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**SPINA**(10) **Pub. No.: US 2022/0416740 A1**(43) **Pub. Date: Dec. 29, 2022**(54) **CURRENT SENSING CIRCUIT USING  
TEMPERATURE SELF-COMPENSATED  
TRANS-RESISTANCE AMPLIFIER****Publication Classification**(51) **Int. Cl.**  
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Brianza (MB) (IT)(21) Appl. No.: **17/361,830**(22) Filed: **Jun. 29, 2021**(57) **ABSTRACT**

A current sensor architecture is implemented using a trans-resistance amplifier circuit having a low pass filter characteristic. The current sensing resistor and the input resistors for the amplifier circuit are matched thermally so that they have substantially identical temperature coefficients. The feedback resistors, which are coupled in parallel with corresponding capacitors, are implemented using switched capacitor circuits that emulate resistors. With this configuration, the current sensor is temperature insensitive.

