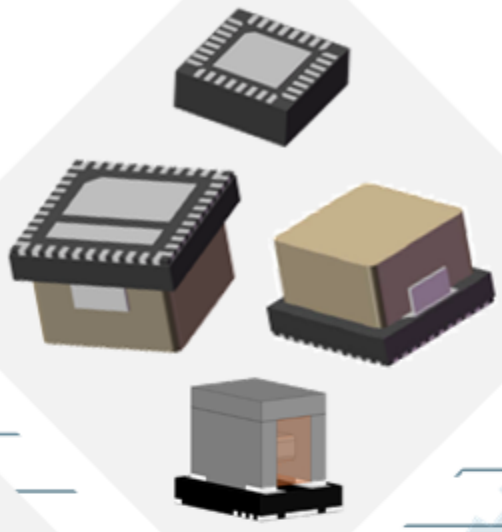
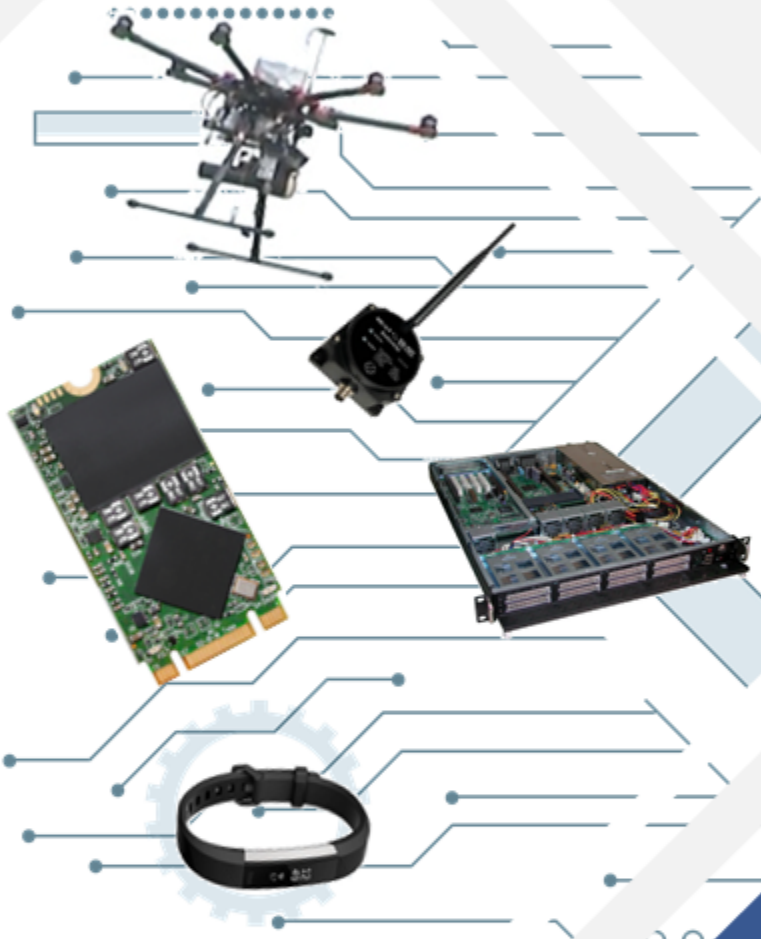
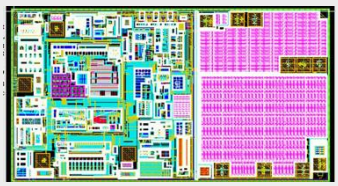
SILERGY®





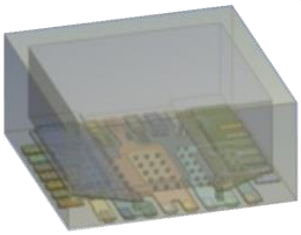
Power Module

SILERGY – *POWERING THE FUTURE*



IC Design

- ✓ Advanced Single Die solution
- ✓ High efficiency topology
- ✓ High Frequency & low loss switch



