

CS51411/4

ABSOLUTE MAXIMUM RATINGS

Pin Name	Maximum Voltage	Maximum Current
V_{IN}	16 V	2.0 A
V_O	16 V	2.0 A
SHDNB	7.0 V	1.0 mA
SYNC	7.0 V	1.0 mA

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, $5.0\text{ V} \leq V_{IN} \leq 16\text{ V}$, $0.1\text{ A} \leq I_{OUT} \leq 1.0\text{ A}$, unless otherwise specified.)

Characteristic	Test Conditions	Typ	Unit
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Output Voltage

Voltage Accuracy	—	4.0	%
Line Regulation	$I_{OUT} = 1.0\text{ A}$	0.1	%
Load Regulation	$V_{IN} = 5.0\text{ V}$	0.3	%
Minimum Load	—	0.1	A
Transient Response	—	3.0	%
Transient Response Time	Load toggle between 0.1 A and 1.0 A	10	μs
Startup Time	—	5.0	ms

Input Voltage

Start Threshold	—	3.3	V
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Sync and Shutdown

Sync Frequency	CS51411 CS51413	290 to 470 575 to 900	kHz kHz
Minimum Sync Threshold Voltage	—	1.0	V
Minimum Shutdown Threshold Voltage	—	0.3	V
Maximum Shutdown Bias Current	—	12	μA

General

Switching Frequency	CS51411 CS51413	260 520	kHz kHz
Efficiency	$I_{LOAD} = 100\text{ mA}$ $I_{LOAD} = 1.0\text{ A}$	77.5 83	% %
Shutdown Current	—	100	μA

TYPICAL PERFORMANCE CHARACTERISTICS

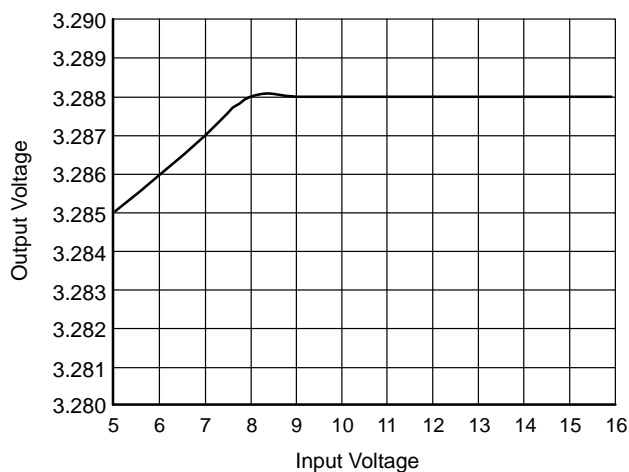


Figure 3. Line Regulation

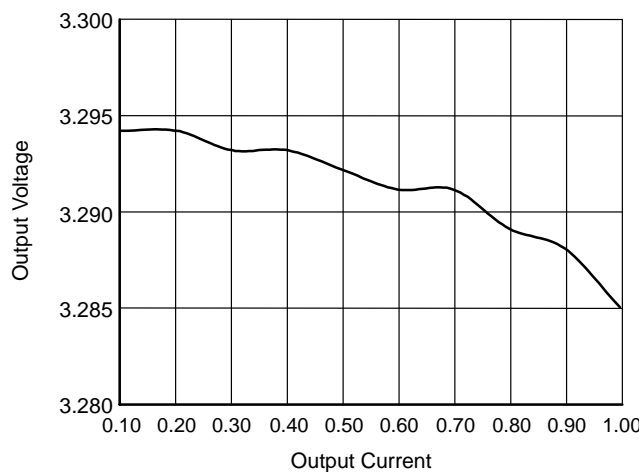


Figure 4. Load Regulation

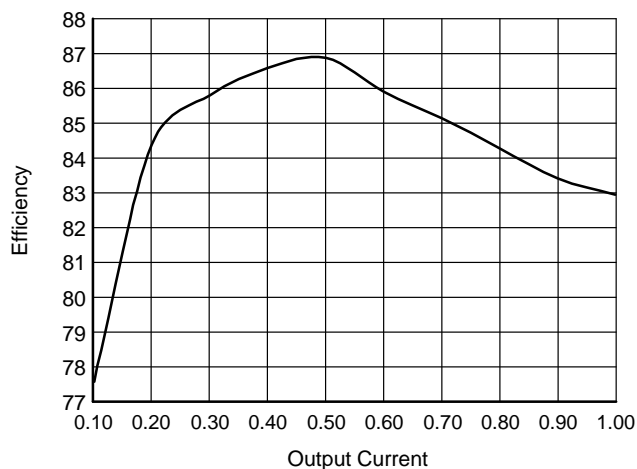


Figure 5. Efficiency vs. Output Current

BILL OF MATERIALS

Ref. Designator	Vendor	Part Number	Type	PC/Board
C1, C4, C5	DIGIKEY	PCC1762CT-ND	0.1 μ F CERAMIC	3
C2, C3	AVX	TAJE107K016R	100 μ F TANTALUM	2
C6	DIGIKEY	PCC1778CT-ND	3300 pF CERAMIC	1
D1	DIGIKEY	LL4148CT-ND	DIODE	1
D3	DIGIKEY	B230DICT-ND	2.0 A SCHOTTKY	1
J1-J8	DIGIKEY	V1055	TEST POINT	8
L1	COILTRONICS	UP2.8B150	15 μ H INDUCTOR	1
R1	DIGIKEY	P205CTRND	205 Ω RESISTOR	1
R2	DIGIKEY	P127CTRND	127 Ω RESISTOR	1
U1	ON SEMICONDUCTOR	CS51411/4	CONTROLLER	1

DRAWINGS OF LAYERS

