AdaptivEnergy

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DATA SHEET

Energy Harvesting

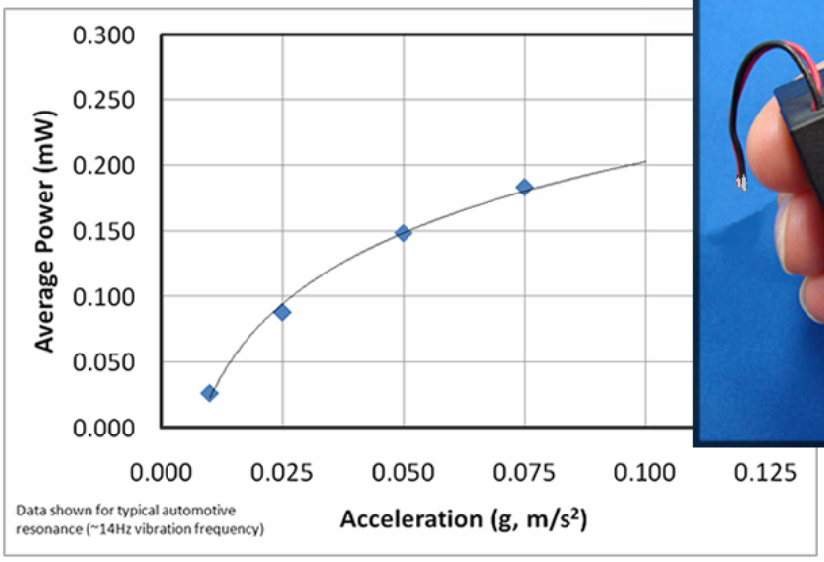
Random Vibration Joule-Thief™
DC Power Supply

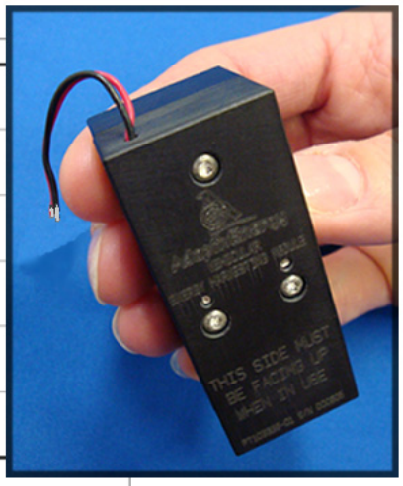
AdaptivEnergy's Joule-Thief™ energy harvesting power supplies convert ambient mechanical energy, such as vibration and impact events, into a standard DC voltage output. The JTRA-e5mini Random Vibration Joule-Thief™ module is an ideal solution for self-sustaining low power microelectronics such as wireless sensing and active RFID.

Joule-Thief™'s stress-engineered Smart Energy Beam™ produces more power per unit volume than any other piezo-based energy harvesting technology available. AdaptivEnergy's highly efficient Energy Key™ electronics are integrated into the Random Vibration module, resulting in a very compact energy harvester with a 2-wire interface to your application.

The fundamental RLP® (Ruggedized Laminated Piezo) technology has been tested to billions of cycles at elevated stresses without failure, making Joule-Thief™ an extremely reliable, "forever" DC power supply.

JTRA-e5mini Power Output
Sample Transportation Environments





The data above is provided as a guideline; specific environments may produce slightly different results. Fixed frequency signals are sinusoidal unless otherwise specified.

If you are unsure of your vibration environment, contact AdaptivEnergy to determine the right Joule-Thief™ energy harvester for your application.

The first product of its kind designed specifically for Random Vibration Environments!!

Specifications

- *RLP® Smart Energy Beam™ configured for energy collection from low amplitude random vibration environments*
- *Onboard 66μF capacitive storage (alternative energy storage options available)*
- *Efficient Energy Key™ collection electronics*
- *Standard 3.6V DC voltage output (custom output voltages available)*
- *Easily mount with adhesive tape or screws*
- *Operating temperature range: -40° to + 80° C*

Joule-Thief™ Random Vibration Demonstration Kit also available for evaluation within your random vibration environment. This kit includes the JTRA-e5mini DC power supply along with power profiling software, integrated TI-MSP430 microcontroller, wireless sensors, and TI-Chipcon 2.4GHz transceivers).