; see Figure 30.

Fig 22. Amplifier B: unwanted voltage for 1 % cross-modulation as a function of gain reduction; typical values



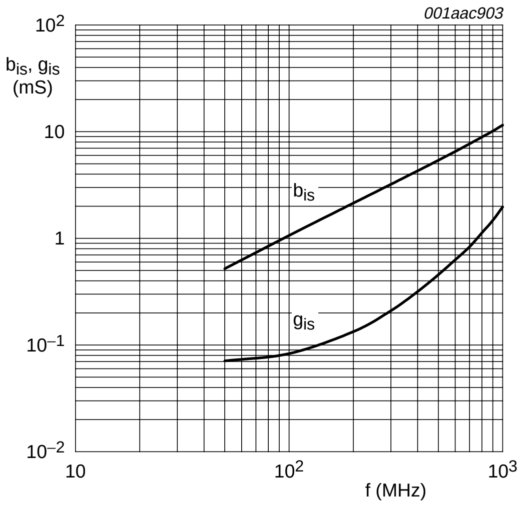
$V_{DS(B)}$ = 5 V; V_{GG} = 5 V; $V_{DS(A)}$ = $V_{G1-S(A)}$ = 0 V; $R_{G1(B)}$ = 150 kΩ (connected to V_{GG}); f = 50 MHz; T_{amb} = 25 °C; see Figure 30.

Fig 23. Amplifier B: typical gain reduction as a function of AGC voltage; typical values



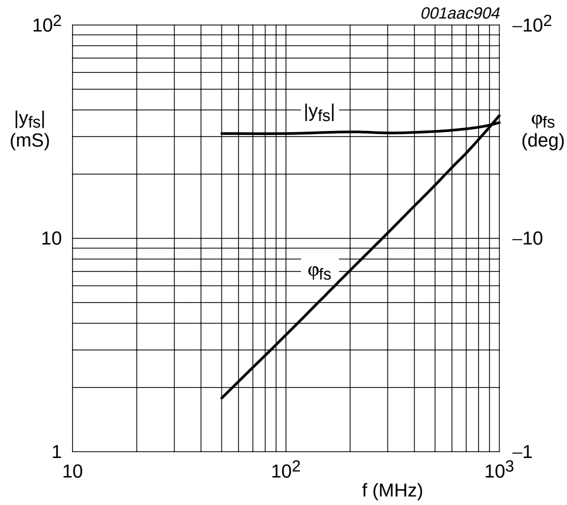
$V_{DS(B)}$ = 5 V; V_{GG} = 5 V; $V_{DS(A)}$ = $V_{G1-S(A)}$ = 0 V; $R_{G1(B)}$ = 150 kΩ (connected to V_{GG}); f = 50 MHz; T_{amb} = 25 °C; see Figure 30.

Fig 24. Amplifier B: drain current as a function of gain reduction; typical values



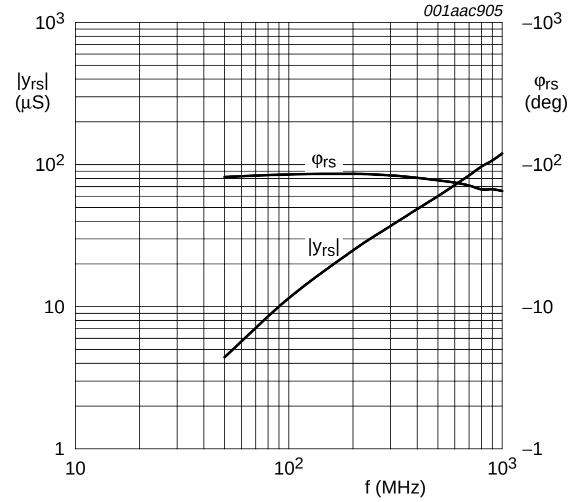
$V_{DS(B)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(A)}$ = $V_{G1\text{-}S(A)}$ = 0 V; $I_{D(B)}$ = 14 mA.

