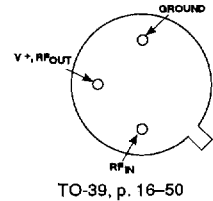


PRODUCT DESCRIPTION

The GPD and GPM amplifiers, available in TO-12 (4-pin) and TO-39 (3-pin) packages, are designed for applications which require the highest performance-to-cost ratio or where size is an important factor. Some versions are equipped with internal coupling and bypass capacitors, however the "60" Series

uses external coupling and bypass capacitors. This gives the user freedom to set the low frequency roll-off as needed. The GPM modules contain Si MMICs, while the GPD modules are discrete hybrid devices. These amplifiers are excellent for IF amplification purposes such as mixer postamps.



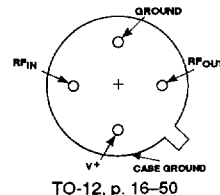
GPD SERIES LOW COST AMPLIFIERS, TO-39 PACKAGE¹

Guaranteed Specifications at 0° to 50°C Case Temperature

Model	Frequency Response (MHz)	Gain over 0° to 50°C (dB)	Gain ² over -55° to +85°C (dB)	Noise Figure (dB)	Power Output at 1 dB Gain Compression (dBm)	Gain Flatness (±dB)	3rd-Order Intercept Point (dBm)	Input Power (±1% Reg.)	
	Minimum	Minimum	Minimum	Typical	Typical	Typical	Typical	Voltage (VDC)	Current (mA)
GPD-110	0.1-400	—	12	4.0	-2.0	1.0	+12	2.5	10
GPD-120	0.1-400	—	13	5.5	+8.0	1.0	+24	5.5	25
GPD-130	0.1-400	—	12	7.0	+17.0	1.0	+27	6.0	60
GPD-310	0.1-1000	8	7	5.0	-1.0	1.0	+11	2.3	10
GPD-320	0.1-1000	8	7	5.0	+8.0	1.0	+18	3.0	25
GPD-330	0.1-1000	7	6	6.5	+16.0	1.0	+26	4.5	60
GPD-311	0.1-1000	12	11	4.5	+3.0	1.0	+15	2.7	15
GPD-321	0.1-1000	12	11	4.7	+8.0	1.0	+20	3.5	25
GPD-331	0.1-1000	10	9	6.0	+16.0	1.0	+28	5.5	60
GPD-410	0.1-1500	12	11	4.2	+2.5	1.0	+15	2.5	15
GPD-420	0.1-1500	11	10	4.7	+8.0	1.0	+20	2.8	25
GPD-430	0.1-1500	10	9	6.3	+16.0	1.0	+28	5.0	60

NOTES: 1. Three external capacitors (input, output coupling and RF bypass) are required to establish low frequency roll-off. An external bias resistor, with a value determined by the available bias voltage ($R_b = [V_{cc} - V_D] / I_b$, where R_b is the value of the bias resistor (Ohms), V_{cc} is the available source voltage, V_D is the required device bias voltage (per specification) and I_b is the device current (per specification), is also required.