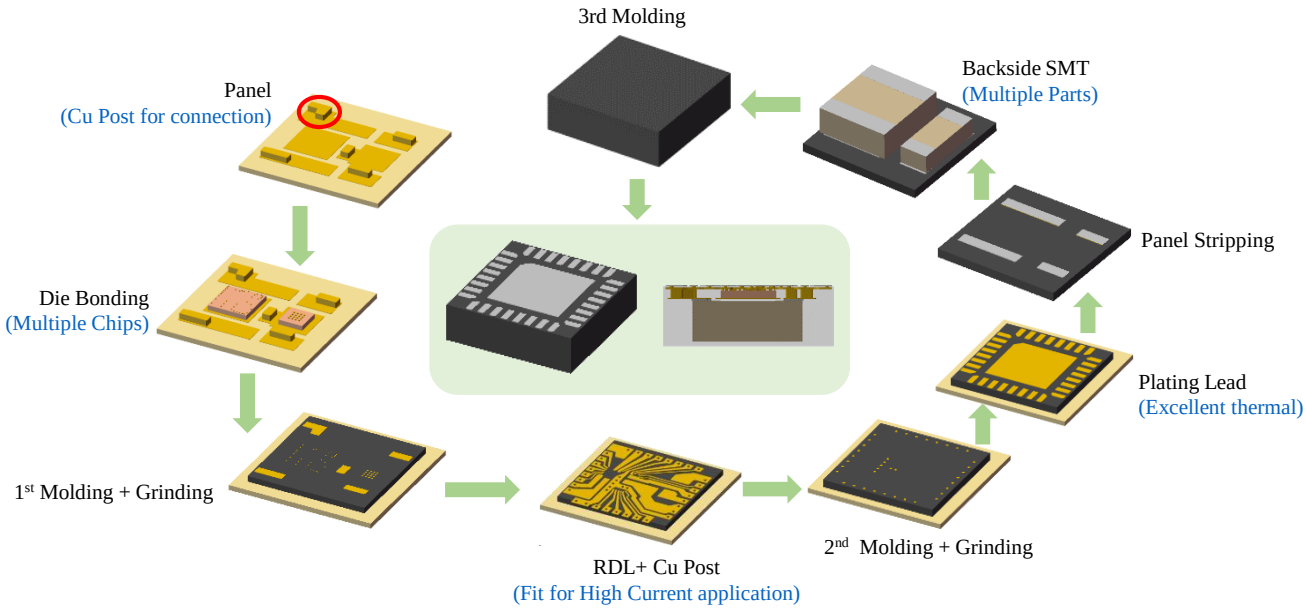
3D Package

- ✓ Patent 3D package tech
- ✓ Low Parasitic Parameter
- ✓ Excellent thermal design

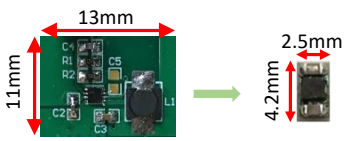
Mag. & EMI

- ✓ Customized Mag. Design
- ✓ New Material & process
- ✓ Low core & AC copper loss

3D Fan-out Package Process



Power Module Advantage



Space Saving

- ✓ Compared to Discrete, Up to 90% Size Reduction

High Performance

- ✓ Reduced Parasitic L/C Improving Efficiency and Minimize Signal Distortions
- ✓ Excellent Thermal & EMI Performance with 3D Package
- ✓ Good Anti-vibration and Environmental Ability

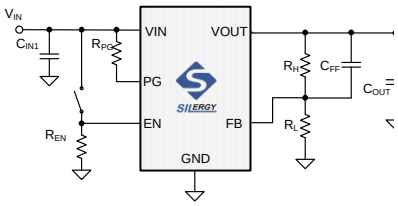
Low Total Cost

- ✓ PCB Cost Saving & SMD Process Time Saving
- ✓ Shorter Time to Market (Easy Layout, Fast Testing, Debug).
- ✓ Simpler Sourcing Management (Lower MOQ, Low CE & System job)

SQ76003D -- 6V input, 3A Module

Features:

