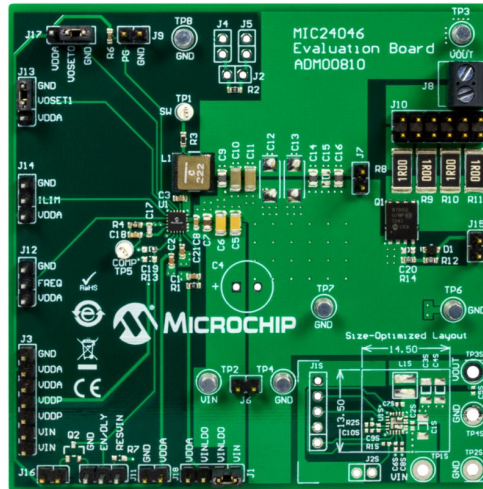


Part Number: ADM00810

MIC24046 19V, 5A SYNCHRONOUS BUCK REGULATOR EVALUATION KIT



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- Input Voltage Range: 4.5V to 19V
 - Output Current: Up to 5A
 - Pin-Selectable Output Voltages: 0.7V, 0.8V, 0.9V, 1.0V, 1.2V, 1.5V, 1.8V, 2.5V, 3.3V
 - Pin-Selectable Current Limit
 - Pin-Selectable Switching Frequency
 - -40°C to +125°C Junction Temperature Range

Overview

The MIC24046 19V, 5A Synchronous Buck Regulator Evaluation Kit is designed to serve the MIC24046 device. For the evaluation of the MIC24046 the VIN supply ranges from 4.5V to 19V and the output voltage is pin programmable from 0.7V to 3.3V at 5A. Additionally, and on-board load transient generator circuit and connections for loop gain measurements are provided.

Bill of Materials

MIC24046 Evaluation Board

Document Number: 02-10621
 Board Number: 04-10621
 Part Number: ADM00810
 Revision: 1
 Engineer: Mihai Tanase
 Drawn By: Mihai Tanase



Creation Date: 5:40:35 PM
 Print Date: 5:01:34 PM

Quantity	Designator	Description_	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1
3	C1, C3, C8	CAP CER 0.1uF 25V 10% X7R SMD 0603	Murata	GRM188R71E104KA01D	Digi-Key	490-1524-1-ND
2	C2, C21	CAP CER 2.2uF 10V 10% X7R SMD 0603	Murata	GRM188R71A225KE15D	Digi-Key	490-4520-1-ND
2	C5, C6	CAP CER 22uF 25V 10% X5R SMD 1206	Murata Electronics North America	GRM31CR61E226KE15L	Digi-Key	490-5527-1-ND
1	C7	CAP CER 10uF 25V 10% X5R SMD 0805	Murata	GRM21BR61E106KA73L	Digi-Key	490-5523-1-ND
3	C9, C14, C16	CAP CER 22uF 10V 20% X7S SMD 0805	TDK Corporation	C2012X7S1A226M125AC	Digi-Key	445-14560-1-ND
2	C10, C11	CAP CER 100uF 6.3V 20% X5R SMD 1206	Murata	GRM31CR60J107ME39L	Digi-Key	490-4539-1-ND
1	C17	CAP CER 47pF 50V 5% NP0 SMD 0603	KEMET	C0603C470J5GACTU	Digi-Key	399-1056-1-ND
1	C18	CAP CER 0.010uF 25V 10% X7R SMD 0603	Yageo	CC0603KRX7R8BB103	Digi-Key	311-1360-1-ND
1	C19	CAP CER 1000pF 50V 20% X7R SMD 0603	TDK Corporation	C1608X7R2A102K080AA	Digi-Key	445-1298-1-ND
1	D1	DIO RECT 1N4148WS 1.25V 150mA 75V SOD-323	Diodes Inc	1N4148WS-7-F	Digi-Key	1N4148WS-FDICT-ND
1	J1	CON HDR-2.54 Male 1x4 Gold 5.84MH TH VERT	Samtec	TSW-104-07-G-S	Samtec	TSW-104-07-G-S
1	J1S	CON HDR-2.54 Male 1x5 Gold 5.84MH TH VERT	FCI	68000-105HLF	Digi-Key	609-3462-ND
7	J2S, J6, J7, J9, J15, J16, J18	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	FCI	77311-118-02LF	Digi-Key	609-4434-ND
1	J3	CON HDR-2.54 Male 1x7 Gold 5.84MH TH VERT	Samtec	TSW-107-07-G-S	Samtec	TSW-107-07-G-S
1	J8	CON TERMINAL 3.5mm 1x2 Female 16-28AWG 6A TH R/A	On Shore Technology Inc	ED555/2DS	Digi-Key	ED1514-ND
1	J10	CON HDR-2.54 Male 2x6 Gold 5.84MH TH VERT	Sullins	PBC06DAAN	Digi-Key	S2011E-06-ND
5	J11, J12, J13, J14, J17	CON HDR-2.54 Male 1x3 Tin 6.75MH TH VERT	Molex Inc	90120-0123	Digi-Key	WM8073-ND
1	L1	INDUCTOR 2.2uH 9.7A 20% SMD L5.28W5.48H3.1	Coilcraft	XAL5030-222MEC	Farnell	2289067
1	Q2	TRANS FET N-CH 2N7002-7-F 60V 170mA 370mW SOT-23-3	Diodes Inc	2N7002-7-F	Digi-Key	2N7002-FDICT-ND
2	R1, R2	RES TKF 0R 1/10W SMD 0603	Panasonic	ERJ-3GSY0R00V	Digi-Key	P0.0GTR-ND
1	R3	RES TKF 49.9R 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF49R9V	Digi-Key	P49.9HCT-ND
1	R4	RES TKF 2.55k 1% 1/10W SMD 0603	Yageo	RC0603FR-072K55L	Digi-Key	311-2.55KHRCT-ND
2	R6, R13	RES TF 10k 1% 1/16W SMD 0603	TE Connectivity	5-1879337-9	Digi-Key	A102203CT-ND
4	R8, R9, R10, R11	RES TKF 1R 1% 2W SMD 2512	Bourns Inc.	CRM2512-FX-1R00ELF	Digi-Key	CRM2512-FX-1R00ELFCT-ND
1	R12	RES TKF 1k 5% 1/10W SMD 0603	Panasonic	ERJ-3GEYJ102V	Digi-Key	P1.0KGCT-ND
1	R14	RES TKF 20k 5% 1/10W SMD 0603	Panasonic	ERJ-3GSYJ203	Digi-Key	P20KGCT-ND
2	TP1, TP5	MISC, TEST POINT MULTI PURPOSE MINI WHITE	Keystone	5002	Digi-Key	36-5002-ND

