

ABSOLUTE MAXIMUM RATINGS

SUPPLY VOLTAGE, +V _S to -V _S	300V
OUTPUT CURRENT, within SOA	Internally Limited
POWER DISSIPATION, internal at T _C = 25°C ¹	17.5W
INPUT VOLTAGE, differential	±300V
INPUT VOLTAGE, common mode	±300V
TEMPERATURE, pin solder - 10s max (solder)	300°C
TEMPERATURE, junction	175°C
TEMPERATURE RANGE, storage	-65 to +150°C
OPERATING TEMPERATURE RANGE, case	-55 to +125°C

SPECIFICATIONS

PARAMETER	TEST CONDITIONS ²	PA83			PA83A			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
INPUT								
OFFSET VOLTAGE, initial	T _C = 25°C		±1.5	±3		±.5	±1	mV
OFFSET VOLTAGE, vs. temperature	Full temperature range		±10	±25		±5	±10	μV/°C
OFFSET VOLTAGE, vs. supply	T _C = 25°C		±.5			±.2		μV/V
OFFSET VOLTAGE, vs. time	T _C = 25°C		±75			*		μV/ kh
BIAS CURRENT, initial ³	T _C = 25°C		5	50		3	10	pA
BIAS CURRENT, vs. supply	T _C = 25°C		.01			*		pA/V
OFFSET CURRENT, initial ³	T _C = 25°C		±2.5	±50		±1.5	±10	pA
OFFSET CURRENT, vs. supply	T _C = 25°C		±.01			*		pA/V
INPUT IMPEDANCE, DC	T _C = 25°C		10 ¹¹			*		
INPUT CAPACITANCE	Full temperature range		6			*		pF
COMMON MODE VOLTAGE RANGE ⁴	Full temperature range	±V _S -10			*			V
COMMON MODE REJECTION, DC	Full temperature range		130			*		dB
GAIN								
OPEN LOOP GAIN at 10Hz	T _C = 25°C, R _L = 2K	96	116		*	*		dB
UNITY GAIN CROSSOVER FREQ.	T _C = 25°C, R _L = 2K		5		3	*		MHz
POWER BANDWIDTH	T _C = 25°C, R _L = 10K		60		40	*		kHz
PHASE MARGIN	Full temperature range		60			*		°
OUTPUT								
VOLTAGE SWING ⁴ , full load	Full temp. range, I _O = 75mA	±V _S -10	±V _S -5		*	*		V
VOLTAGE SWING ⁴	Full temp. range, I _O = 15mA	±V _S -5	±V _S -3		*	*		V
CURRENT, peak	T _C = 25°C	75			*			mA
CURRENT, short circuit	T _C = 25°C		100			*		mA
SLEW RATE ⁶	T _C = 25°C, R _L = 2K	20	30		*	*		V/μs
CAPACITIVE LOAD, unity gain	Full temperature range			10			*	nF
CAPACITIVE LOAD, gain > 4	Full temperature range			SOA			*	μF
SETTLING TIME to .1%	T _C = 25°C, R _L = 2K, 10V step		12			*		μs
POWER SUPPLY								
VOLTAGE	T _C = -55°C to +125°C	±15	±150	±150	*	*	*	V
CURRENT, quiescent	T _C = 25°C		6	8.5		*	*	mA
THERMAL								
RESISTANCE, AC, junction to case ⁵	F > 60Hz		4.26			*		°C/W
RESISTANCE, DC, junction to case	F < 60Hz		6.22	8.57		*	*	°C/W
RESISTANCE, case to air			30			*		°C/W
TEMP. RANGE, case (PA83/PA83A)	Meets full range specification	-25		+85	*		*	°C

- NOTES: * The specification of PA83A is identical to the specification for PA83 in applicable column to the left.
1. Long term operation at the maximum junction temperature will result in reduced product life. Derate internal power dissipation to achieve high MTTF.
 2. The power supply voltage for all tests is the TYP rating, unless otherwise noted as a test condition.
 3. Doubles for every 10°C of temperature increase.
 4. +V_S and -V_S denote the positive and negative supply rail respectively. Total V_S is measured from +V_S to -V_S.
 5. Rating applies if the output current alternates between both output transistors at a rate faster than 60Hz.
 6. Signal slew rates at pins 5 and 6 must be limited to less than 1V/ns to avoid damage. When faster waveforms are unavoidable, resistors in series with those pins, limiting current to 150mA will protect the amplifier from damage.

CAUTION The internal substrate contains beryllia (BeO). Do not break the seal. If accidentally broken, do not crush, machine, or subject to temperatures in excess of 850°C to avoid generating toxic fumes.