

Shortform Datasheet

Features:

- High Voltage, High Speed Amplifier
- JFET Input
- High Gain Bandwidth 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

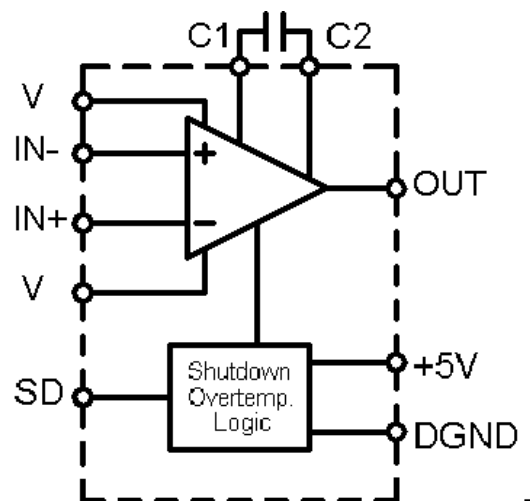
Documented production to MIL-Standards available on request. For similar products see: QA451, QA453

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	$V_N \leq V_{in-}, V_{in+} \leq V_P$
Max. Input Differential Voltage	8V
Max. DC Output Current (in SOA Limits) <i>WARNING: Amplifier has no built-in current limit!</i>	8A
Max. Cont. Power Dissipation $T_C=25^\circ\text{C}$, DC Mode	80W
Max. Power Dissipation Sinewave CW-Mode, $T_C=25^\circ\text{C}$, 10kHz < f < 100kHz	100W
Max. Pulsed Power Dissipation in Sinewave Burst Mode $T_C=25^\circ\text{C}$, 10kHz < f < 250kHz, $T_{Burst} < 10\text{ms}$, $T_{Burst}/T_{Cycle} \leq 1/10$	150W
Operating Temperature Range	-40°C...125°C

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.



Technical Data (Shortform):

$T_C=25^{\circ}\text{C}$, Operating Voltage $V_B=\pm 100\text{V}$ 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		500 μA	1mA
Quiescent Current, +5V Supply	Normal Mode		200 μA	1mA
Quiescent Current, +5V Supply	Shutdown		4.5mA	5.5mA
Input				
Offset	$V_{\text{out}}=0\text{V}$	-5mV		+5mV
Input Current IN-, IN+	$V_{\text{in}}=0\text{V}$, $V_{\text{out}}=0\text{V}$			10nA
Input Current SD - Pin	$V_{\text{SD}}=0\text{V} / 5\text{V}$			$\pm 1\mu\text{A}$
Input Current SD - Pin	$V_{\text{SD}}=0\text{V}$ Overtemp. Alarm		-500 μA	
Comm.mode Range	$V_B > 50\text{V}$	$V_N + 10\text{V}$		$V_P - 5\text{V}$
Output				
Output Current				5A
Output Pulse Current	1ms single pulse			12A
Output Impedance in Shutdown Mode	$V_{\text{out}}=0\text{V}$ $V_B > \pm 75\text{V}$		9M Ω 300pF	
AC Operation				
Min. Gain ¹⁾			5	
GBWP	G=10	18MHz	20MHz	
Slew Rate	Ccomp=20pF		160V/ μs	
Permissible Load Capacitance	$V_B > \pm 100\text{V}$ Ccomp=30pF G=20	35nF		
Shutdown				
Switch Off Temp.	(factory set)			105 $^{\circ}\text{C}$
T_{ON}	²⁾			8ms
T_{OFF}	³⁾			180 μs

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. 150 μs after shutdown a 1Vpp/200kHz/50 Ω 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 10k Ω . This allows to combine in- and output functionality in one pin.