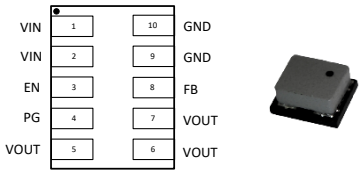
- ✓ 2.5~6V input voltage range
- ✓ Adjustable output voltage
- ✓ Maximum current Capability: 3A
- ✓ 2.4MHZ switching Frequency
- ✓ Power good indicator
- ✓ Package:MQFN2.5x2-10, Height: 1.3mm max
- ✓ Recommended Junction Temperature : -40 ℃ ~125 ℃



Typical Schematic

Competition:

P/N	Max I_{OUT}(A)	Package (mm)	Efficiency @ I_{OUT}=3.0A V_{IN}=3.3V,V_{OUT}=1.8V
SQ76003A	3.0A	3.0x3.0x1.1	86%
SQ76003D	3.0A	2.5x2x1.3	88.8%

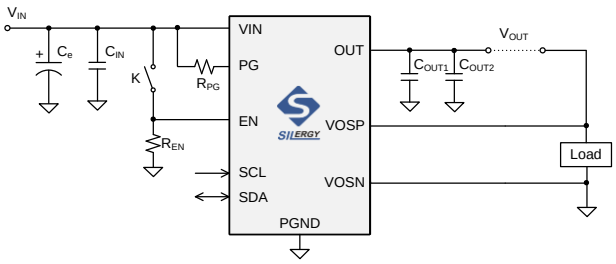


Package:MQFN2.5x2-10, Height: 1.3mm max

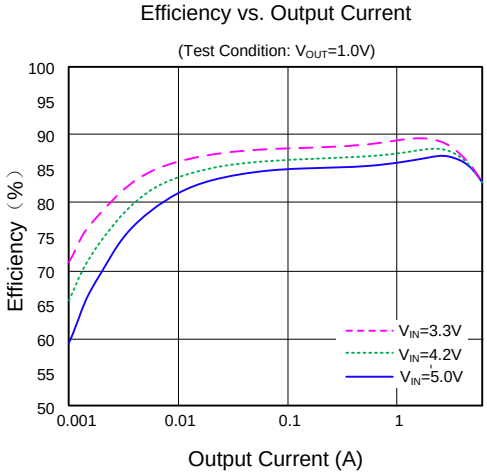
SQ76825D -- 5V input, 6A Module

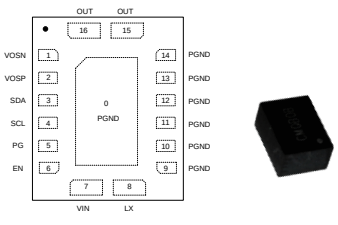
Features:

- ✓ 2.7V to 5.5V input voltage range
- ✓ 6A continuous output current capability
- ✓ Programmable Output Voltage: 0.6V to 1.5V in 10mV steps
- ✓ Output Default Adjustable
- ✓ OCP/SCP/OVP/UVLO/OTP protections
- ✓ Power Good Indicator
- ✓ Tiny QFN3x4-16 package (H: 2.1mm max)
- ✓ Recommended Junction Temperature : -40 ℃ ~125 ℃