2. Military temperature conditions: -55° to +85°C



GPD SERIES LOW COST AMPLIFIERS, TO-12 PACKAGE

Guaranteed Specifications at 0° to 50°C Case Temperature

Model	Frequency Response (MHz) Minimum	Gain (dB) Minimum	Gain ² (dB) Minimum	Noise Figure (dB) Typical	Power Output for 1 dB Gain Compression (dBm) Typical	Gain Flatness (±dB) Typical	3rd-Order Intercept Point (dBm) Typical	Input Power (±1% Reg.) Voltage (VDC)	Current (mA) Typical	Page Number
GPD-201	5-200	30	26	3.0	+5	1.0	+13	+15	30	3-236
GPD-202	5-200	25	23	5.5	+11	1.0	+18	+15	60	3-237
GPM-552	5-500	33	32	4.5	0	0.2	+14	+15	34	3-246
GPM-1052	5-1000	20	20	7.0	+8	0.3	+20	+15	60	3-250
GPD-251	5-200	25	23	4.0	+1	1.0	+10	+5	30	3-238
GPD-252	5-200	15	14	4.0	0	1.0	+12	+5	11	3-239
GPD-401/-461 ¹	5-400	13	12	4.0	-2	1.0	+9	+15	10	3-240
GPD-411	5-400	12	11	3.0	-6	1.0	+4	+15	7	3-245
GPD-402/-462 ¹	5-400	13	12	8.0	+8	1.0	+18	+15	24	3-241
GPD-403/-463 ¹	5-400	9	8	7.5	+16	1.0	+25	+24	65	3-242
GPD-404/-464 ¹	5-400	9	8	7.5	+17	1.0	+26	+15	70	3-243
GPD-405	10-400	13	12	5.0	+24	1.0	+36	+15	90	3-244
GPD-1001/-1061 ¹	5-1000	12	11	6.0	0	1.0	+12	+15	15	3-247
GPD-1002/-1062 ¹	5-1000	12	11	7.0	+6	1.0	+16	+15	27	3-248
GPD-1003/-1063 ¹	5-1000	10	9	7.0	+14	1.0	+25	+15	55	3-249

NOTES: 1. The 60 Series is the same as the standard series except that three external capacitors are required to establish low frequency roll-off.
2. Military temperature conditions: -55° to +85°C

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS TABLE

Model	Maximum Ratings					Thermal Characteristics ¹				
	DC Voltage (Volts)	Continuous RF Input Power (dBm)	Operating Case Temperature (°C)	Storage Temperature (°C)	"R" Series Burn-In Temperature (°C)	θ _{JA} (°C/W)	Active Transistor Power Dissipation (mW)	Junction Temperature Above Case Temperature (°C)	MTBF MIL-HDBK-217E, A _{UT} @ 90°C (Hrs)	Weight (Grams)
GPD-201	+17	+13	-55 to +125	-62 to +150	+125	105	33	3	1,678,671	1.5
GPD-202	+17	+13	-55 to +125	-62 to +150	+125	105	117	12	1,621,478	1.5
GPD-251	+12	+13	-55 to +125	-62 to +150	+125	105/105	23/43	2/5	1,678,323	1.5
GPD-252	+12	+13	-55 to +125	-62 to +150	+125	105	20	2	2,000,740	1.5
GPD-401/461	+17	+13	-55 to +125	-62 to +150	+125	90	14	2	2,045,316 (401) 2,388,527 (461)	1.5
GPD-402/-462	+17	+13	-55 to +125	-62 to +150	+125	90	82	7	2,325,901 (402) 2,640,329 (462)	1.5
GPD-403/-463	+25	+13	-55 to +125	-62 to +150	+125	85	275	23	3,058,127 (403) 3,602,215 (463)	1.5
GPD-404/-464	+17	+13	-55 to +115	-62 to +150	+115	85	330	28	2,435,672 (404) 2,512,908 (464)	1.5
GPD-405	+17	+13	-55 to +100	-62 to +150	+100	55	750	41	1,607,022	1.5
GPD-411	+17	+13	-55 to +125	-62 to +150	+125	105 ²	24 ²	4 ²	1,608,303	1.5
GPM-552	+17	+17	-55 to +125	-62 to +150	+125	135/135	85/85	12/12	—	1.5
GPD-1001/-1061	+17	+13	-55 to +125	-62 to +150	+125	105	37	4	1,639,228 (1001) 1,910,397 (1061)	1.5
GPD-1002/-1062	+17	+13	-55 to +125	-62 to +150	+125	105	81.6	9	1,639,228 (1002) 1,882,476 (1062)	1.5
GPD-1003/-1063	+17	+13	-55 to +125	-62 to +150	+125	75	185	14	869,341 (1003) 2,101,101 (1063)	1.5
GPM-1052	+17	+17	-55 to +125	-62 to +150	+125	130/130	125/175	16/23	—	1.5

NOTES: 1. Values refer to 1st and 2nd stage transistors respectively.
2. For further information, see High Reliability section.