Fairchild's next generation TinyBuck DC-DC regulator family provides higher system efficiency, to help system designers meet tough energy standards and improve battery life while reducing total cost of ownership.

The TinyBuck regulator family enables end-user applications to achieve greater than ninety-six percent efficiency over a very wide load range. This is achieved through multiple optimizations:

- Fine-tuned gate driver circuitry with optimized gate drive current and dead times for each specific part number, giving two percent higher efficiency, when compared to competitive solutions
- Constant on-time architecture with pulse frequency modulation (PFM) for highest light load efficiency

Additional optimizations help improve thermal performance and system robustness:

- Reduced switch node ringing and optimized wide duty cycle achieved by leveraging our PowerTrench® MOSFETs with shielded gate technology
- Advanced packaging technology to minimize parasitic inductance and resistance to achieve superior thermal performance
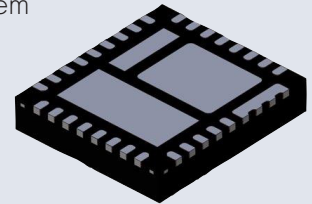
Features

- 4 A, 6 A, 10 A and 15 A devices
- Single, small footprint (5 mm x 5.5 mm PQFN-34L) compatibility for all devices
- Minimizes external component count for reduced bill of materials (BOM) cost and improved system reliability

V_{IN} = 4.5 V – 15 V

FAN2306/06M/10/15:
- External 5 V bias required
- V_{IN} range of 4.5 V – 15 V

FAN23SV06/06P/SV10M/SV15M:
- Integrated linear regulator for single voltage (+5 V and +12 V typ) operation
- V_{IN} range of 4.5 V – 5.5 V and 7 V – 15 V

FAN23SV04T:
- Integrated linear regulator for single voltage (+12 V) operation
- V_{IN} range of 7 V – 15 V
- Tracking operation for DDR Termination (V_{TT})

V_{IN} = 4.5 V – 24 V

FAN2356/60/65:
- External 5 V bias required
- V_{IN} range of 4.5 V – 24 V

FAN23SV56/SV60/SV65:
- Integrated linear regulator for single voltage (+5 V, +12 V and +19 V typ) operation
- V_{IN} range of 4.5 V – 5.5 V and 7 V – 24 V

- Constant on-time controller with PFM mode
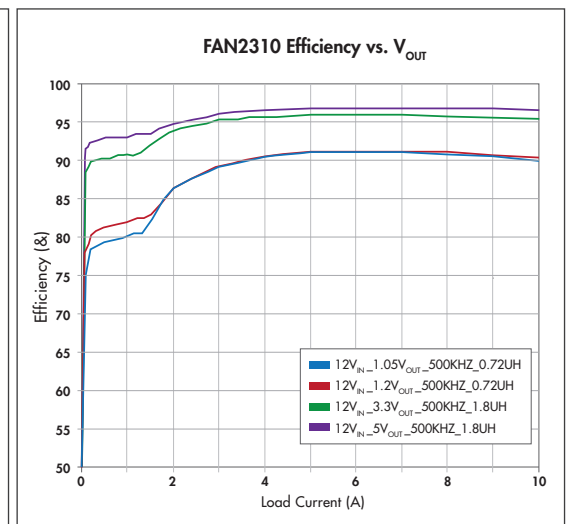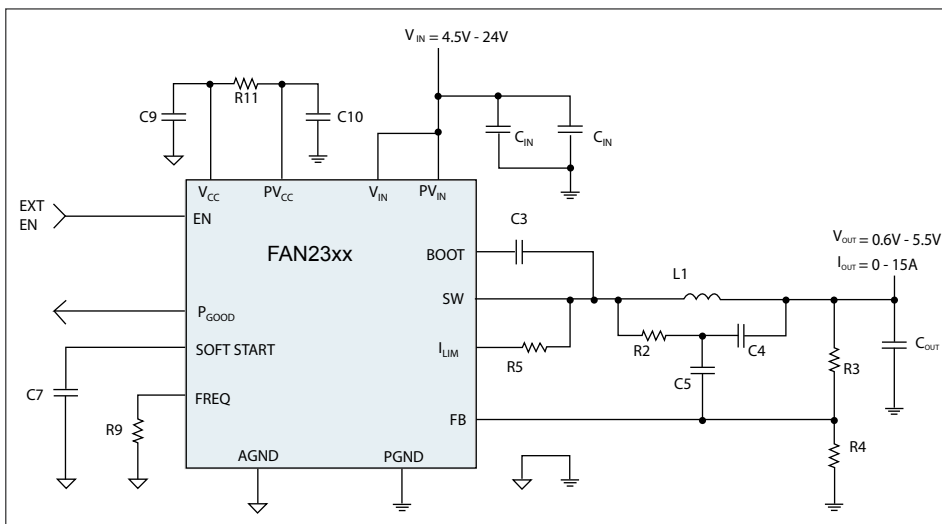- Compatible with all output capacitor types (MLCC, POSCAP, etc.)

Applications

- Notebooks
- Servers and desktop computers
- Game consoles
- Telecommunications
- Storage
- Base stations

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For data sheets, application notes, samples and more, please visit: **http://www.fairchildsemi.com/product-technology/tinybuck/**

Next Generation TinyBuck Product Portfolio

Part Number	Load Current Rating (A)	V_{IN} Rating (V)	Additional V_{IN} Rating with V_{IN} / $_{PVIN}$ / $_{PVCC}$ Connected to Bypass Internal Reg (V)	5V Bias Required	PFM	Ultrasonic Mode	Tracking
FAN23SV04T	4	7–15	4.5–5.5	No	No	Yes	Yes
FAN2306	6	4.5–15	–	Yes	Yes	Yes	No
FAN2306M	6	4.5–15	–	Yes	Yes	No	No
FAN23SV06	6	7–15	4.5–5.5	No	Yes	Yes	No
FAN23SV06P	6	7–15	4.5–5.5	No	No	Yes	No
FAN2310	10	4.5–15	–	Yes	Yes	Yes	No
FAN23SV10M	10	7–15	4.5–5.5	No	Yes	No	No
FAN2315	15	4.5–15	–	Yes	Yes	Yes	No
FAN23SV15M	15	7–15	4.5–5.5	No	Yes	No	No
FAN2356	6	4.5–24	–	Yes	Yes	Yes	No
FAN23SV56	6	7–24	4.5–5.5	No	Yes	Yes	No
FAN2360	10	4.5–24	–	Yes	Yes	Yes	No
FAN23SV60	10	7–24	4.5–5.5	No	Yes	Yes	No
FAN2365	15	4.5–24	–	Yes	Yes	Yes	No
FAN23SV65	15	7–24	4.5–5.5	No	Yes	Yes	No

Typical application with V_{IN} = 12 V and 19 V

FAN2310 Efficiency vs. V_{OUT}

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