Fig 25. Amplifier B: input admittance as a function of frequency; typical values



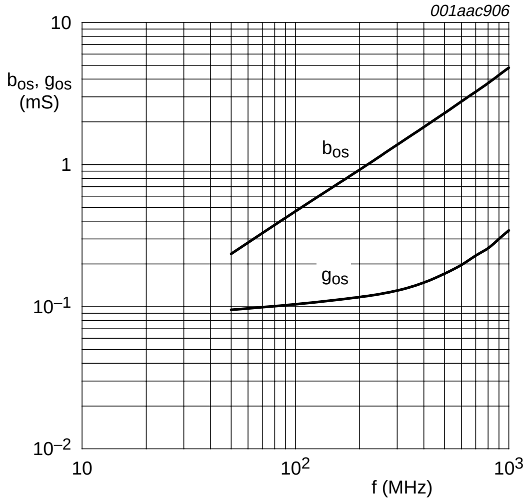
$V_{DS(B)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(A)}$ = $V_{G1\text{-}S(A)}$ = 0 V; $I_{D(B)}$ = 14 mA.

Fig 26. Amplifier B: forward transfer admittance and phase as a function of frequency; typical values



$V_{DS(B)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(A)}$ = $V_{G1\text{-}S(A)}$ = 0 V; $I_{D(B)}$ = 14 mA.

Fig 27. Amplifier B: reverse transfer admittance and phase as a function of frequency; typical values



$V_{DS(B)}$ = 5 V; $V_{G2\text{-}S}$ = 4 V; $V_{DS(A)}$ = $V_{G1\text{-}S(A)}$ = 0 V; $I_{D(B)}$ = 14 mA.

Fig 28. Amplifier B: output admittance as a function of frequency; typical values

8.2.2 Scattering parameters for amplifier B

Table 11: Scattering parameters for amplifier B

$V_{DS(B)}$ = 5 V; V_{G2-S} = 4 V; $I_{D(B)}$ = 14 mA; $V_{DS(A)}$ = 0 V; $V_{G1-S(A)}$ = 0 V; T_{amb} = 25 °C; typical values.

f (MHz)	s_{11}		s_{21}		s_{12}		s_{22}	
	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)	Magnitude (ratio)	Angle (deg)
50	0.993	–3.018	3.07	176.04	0.0004	95.97	0.991	–1.39
100	0.992	–6.186	3.07	172.05	0.0011	90.33	0.990	–2.79
200	0.987	–12.43	3.09	164.13	0.0024	85.03	0.988	–5.49
300	0.979	–18.60	3.02	156.28	0.0036	82.94	0.986	–8.21
400	0.969	–24.62	2.99	148.48	0.0046	81.97	0.983	–10.91
500	0.957	–30.72	2.95	140.69	0.0056	81.03	0.980	–13.63
600	0.943	–36.71	2.90	132.87	0.0065	79.77	0.977	–16.40
700	0.927	–42.77	2.86	125.21	0.0074	79.04	0.973	–19.13
800	0.907	–48.91	2.79	117.22	0.0082	79.42	0.969	–21.93
900	0.885	–54.77	2.736	109.29	0.0086	75.47	0.964	–24.85
1000	0.858	–61.01	2.675	101.18	0.0092	73.48	0.958	–27.75

