PF0348 Series

MOS FET Power Amplifier Module
for UHF Band

HITACHI

ADE-208-343C (Z)
4th Edition
December 1996

Features

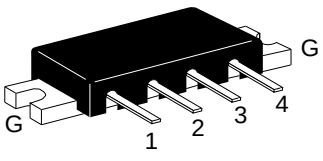
- Small package: 30 × 10 × 5.9 mm
- Low operation voltage: 7 W at 7.2 V
- Low power control current: 200 μA Typ

Ordering Information

Type Name	Operating Frequency
PF0348	330 to 360 MHz
PF0349	400 to 430 MHz
PF0350	440 to 470 MHz
PF0351	470 to 490 MHz
PF0352	490 to 520 MHz
PF0353	360 to 380 MHz

Pin Arrangement

• RF-J



1: Pin
2: Vapc
3: Vdd
4: Pout
G: GND

Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	17	V
Supply current	I_{DD}	3	A
PC voltage	V_{PC}	7	V
Input power	Pin	100	mW
Operating case temperature	Tc (op)	–30 to +100	°C
Storage temperature	Tstg	–40 to +110	°C

PF0348 Electrical Characteristics (Tc = 25°C)

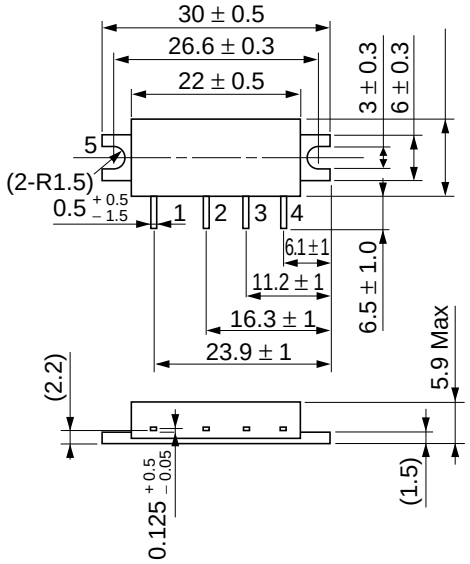
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I_{DS}	—	—	100	µA	V_{DD} = 17 V, V_{PC} = 0 V, R_L = Rg = 50 Ω,
Total efficiency	η_T	35	38	—	%	Pin = 50 mW, V_{DD} = 7.2 V, Pout = 6.8 W (at V_{PC} controlled), R_L = Rg = 50 Ω, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	–25	–20	dBc	
3rd harmonic distortion	3rd H.D.	—	–35	–30	dBc	
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	Pout (1)	6.8	7.5	—	W	Pin = 50 mW, V_{DD} = 7.2 V, V_{PC} = 6.0 V, R_L = Rg = 50 Ω
Output power (2)	Pout (2)	4.0	5.0	—	W	Pin = 50 mW, V_{DD} = 6.0 V, V_{PC} = 5.5 V, R_L = Rg = 50 Ω
Load VSWR tolerance	—	No degradation		—		Pin = 50 mW, V_{DD} = 15 V, Pout ≤ 6.8 W, (at V_{PC} controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation		—		Pin = 50 mW, V_{DD} = 6 to 15 V, Pout ≤ 6.8W, (at V_{PC} controlled), Output VSWR = 6:1 All phases

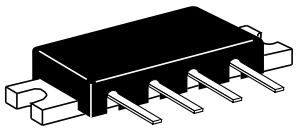
PF0349/50/51/52/53 Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I_{DS}	—	—	100	µA	V_{DD} = 17 V, V_{PC} = 0 V, R_L = Rg = 50 Ω,
Total efficiency	η_T	35	38	—	%	Pin = 50 mW, V_{DD} = 7.2 V, Pout = 7 W (at V_{PC} controlled), R_L = Rg = 50 Ω, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	–30	–25	dBc	
3rd harmonic distortion	3rd H.D.	—	–60	–40	dBc	
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	Pout (1)	7.0	8.0	—	W	Pin = 50 mW, V_{DD} = 7.2 V, V_{PC} = 6.0 V, R_L = Rg = 50 Ω
Output power (2)	Pout (2)	4.0	5.0	—	W	Pin = 50 mW, V_{DD} = 6.0 V, V_{PC} = 5.5 V, R_L = Rg = 50 Ω
Load VSWR tolerance	—	No degradation		—		Pin = 50 mW, V_{DD} = 15 V, Pout ≤ 7 W, (at V_{PC} controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation		—		Pin = 50 mW, V_{DD} = 6 to 15 V, Pout ≤ 7 W, (at V_{PC} controlled), Output VSWR = 6:1 All phases

Package Dimensions

Unit: mm





Hitachi Code	RF-J
JEDEC	—
EIAJ	—
Weight (reference value)	—

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