Typical Schematic





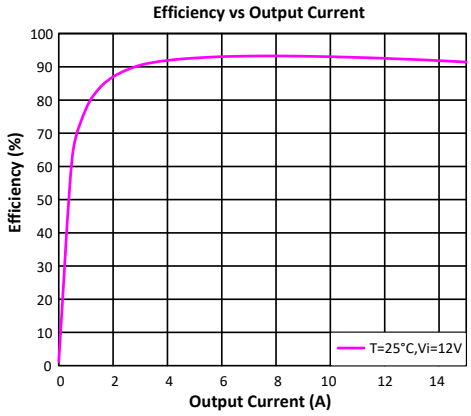
Package:MQFN3x4-16, Height: 2.1mm max

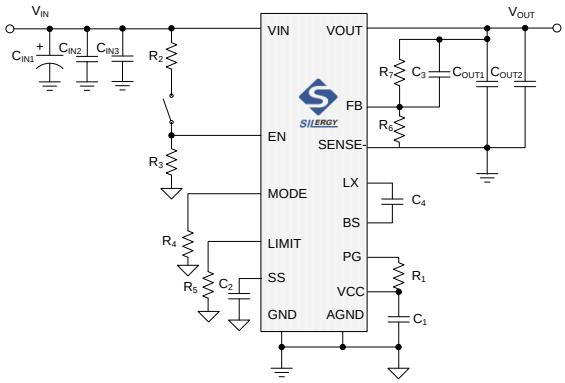
SQ76115 – 12V input, 15A Module

Features:

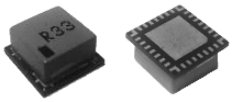
- ✓ 4.5~16V wide input voltage Range
- ✓ 15A continuous output current capability
- ✓ 600k/800k/1MHZ switching frequency selection
- ✓ High Reference Voltage Accuracy Over -40°C to 125°C
- ✓ Instant PWM architecture to achieve fast transient response
- ✓ Power good indicator
- ✓ OCP/UVP/UVLO/OTP
- ✓ Tiny MQFN5x5 package (H: 2.85mm max)

Efficiency@3.3V Output:





Typical Schematic



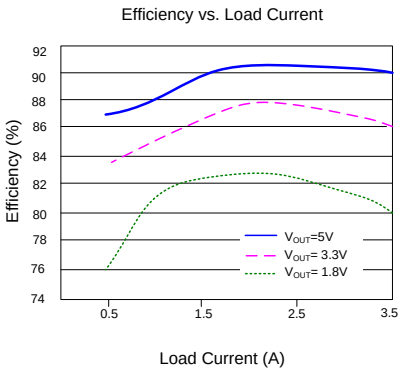
Package:MQFN5x5, Height: 2.85mm max

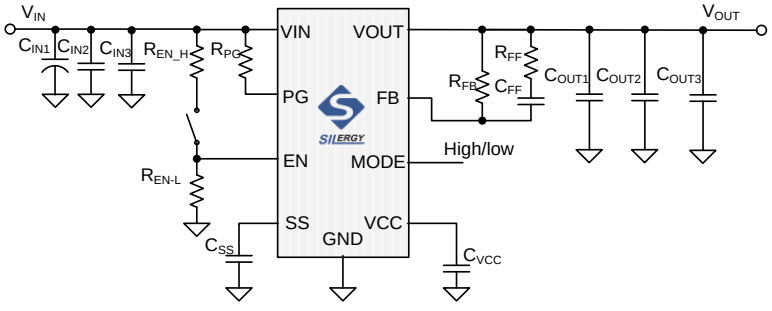
SQ76403 – 36V input, 3.5A Module

Features:

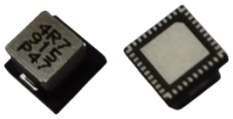
- ✓ 4~36V wide input voltage Range
- ✓ 3.5A continuous output current capability
- ✓ 500KHZ switching Frequency
- ✓ Fast Transient Response
- ✓ MODE/SST Function Selectable =
- ✓ Power good indicator
- ✓ SCP/OCP/UVLO/OTP
- ✓ Tiny QFN6x6 package (Height : 4.5mm max)
- ✓ Recommended Junction Temperature : -40 ℃ ~125 ℃

Efficiency@24V input:





Typical Schematic

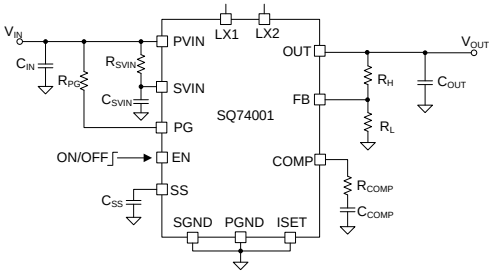


Package:QFN6x6, Height: 4.5mm max

SQ74001 – 3.3V input, 1.5A Buck-Boost Module

Features:

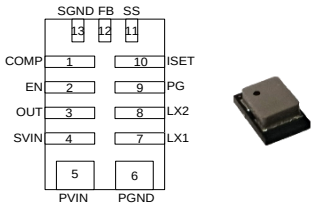
- ✓ 2.6V to 5.5V input voltage range (3.3V typical value)
- ✓ Output voltage: 3.3V
- ✓ Max output current: 1.5A
- ✓ Efficiency: 93% @3.3Vin 3.3V/0.7A output
- ✓ 1MHz working Frequency
- ✓ PFM/FCCM selectable
- ✓ Power good indicator
- ✓ OCP , SCP & OTP
- ✓ Compact package: QFN3x2x1.2mm
- ✓ Recommended Junction Temperature : -40 ℃ ~125 ℃



Typical Schematic

Efficiency:

Vin(V)	V_{OUT}(V)	I_{OUT}(A)	Eff	P_{LOSS}(W)
3.3	3.3	0.2	95.52%	0.0309
3.3	3.3	0.5	94.60%	0.0938
3.3	3.3	0.7	93.39%	0.1625
3.3	3.3	1	91.19%	0.3158
3.3	3.3	1.5	86.40%	0.7676

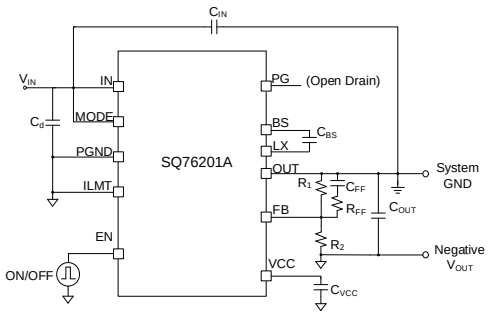


Package:QFN3×2, Height: 1.2mm max

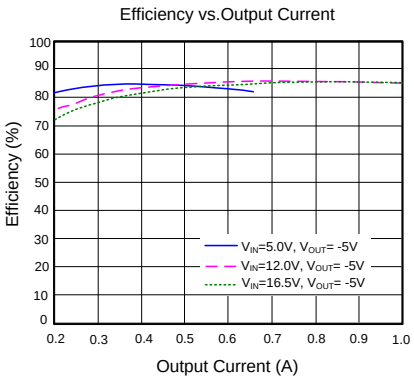
SQ76201A – 16.5V input, 1A Reverse Output Buck-Boost Module

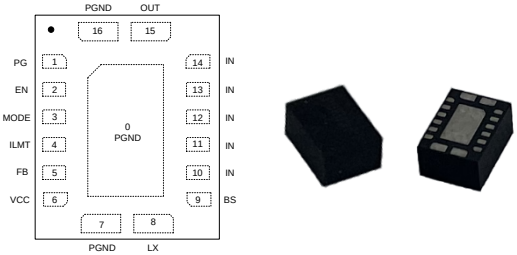
Features:

- ✓ 5V to 16.5V Input Voltage Range
- ✓ Max output current: 1A
- ✓ Efficiency: 85% @12V_{IN}, -5V_{OUT}
- ✓ Instant PWM architecture to achieve fast transient responses
- ✓ Power good indicator
- ✓ OCP, SCP & OTP
- ✓ Input UVLO
- ✓ Compact package: QFN4x3x2mm
- ✓ Recommended Junction Temperature : -40 ℃ ~125 ℃



Typical Schematic



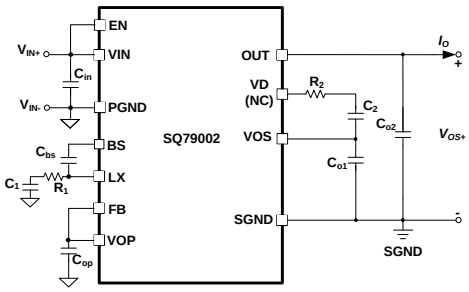


Package:QFN3×4, Height: 2.1mm max

SQ79002 – 5-14V input,1W Isolation Module

Features:

