

CS5171, CS5172, CS55173, CS5174

Specifications

$T_{\text{ambient}}=25^{\circ}\text{C}$, $V_{\text{in}}=3.3\text{V}$, $60\text{mA}\leq I_{\text{out}}\leq 400\text{mA}$, Unless Otherwise Specified.

Parameter	Test Condition	MIN	TYP	MAX	UNITS
Output Voltage	$I_{\text{OUT}} = 60\text{mA}$ $I_{\text{OUT}} = 400\text{mA}$		4.966 4.963		V V
Frequency	CS5171/2 CS5173/4	235 460	260 560	290 620	kHz
Duty Cycle	$I_{\text{OUT}} = 60\text{mA}$ $I_{\text{OUT}} = 400\text{mA}$		34 48		% %
Efficiency	$I_{\text{OUT}} = 60\text{mA}$ $I_{\text{OUT}} = 400\text{mA}$		82 78		% %
Line Regulation	$3\text{V}<V_{\text{in}}<4\text{V}$		1.5		mV/V
Load Regulation			12.9		mV/A
Shutdown Current	$V_{\text{C}}<0.8\text{V}$, $V_{\text{SS}}=0\text{V}$		12	50	μA
Startup Time	from $V_{\text{CC}}=1\text{V}$ to $I_{\text{OUT}}=400\text{mA}$		5.6		ms
Transient Response Time	from $I_{\text{OUT}} = 200\text{mA}$ to $I_{\text{OUT}} = 400\text{mA}$, V_{O} at steady state		85		μs
Sync Range		280		500	kHz
Sync Pulse Transition Threshold	Rise time =20ns	2.5			V
SS Bias Current	$\text{SS}=0\text{V}$ $\text{SS}=3.3\text{V}$		-3 3	-10 10	μA
Shutdown Threshold		0.6	1.3	2	V
Shutdown Delay	$\text{SS}=5\text{V}$ to 0V , $V_{\text{C}}<0.8\text{V}$		80	300	μs

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Bill of Materials

Ref. Des.	VENDOR	Part Number	Type	PC/Board	Value
C1	DIGIKEY	PCC1750-ND	CERAMIC CAP	1	0.01uF
C2	DIGIKEY	PCC221ACVCT-ND	CERAMIC CAP	1	220pF
C4	DIGIKEY	PCC1762-ND	CERAMIC CAP	1	0.1uF
C5-C7	TDK	C3216X5RJ106M	CERAMIC CAP	3	10uF
J1	DIGIKEY	5002K-ND	TEST POINT	1	N/A
J2-J5	DIGIKEY	V1055	TEST POINT	4	N/A
L1	COILTRONICS	TP4_220	INDUCTOR	1	22uH
R1	DIGIKEY	P4.99KHCT-ND	RESISTOR	1	4.99K
R2	DIGIKEY	P1.6KGCT-ND	RESISTOR	1	1.6K
R3	DIGIKEY	P560GCT-ND	RESISTOR	1	560
D1	DIGIKEY	MA10705CT-ND	SCHOTTKY DIODE	1	N/A
U1	ON SEMICONDUCTOR	CS5171/3	CONTROLLER	1	N/A

DRAWINGS OF LAYERS