9. Test information

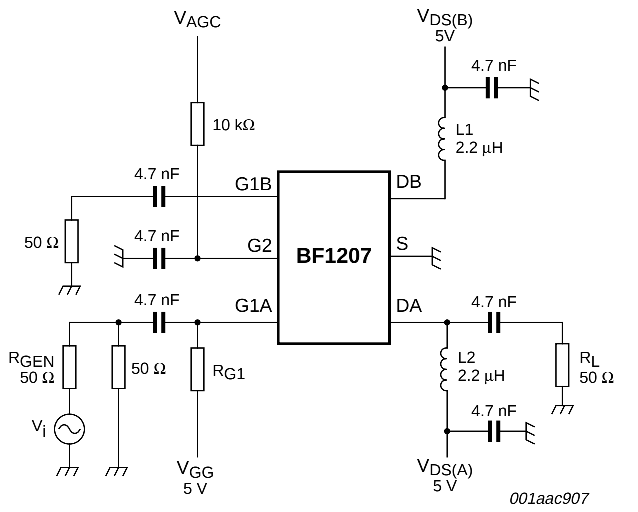


Fig 29. Cross-modulation test set-up for amplifier A

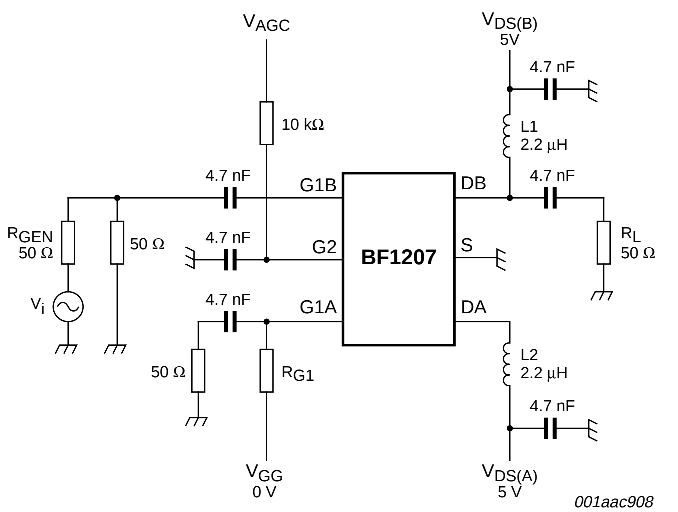
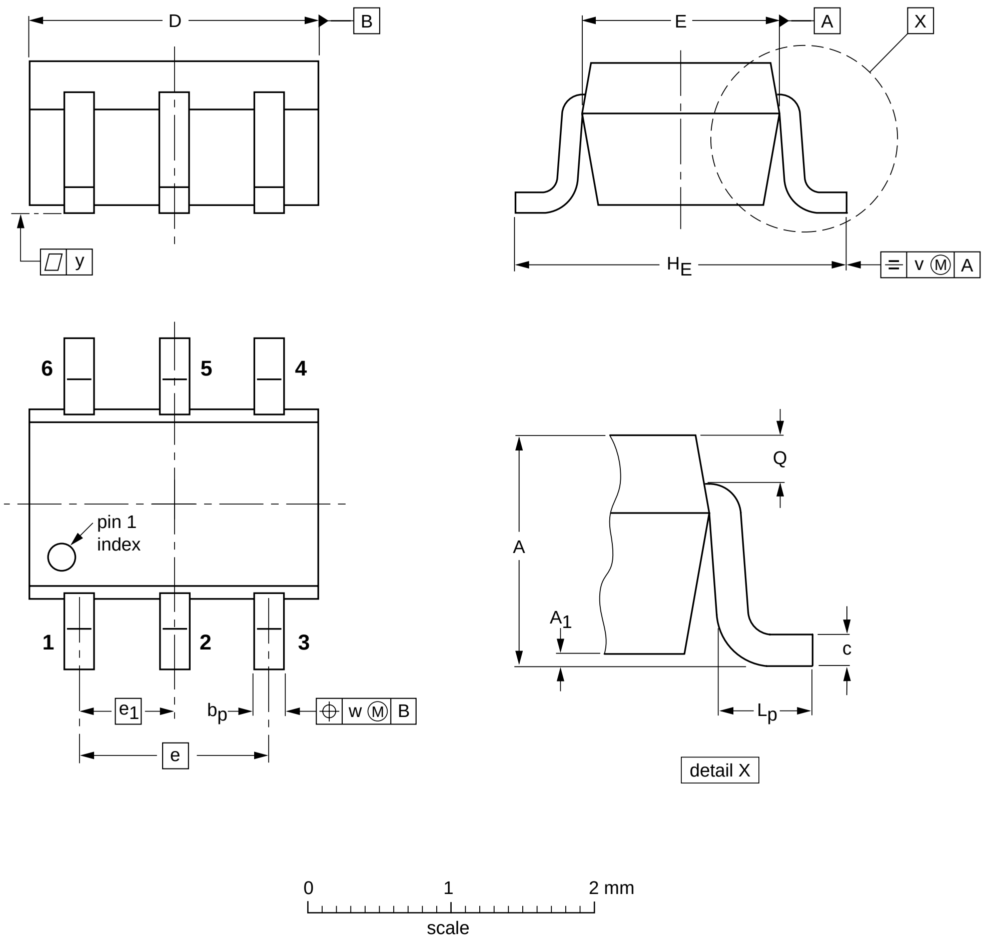


Fig 30. Cross-modulation test set-up for amplifier B

10. Package outline

Plastic surface mounted package; 6 leads **SOT363**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT363			SC-88			~~97-02-28~~ 04-11-08

Fig 31. Package outline SOT363

11. Revision history

Table 12: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
BF1207_1	20050728	Product data sheet	-	9397 750 14955	-

12. Data sheet status

Level	Data sheet status [1]	Product status [2] [3]	Definition
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

[1] Please consult the most recently issued data sheet before initiating or completing a design.

[2] The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.

[3] For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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17. Contents

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