- ✓ 5~14V wide input, 5V/1W output
- ✓ 3000Vdc Isolation
- ✓ Input UVLO /OTP/OCP/SCP
- ✓ 1% typical Load regulation
- ✓ Tiny QFN4*5.5-14 package (H: 4.55mm max)
- ✓ Working Temperature: -40 ℃ ~105 ℃



Typical Schematic

QFN4x5.5-14, H: 4.55mm max

5V BUS Buck

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ76081QUC	2.5	5.5	0.6	3	Adjustable	±2%	80% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN2×1.5-8	1	MP
SQ76081AQUC	2.5	5.5	0.6	3	1.2	±2%	-	PFM	QFN2×1.5-8	1	MP
SQ76081BQUC	2.5	5.5	0.6	3	1.5	±2%	-	PFM	QFN2×1.5-8	1	MP
SQ76081CQUC	2.5	5.5	0.6	3	1.8	±2%	-	PFM	QFN2×1.5-8	1	MP
SQ76081DQUC	2.5	5.5	0.6	3	2.5	±2%	-	PFM	QFN2×1.5-8	1	MP
SQ76081EQUC	2.5	5.5	0.6	3	3.3	±2%	-	PFM	QFN2×1.5-8	1	MP
SQ76083QUC	1.8	5.5	0.6	3	Adjustable	±2%	83% @ 3.3V_{IN}, 1.8V_{OUT}	PFM, Low Iq	QFN2×1.5-8	1	MP
SQ76001RCC	2.5	5.5	1.2	3	Adjustable	±2%	79% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN2.5×2-8	1.15	MP
SQ76002AQNC	2.7	5.5	2	3	Adjustable	±1.5%	88.7% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN3×3-10	1.1	MP
SQ76003AQNC	2.7	5.5	3	3	Adjustable	±1.5%	86% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN3×3-10	1.1	MP
SQ76003B1WLQ	2.5	6	4	2.4	Adjustable	±1%	86% @ 3.3V_{IN}, 1.8V_{OUT}	FCCM	QFN2.5×2.5-10	1.3	Sample available
SQ76003C1WLQ	2.5	6	4	2.4	Adjustable	±1%	86% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN2.5×2.5-10	1.3	Sample available
SQ76003DAFM	2.5	6	3	2.4	Adjustable	±1%	89% @ 3.3V_{IN}, 1.8V_{OUT}	FCCM	MDFN2.5×2-10	1.3	MP
SQ76003EAFM	2.5	6	3	2.4	Adjustable	±1%	89% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	MDFN2.5×2-10	1.3	Sample available
SQ76004QNC	2.7	5.5	4	3	Adjustable	±1.5%	85% @ 3.3V_{IN}, 1.8V_{OUT}	PFM	QFN3×3-10	2.1	MP
SQ76825BQLQ	2.7	5.5	6	1.5	Adjustable, Default：1V	±1%	83% @ 3.3V_{IN}, 1V_{OUT}	I^2C	QFN3×4-16	2.1	MP
SQ76825B2QLQ	2.7	5.5	6	1.5	Adjustable, Default：0.85V	±1%	83% @ 3.3V_{IN}, 1V_{OUT}	I^2C	QFN3×4-16	2.1	MP
SQ76825CQLQ	2.7	5.5	6	1.5	Adjustable, Default：1.5V	±1%	83% @ 3.3V_{IN}, 1V_{OUT}	I^2C	QFN3×4-16	2.1	MP
SQ76825DABM	2.7	5.5	6	1.5	Adjustable, Default：0V	±1%	83% @ 3.3V_{IN}, 1V_{OUT}	I^2C	MQFN3×4-16	2.1	MP

