

42106

**OPERATIONAL AMPLIFIER
DSCC DWG #5962-8762001
(Replacement for OP501, PA51)**

Mii

**HYBRID MICROELECTRONICS
PRODUCTS DIVISION**

Features:

- Wide Supply Voltage Range (± 10 to ± 40 Volts)
- High Output Current (10A Peak)
- Small Size (TO-3, 8 Pins)
- Low Cost

Applications:

- Valve and Actuator Control
- DC or AC Power Regulator
- Motor/Synchro Driver
- DC Servo Amplifier

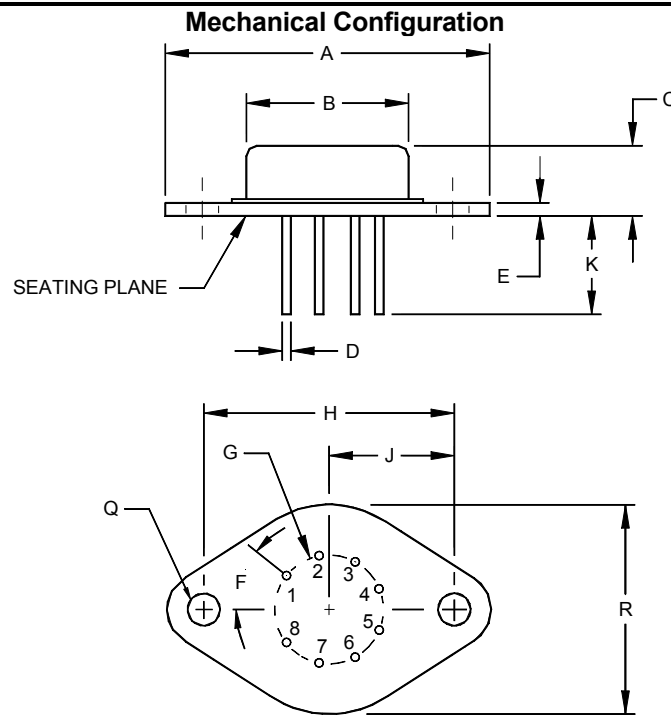
DESCRIPTION

The 42106 is a high power, high voltage, high current, power operational amplifier and is a replacement for the PA51 & OPA501. They are designed to drive capacitive, inductive and sensitive loads. The devices are complete with current limiting using external resistors, and fabricated using hybrid techniques to maximize reliability, minimize size and give top performance.

ABSOLUTE MAXIMUM RATINGS

Power Supply Voltage (V_{CC})	± 40 VDC
Differential Input Voltage	$\pm V_{CC} - 3$ V
Common Mode Input Voltage	$\pm V_{CC}$
Operating Temperature Range (case)	-55°C to $+125^{\circ}\text{C}$
Storage Temperature Range	-65°C to $+150^{\circ}\text{C}$
Output Current	10A Peak
Power Dissipation at $T_C = 25^{\circ}\text{C}$	97W
Lead Temperature (Soldering < 10 sec).....	$+300^{\circ}\text{C}$

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Note: Leads in true position with 0.010" (0.25mm) R at MMC at seating plane
Pin Numbers shown for reference only. Numbers may not be marked on package.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.510	1.550	38.35	39.37
B	.745	.770	18.92	19.56
C	.260	.300	6.60	7.62
D	.038	.042	0.97	1.07
E	.080	.105	2.03	2.67
F	40° BASIC		40° BASIC	
G	.500 BASIC		12.7 BASIC	
H	1.186 BASIC		30.12 BASIC	
J	.583 BASIC		15.08 BASIC	
K	.400	.500	10.16	12.70
Q	.151	.161	3.84	4.09
R	.980	1.020	24.89	25.391

ELECTRICAL CONNECTIONS	
Pin 1	Output 1
Pin 2	CL ⁺
Pin 3	+V _C
Pin 4	+IN
Pin 5	-IN
Pin 6	-V _C
Pin 7	N.C.
Pin 8	CL ⁻

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ELECTRICAL CHARACTERISTICS $T_C = 25^\circ\text{C}$, $V_{CC} = \pm 36\text{ VDC}$

unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	$T_C = 25^\circ\text{C}$ $T_C = -55^\circ\text{C}$ to $+125^\circ\text{C}$			± 5 ± 40	mV $\mu\text{V}/^\circ\text{C}$
Input Offset Voltage vs Supply	$V_{IO}(V_{CC})$			± 35		$\mu\text{V}/\text{V}$
Input Offset Voltage vs Power	$V_{IO}(P)$			± 20		$\mu\text{V}/\text{W}$
Input Bias Current	I_{B+} , I_{B-}	$T_C = 25^\circ\text{C}$ $T_C = -55^\circ\text{C}$ to $+125^\circ\text{C}$.05	20	nA $\text{nA}/^\circ\text{C}$
Input Bias Current vs Supply	$I_B(V_{CC})$.02		nA/V
Input Offset Current	I_{IO}	$T_C = 25^\circ\text{C}$ $T_C = -55^\circ\text{C}$ to $+125^\circ\text{C}$.01	3	nA $\text{nA}/^\circ\text{C}$
Input Impedance	R_{IN}			250		$\text{M}\Omega$
Gain Bandwidth Product @ 1 MHz	G_B			1		MHz
Power Bandwidth	P_B	$T_C = 25^\circ\text{C}$, $I_0 = 40V_{P-P}$, $I_0 = 8.0\text{A}$	10	16		kHz
Phase Margin	I_m	-55°C to $+125^\circ\text{C}$		45		Degree
Common Mode Rejection Ratio	CMRR	$V_{ICM} = \pm 15\text{V}$ $T_C = 25^\circ\text{C}$ $T_C = -55^\circ\text{C}$ to $+125^\circ\text{C}$	80 76			dB dB
Output Voltage	V_0	$V_{IN} = 400\text{ mV}_{P-P}$ square wave $V_{CC} = \pm 22\text{V}$ $R_L = 75\Omega$, $R_{CL} = 0$		± 17		V
Output Voltage Swing	V_0 V_0	$T_C = 25^\circ\text{C}$, $I_0 = 10\text{A}$ $I_0 = 4\text{A}$ -55°C to $+125^\circ\text{C}$	$\pm V_{CC} - 8\text{V}$ $\pm V_{CC} - 6\text{V}$			V V
Open Loop Gain	A_V	$R_L = 250\Omega$, $f = 10\text{HZ}$		94		dB
Slew Rate @ 20% of V_0	SR	$R_L = 100\Omega$, $R_{CL} = 0$ $V_{IN} = 40\text{ V}_{P-P}$ square wave wave $f = 1\text{kHz}$, $V_0 = 40\text{ V}_{P-P}$	1.0			$\text{V}/\mu\text{S}$
Power Supply	V_{CC}	-55°C to $+125^\circ\text{C}$	± 10	± 36	± 40	V
Quiescent Current	I_S	$T_C = 25^\circ\text{C}$		2.6	10	mA

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