



PULSE WIDTH MODULATION AMPLIFIER

PWM130

FEATURES

- WIDE SUPPLY RANGE—16-100V
- 30A CONTINUOUS TO 85°C
- 3 PROTECTION CIRCUITS
- ANALOG OR DIGITAL INPUTS
- SYNCHRONIZED OR EXTERNAL OSCILLATOR
- FLEXIBLE FREQUENCY CONTROL

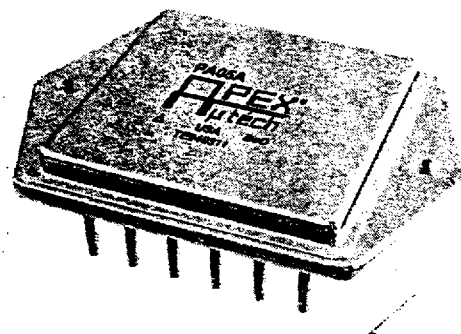
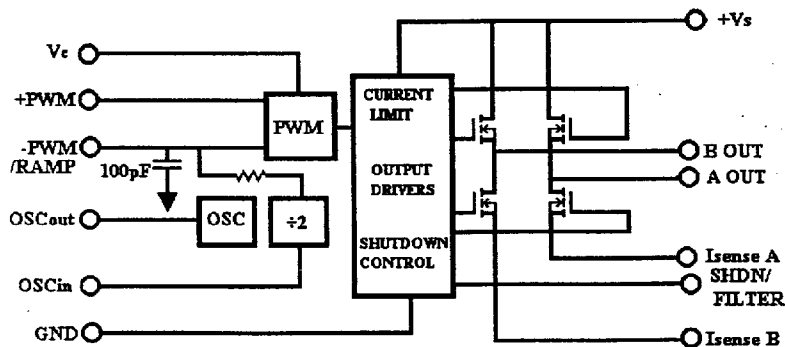
APPLICATIONS

- MOTORS TO 3 HP
- REACTIVE LOADS
- LOW FREQUENCY SONAR
- LARGE PIEZO ELEMENTS
- C-D WELD CONTROLLER

DESCRIPTION

The PWM130 is a pulse width amplifier than can supply 3000W to the load. An internal oscillator provides a 100Khz switching frequency requiring no external components. External oscillators may also be used to lower the switching frequency or to synchronize multiple amplifiers. Current sensing is provided for each half of the bridge giving amplitude and direction data. A shutdown input turns off all four drivers of the H bridge output. A high side current limit and the programmable low side current limit protect the amplifier from shorts to supply or ground in addition to load shorts. The H bridge output MOSFETs are protected from thermal overloads by directly sensing the temperature of the die. The 12-pin hermetic MO-127 power package occupies only 3 square inches of board space. Pin diameter is .060".

BLOCK DIAGRAM



PWM130

ABSOLUTE MAXIMUM RATINGS

SUPPLY VOLTAGE, +Vs	100V
POWER DISSIPATION, internal	300W
TEMPERATURE, pin solder - 10s	300°C
TEMPERATURE, junction ²	175°C
TEMPERATURE, storage	-65 to +150°C
OPERATING RANGE, case	-55 to +125°C

SPECIFICATIONS

PARAMETER	TEST CONDITIONS ³	MIN	TYP	MAX	UNITS
OSCILLATOR					
FREQUENCY		180	200	220	Khz
RAMP, center voltage			5.6		V
RAMP, P-P voltage			5		V
OUTPUT					
TOTAL R _{ON}			.16	.2	Ω
EFFICIENCY, 30A OUTPUT	V _s = 100V		94		%
SWITCHING FREQUENCY	OSCin ÷ 2		100	110	KHz
CURRENT, continuous ⁴		30			A
CURRENT, peak ⁴		45			A
POWER SUPPLY					
VOLTAGE, Vs	Full temperature range	16	80	100	V
VOLTAGE, Vc	Full temperature range	14	15	16	V
CURRENT	I _{OUT} = 0, I _{REF} = 0			150	mA
CURRENT, shutdown	I _{REF} = 0			25	mA
SHUTDOWN					
TRIP POINT		.18		.22	V
INPUT CURRENT				100	nA
THERMAL²					
RESISTANCE, junction to case	Full temperature range, for each die			1	°C/W
RESISTANCE, junction to air	Full temperature range		12		°C/W
TEMPERATURE RANGE, case	Meets full range specifications	-25		+85	°C

- NOTES: 1. Each of the two active output transistors can dissipate 150W.
 2. Unless otherwise noted: T_c = 25°C.
 3. Long term operation at the maximum junction temperature will result in reduced product life. Derate internal power dissipation to achieve high MTTF. For guidance refer to the heatsink data sheet.
 4. Guaranteed but not tested.