12V BUS Buck

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ76101THC	4.5	18	1	2	Adjustable	±2%	85% @ $12V_{IN}$, $3.3V_{OUT}$	PFM	QFN2.5×2.5-8	2.1	MP
SQ76102ATRC	4.5	18	2	1	Adjustable	±1%	92% @ $12V_{IN}$, $5V_{OUT}$	FCCM	QFN3×3-7	2.1	MP
SQ76103ATRC	4.5	18	3	1	Adjustable	±1%	91% @ $12V_{IN}$, $5V_{OUT}$	FCCM	QFN3×3-7	2.1	MP
SQ76103CADM	4.7	18	3	2	Adjustable	±1%	85% @ $12V_{IN}$, $3.3V_{OUT}$	FCCM	QFN3×2.8-8	2	Sample available
SQ76103B1WGQ	4.7	18	3	1	Adjustable	±1%	89% @ $12V_{IN}$, $3.3V_{OUT}$	FCCM	QFN2.5×3-16	1.7	Sample available
SQ76106QHQ	4.5	16	10	Adj	Adjustable	±1%	90% @ $12V_{IN}$, $3.3V_{OUT}$		QFN6×6-40	4.5	Sample available
SQ76110VVQ	4.5	16	15	Adj	Adjustable	±1%	92% @ $12V_{IN}$, $3.3V_{OUT}$		QFN7×8-52	4.5	MP
SQ76195RLQ	4.5	15	5	1.5	Adjustable	±1%	86.5% @ $12V_{IN}$, $3.3V_{OUT}$	PFM, I^2C/FB	QFN5×5-20	2.1	MP
SQ76202QNC	4.5	23	2	1.7	Adjustable	±1.5%	83% @ $12V_{IN}$, $3.3V_{OUT}$	PFM	QFN3×3-10	2.1	MP
SQ76115AJM	4.5	16	15	Adj	Adjustable	±1%	91.4% @ $12V_{IN}$, $3.3V_{OUT}$		MQFN5×5-32	2.85	preliminary sample available

HV BUS Buck

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ76403QHQ	4	36	3.5	0.5	Adjustable	±1%	90% @ $24V_{IN}$, $5V_{OUT}$		QFN6×6-40	4.5	sample available
SQ76401AWHQ	4.2	36	1	2.1	Adjustable	±1%	82% @ $24V_{IN}$, $5V_{OUT}$	PFM	QFN3×2.5-10	1.75	Sample available
SQ76801AEM	7	90	1	Adj	Adjustable	±2%	86% @ $48V_{IN}$, $12V_{OUT}$	FCCM	MQFN5×5-13	3.7	Sample available

Multi-output Buck

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ72122AHM	4	23	3/rail	0.75-2.5	Adjustable	±1.5%	89.5% @ $12V_{IN}$, $3.3V_{OUT}$, 3+3Aout	Dual rail	MQFN3×5-21	1.75	Sample available

Non-isolated Module

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ74001ACM	2.97	3.63	1.5	1	3.3	±1.5%	83% @ $3.3V_{IN}$, $3.3V_{OUT}$	Buck/Boost	MQFN2×3-13	1.2	MP
SQ75072QNC	0.85	5.5	0.5	2	Adjustable	±1.5%	90% @ $3.3V_{IN}$, $5V_{OUT}$	Boost	QFN3×3-10	1.1	MP
SQ75001QNC	0.85	5.5	1	2	Adjustable	±1.5%	90% @ $3.3V_{IN}$, $5V_{OUT}$	Boost	QFN3×3-10	2.1	MP
SQ76201AQLQ	5	16.5	1	0.6	Adjustable	±1%	85% @ $12V_{IN}$, $-5V_{OUT}$	Reverse output	QFN3×4-16	2.1	MP

Isolated Module

Part Number	V_{IN}(Min) (V)	V_{IN}(Max) (V)	I_{OUT}(Max) (A)	F_{SW} (MHz)	Output Voltage (V)	V_{FB} Accuracy	Efficiency @ full load	Features	Package	Height (Max)(mm)	Sample Status
SQ79004WNQ	18	36	0.2	TBD	5	-	TBD	3kV DC Hipot	QFN4*5.5-14	4.55	TBD
SQ79002WNQ	4.5	14	0.2	1.6	5	-	65% @ $5V_{IN}$, $5V_{OUT}$	3kV DC Hipot	QFN4*5.5-14	4.55	Sample available