Blok Diagram Rangkaian Ac Controller
1. SPSIFIKASI SCR Type CS 15-07

Pada rangkaian dayanya digunakan Piranti SCR type CS 15-07 yang mempunyai spesifikasi sebagai berikut:

- Arus rasa pada keadaan ON (semua arus konduksi), $I_{TRM} = 12 \text{ A}$
- Tegangan pada Off-state repetitif puncak, $V_{ORM/GRM} = 400 \text{ V}$
- Arus surya non repetitif puncak, $I_{TRM} = 100 \text{ A}$
- Tetapan sekring pada rangkaian (t = 8,3 m det), $I_{P(i=41 \text{ A}^2 \text{ det}}$
- Daya gate puncak (lebar pulsa ≤1,0 μdet; $T_C = 80^\circ \text{C}$), $P_{GM} = 5.0 \text{ W}$
- Daya gate rata-rata (t=8,3 μdet; $T_C = 80^\circ \text{C}$), $P_{GAV} = 0.5 \text{ W}$
- Arus gate puncak (lebar pulsa ≥1,0 μdet; $T_C = 80^\circ \text{C}$), $I_{GAM} = 2.0 \text{ A}$
- Jangkauan suhu sambungan operasi, $T_J = -40^\circ \text{C sampai +125^\circ C}$
- Jangkauan suhu penyimpanan, $T_{SA} = -40^\circ \text{C sampai +15^\circ C}$

Berikut ini adalah karakteristik listrik dari thyristor CS 15-07:

a. Karakteristik ON

- Tegangan ON-state puncak ($I_{TRM} = 24 \text{ A}$), $V_{TRM} = 2.2 \text{ V}$
- Arus pemicu gate (dc kontinyu; $V_D = 12 \text{ V}$; $R_L = 100 \Omega$), $I_{GT} = 2 \text{ sampai 20 mA}$
- Tegangan pemicu gate (dc kontinyu; $V_D = 12 \text{ V}$; $R_L = 100 \Omega$), $V_{GT} = 0.5 \text{ sampai 1 V}$
- Arus holding (tegangan anod = 12 V) $I_t = 4 \text{ sampai 40 mA}$. 

b. Karakteristik OFF

- Arus pemaham maju puncak ($T_1 = 25^\circ C$), $I_{ORM} = 0,01$ mA
- Arus pemaham belakang puncak ($T_2 = 25^\circ C$), $I_{ORM} = 2$ mA
Preliminary

TL082CP Wide Bandwidth Dual JFET Input Operational Amplifier

General Description
These devices are low cost, high speed, dual JFET input operational amplifiers with an inherently low input offset voltage. The TL082CP is designed for use in applications requiring fast start-up transient response and high input voltage common mode. It is a high gain, low drift, high performance amplifier developed for applications requiring maximum performance and reliability. The TL082CP also provides very low input bias and offset current. The TL082CP is specified over the entire military temperature range. This device may be used in applications such as high speed video amplifiers, test EDA circuits, sample and hold circuits, and other circuits requiring low input offset voltage, low input bias current, high input impedance, low drift, low noise and wide bandwidth. The device also exhibits low motor and other voltage drift.

Features
- Low offset voltage
- Low input bias current
- Low input current
- Low supply current
- High input impedance
- Low input capacitance
- Low input voltage common mode
- Good thermal stability
- Stable over temperature
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Typical Connection

Connection Diagram

Simplified Schematic

Absolute Maximum Ratings
If absolute maximum specified devices are exceeded, damage to the Integrated Circuit may occur. See the IC Package Datasheet for absolute maximum ratings and specifications.

Supply Voltage
- DC Voltage
- AC Voltage
- Range: 5.0V to 30V

Power Dissipation
- Continuous: 0.1W

Operating Temperature Range
- Military: -55°C to 125°C

DC Electrical Characteristics (cont'd)

Symbol
Parameter
Conditions
VOS
Input Offset Voltage
VOS = 10 mV, T = 25°C

ADC
Average DC Input Offset Voltage
ADC = 0.5 mV, T = 25°C

 Industries
Input Offset Current
IIC = 0.1 mA, T = 25°C

AV,
Gain

GAIN = 400, f = 100 kHz, T = 25°C

Gain

RMIN (Gain Bandwidth Product)
RMIN = 100 kΩ

DC Supply Voltage Range
VCC = 5V, T = 25°C

AC Supply Voltage Range
VCC = 5V, T = 25°C

AC Electrical Characteristics

Symbol
Parameter
Conditions
VOS
Input Offset Voltage
VOS = 10 mV, T = 25°C

DIP
Pin Voltage Range
VCC = 5V, T = 25°C

ESR
Exponential Input Noise Current
IIN = 500 nA, T = 25°C

Note: All specifications are for T = 25°C and VCC = 5V. All input currents are referred to the inverting input. All of the input parameters are for a supply current of 100 μA. To test the integrated circuit in parallel, the input signal current should be less than 100 μA. The input offset voltage parameter is defined as the difference between the input offset voltage and the output voltage when the differential input voltage is zero.
Typical Applications (Continued)

Fourth Order High Pass Buffer with Filter

- Corner Frequency $f_c = \frac{1}{2\pi \sqrt{LC}}$
- Resistance $R = \frac{1}{2\pi f_c C}$
- Inductance $L = \frac{1}{f_c^2 R}$
- Loop gain $A = e^{2\pi f_c C R}$
- Second stage $G_2 = \frac{1}{2}$
- Circuit shown above is a basic 3rd order passive filter with a corner frequency of 1 GHz and a passband gain of 10

Check for Valsa Connector

$C_{eq} = \frac{C_1 + C_2}{2}$

Where $P_{in}$ is the input power and $P_{out}$ is the output power.