6	TP2, TP3, TP4, TP6, TP7, TP8	CON TP PIN Tin TH	Harwin	H2121-01	Digi-Key	952-1440-ND
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Microchip Parts listed below

1	Q1	MCHP ANALOG MOSFET N-CH 25V 100A 0.006R MCP87050-U/MF PDFN-8	Microchip Technology	MCP87050T-U/MF	Microchip	MCP87050T-U/MF
1	U1	MCHP ANALOG SWITCHER Buck 0.7V MIC24046YFL-TR VFQFN-20	Microchip Technology	MIC24046YFL-TR	Digi-Key	MIC24046YFL-CT-ND

Mechanical Parts to be added in the package

3	JP1, JP2, JP3	MECH HW JUMPER 2.54mm 1x2	3M	969102-0000-DA	Digi-Key	3M9580-ND
4	PAD1, PAD2, PAD3, PAD4	MECH HW RUBBER PAD CYLINDRICAL D7.9 H5.3 BLACK	3M	SJ61A11	Digi-Key	SJ5747-0-ND

Do Not Populate Parts listed below

1	C1S	CAP CER 22uF 25V 10% X5R SMD 1206	Murata Electronics North America	GRM31CR61E226KE15L	Digi-Key	490-5527-1-ND
3	C2S, C5S, C7S	CAP CER 0.1uF 25V 10% X7R SMD 0402	TDK Corporation	C1005X7R1E104K050BB	Digi-Key	445-7348-1-ND
2	C3S, C4S	CAP CER 100uF 6.3V 20% X5R SMD 1206	Murata	GRM31CR60J107ME39L	Digi-Key	490-4539-1-ND
1	C4	CAP ALU 220uF 16V 20% 0.015R RAD P3.5D8H8	Würth Electronics Inc	870025374003	Digi-Key	732-6315-1-ND
2	C6S, C8S	CAP CER 2.2uF 10V 10% X7S SMD 0402	TDK Corporation	C1005X7S1A225K050BC	Digi-Key	445-9097-1-ND
2	C9S, C10S	CAP CER 0.012uF 16V 10% X7R SMD 0402	Murata Electronics North America	GRM155R71C123KA01D	Digi-Key	490-3255-1-ND
1	C11S	CAP TANT 47uF 20V 10% 700mOhm SMD D	KEMET	T491D476K020AS	Digi-Key	399-1619-2-ND
2	C12, C13	CAP TANT 220uF 6.3V 10% 225mOhm SMD C	AVX	TPSC227K006R0125	Digi-Key	478-1768-2-ND
1	C15	CAP CER 22uF 10V 20% X7S SMD 0805	TDK Corporation	C2012X7S1A226M125AC	Digi-Key	445-14560-1-ND
1	C20	CAP CER 2.2uF 10V 10% X7R SMD 0603	Murata	GRM188R71A225KE15D	Digi-Key	490-4520-1-ND
3	J2, J4, J5	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	FCI	77311-118-02LF	Digi-Key	609-4434-ND
1	L1S	INDUCTOR 2.2uH 5.5A 20% SMD L4W4H2.1	Coilcraft	XAL4020-222MEC	Farnell	2289054
1	R1S	RES TKF 10k 5% 1/16W SMD 0402	Vishay	CRCW040210K0JNED	Digi-Key	541-10KJCT-ND
1	R2S	RES TKF 2.7k 1% 1/10W SMD 0402	Panasonic	ERJ-2RKF2701X	Digi-Key	P2.70KLTR-ND
1	R7	RES TF 10k 1% 1/16W SMD 0603	TE Connectivity	5-1879337-9	Digi-Key	A102203CT-ND
4	TP1S, TP2S, TP3S, TP4S	CON TP PIN Tin TH	Harwin	H2121-01	Digi-Key	952-1440-ND
1	U1S	MCHP ANALOG SWITCHER Buck 0.7V MIC24046YFL-TR VFQFN-20	Microchip Technology	MIC24046YFL-TR	Digi-Key	MIC24046YFL-CT-ND

