



# HIGH VOLTAGE OPERATIONAL AMPLIFIER

## PA41DIE

HTTP://WWW.APEXMICROTECH.COM (800) 546-APEX (800) 546-2739

### ABSOLUTE MAXIMUM RATINGS

SUPPLY VOLTAGE, $+V_S$ to $-V_S$	350V
OUTPUT CURRENT, continuous	60mA
INPUT VOLTAGE, differential	$\pm 16V$
INPUT VOLTAGE, common mode	$\pm V_S$
TEMPERATURE, junction	150°C

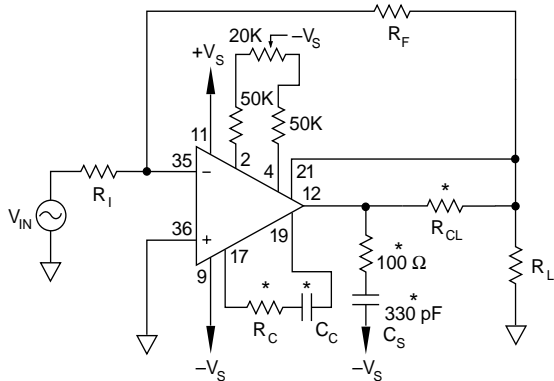
**NOTE:** Refer to parent product data sheet PA41 for typical AC electrical characteristics, precautions, applications and other test parameters.

### DC WAFER PROBED SPECIFICATIONS

PARAMETER	TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
OFFSET VOLTAGE, initial			15	30	mV
OFFSET VOLTAGE, vs. supply	$V_S = \pm 50 V$ to $\pm 175 V$		20	32	$\mu V/V$
OFFSET VOLTAGE, vs. temperature <sup>2</sup>	$T_A = 25-85^\circ C$		50	130	$\mu V/^\circ C$
BIAS CURRENT, initial			10	50	pA
COMMON MODE REJECTION	$V_{CM} = \pm 90 V$ DC	84	94		dB
VOLTAGE SWING	$I_O = 40mA$	$\pm V_S - 12$	$\pm V_S - 9$		V
SUPPLY CURRENT, quiescent		.9	1.4	2.0	mA

**NOTES:** 1. Unless otherwise stated  $V_S = \pm 150 V$ ,  $T_A = 25^\circ C$ , DC input specification  $\pm$  value given.  
 2. Sample tested by wafer to 95%.

### TYPICAL EXTERNAL CONNECTIONS

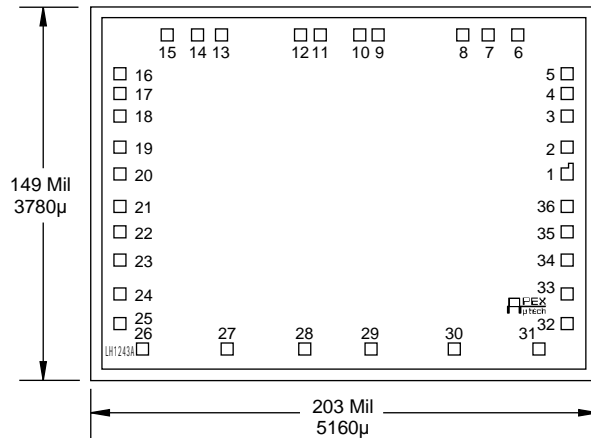


\* Required component and value if given.  
 Optional balance components are recommended values.  
 $C_S$ ,  $C_C$  are NPO, rated for full supply voltage  $-V_S$  to  $+V_S$ .

**NOTE:** Diagram for connection illustration only.  
 All op amp configurations are possible.

Pad	Function	Pad	Function
2	Balance	17	Compensation
4	Balance	19	Compensation
9	- Supply	21	Current Limit
11	+ Supply	35	- Input
12	Output	36	+ Input

### DIE LAYOUT



Thickness: 20 Mil (508 $\mu$ )  
 Backside: Ti (500 $\text{Å}$ ) Au (3000 $\text{Å}$ )  
 Bond pad: 4.9 Mil sq (125 $\mu$ ) Al  
 Bond pads 17 and 10 are connected  
 Make no connection to bond pads not listed by function  
**NOTE:** Backside at  $-V_S$  potential.  
 Make no connection.

**CAUTION** PA41DIE is a MOSFET amplifier. ESD handling procedures must be observed.