OA 452

High Voltage Amplifier Rev 1.0

Shortform Datasheet

Features:

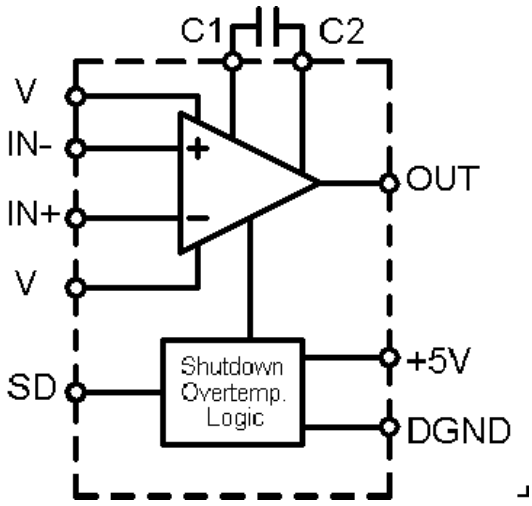
- **High Voltage, High Speed Amplifier**
- **JFET Input**
- **High Gain Bandwith Product: 20MHz**
- **Rugged MOSFET output stage**
- **Shutdown w. high impedance output and reduced current consumption (down to 1mA)**
- **Two shutdown modes possible**
- **Overtemp Protection**
- **Overtemp Alarm Output**
- **Customer tuned**
- **Hermetically sealed and isolated metal packages**

Applications:

Sonar Driver, Piezo Driver, ATE and others

Customer specific details:

- Different hermetically sealed metal packages available
- Quiescent current
- Internal compensation
- Temperature alarm/shutdown
- The amplifiers requires an additional +5V supply for the control of the shutdown feature. This supply voltage can be changed to other values, like 3.3V or 12V.



Documented production to MIL-Standards available on request. For similar products see: QA451,QA453

Absolute Maximum Ratings (Shortform):

Max. Operating Voltage V_P-V_N (TC under 20°C: 0.4V/°C)	240V
Max. Voltage Shutdown-Pin SD to DGND	±20V
Max. Input Common Mode Voltage	$V_N \le V_{in-}, V_{in+} \le V_P$
Max. Input Differential Voltage	8V
Max. DC Ouput Current (in SOA Limits) *WARNING: Amplifier has no built-in current limit!*	8A
Max. Cont. Power Dissipation T_C=25°C, DC Mode	80W
Max. Power Dissipation Sinewave CW-Mode , T_C=25°C, 10kHz<f<100kHz	100W
Max. Pulsed Power Dissipation in Sinewave Burst Mode T_C=25°C, 10kHz<f<250kHz, T_{Burst}<10ms, T_{Burst}/T_{Cycle}≤1/10	150W
Operating Temperature Range	-40°C…125°C

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Technical Data (Shortform):

T_C=25°C, Operating Voltage V_B=±100V if not stated otherwise.

Parameter	Test Conditions	min.	typ.	max.
Power Supply				
Operating Voltage	V_P - V_N	40V	-	240V
Quiescent Current	60-220V	60mA	80mA	100mA
Quiescent Current	Shutdown		500µA	1mA
Quiescent Current, +5V Supply	Normal Mode		200µA	1mA
Quiescent Current, +5V Supply	Shutdown		4.5mA	5.5mA
Input				
Offset	Vout=0V	-5mV		+5mV
Input Current IN-,IN+	Vin=0V, Vout=0V			10nA
Input Current SD - Pin	V_{SD}=0V / 5V			±1µA
Input Current SD - Pin	V_{SD}=0V Overtemp. Alarm		-500µA	
Comm.mode Range	V_B>50V	V_N + 10V		V_P - 5V
Ouput				
Output Current				5A
Output Pulse Current	1ms single pulse			12A
Output Impedance in Shutdown Mode	Vout=0V V_B>±75V		9MΩ||300pF	
AC Operation				
Min. Gain [1)]			5	
GBWP	G=10	18MHz	20MHz	
Slew Rate	Ccomp=20pF		160V/µs	
Permissible Load Capacitance	V_B>±100V Ccomp=30pF G=20	35nF		
Shutdown				
Switch Off Temp.	(factory set)			105°C
T_{ON}	[2)]			8ms
T_{OFF}	[3)]			180µs

[1)] depends on compensation/configuration

[2)] Testcondition: Input signal 1Vpp sinewave. Signal level has to be stabilized after appointed time.

[3)] Testcondition: Zero input signal. 150µs after shutdown a 1Vpp/200kHz/50Ω sinewave source will be connected to the output. The signal at the output must not be distorted.

Shutdown Control:

The shutdown is controlled by a 5V-CMOS-level signal. Overtemperature shutdown overrides normal shutdown. If overtemperature shutdown is active, the SD pin is pulled to +5V by internal 10kΩ. This allows to combine in- and output functionality in one pin.