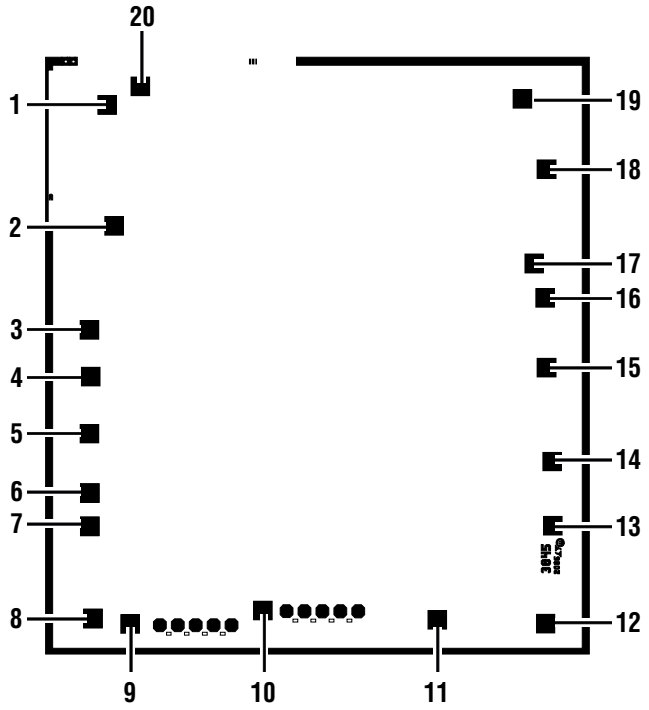
LT3845

High Voltage Synchronous Current Mode Step-Down Controller with Adjustable Operating Frequency



113mils × 124mils

DIE CROSS REFERENCE

Finished Part Number	Order Part Number
LT®3845 LT3845	LT3845 DICE LT3845 DWF*

Please refer to ADI standard product data sheet for other applicable product information.
***DWF = DICE in wafer form.**

PAD FUNCTION

1.	V_{IN}	11.	GND
2.	$\overline{SHDN}$	12.	SENSEN
3.	CSS	13.	SENSEP
4.	BURST_EN	14.	PGND
5.	V_{FB}	15.	BG
6.	VC	16.	VCC
7.	SYNC	17.	SW
8.	FSET	18.	TG
9.	GND	19.	BOOST
10.	GND	20.	GND

DESCRIPTION

The LT3845 is a high voltage, synchronous, current mode controller used for medium to high power, high efficiency supplies. It offers a wide 4V to 60V input range (7.5V minimum start-up voltage). An onboard regulator simplifies the biasing requirements by providing IC power directly from V_{IN}.

Burst Mode® operation maintains high efficiency at light loads by reducing IC quiescent current to 120µA. Light load efficiency is also improved with the reverse inductor current inhibit function which supports discontinuous operation.

Additional features include adjustable fixed operating frequency that can be synchronized to an external clock for noise sensitive applications, gate drivers capable of driving large N-channel MOSFETs, a precision undervoltage lockout, 10µA shutdown current, short-circuit protection and a programmable soft-start.

DICE ELECTRICAL TEST LIMITS

T_A = 25°C. V_{IN} = 20V, V_{CC} = BOOST = BURST_EN = 10V, $\overline{SHDN}$ = 2V, R_{FSET} = 49.9kΩ, $SENSE^-$ = $SENSE^+$ = 10V, GND = PGND = SW = SYNC = 0V, unless otherwise noted.

PARAMETER	CONDITIONS	MIN	MAX	UNITS
V_{IN} Operating Voltage Range		4	60	V
V_{IN} Minimum Start Voltage			7.5	V
V_{IN} UVLO Threshold (Falling)		3.6	4	V
V_{IN} Shutdown Current	$V_{\overline{SHDN}}$ = 0V		15	µA
BOOST Operating Voltage Range			75	V
BOOST Operating Voltage Range	$V_{BOOST} – V_{SW}$		20	V
V_{CC} Operating Voltage Range			20	V
V_{CC} Output Voltage	Over Full Line and Load Range		8.3	V
V_{CC} Supply Current			3.7	mA
Error Amp Reference Voltage	Measured at V_{FB} Pad	1.224	1.238	V
$\overline{SHDN}$ Enable Threshold (Rising)		1.3	1.4	V
Sense Pads Common Mode Range		0	36	V
Current Limit Sense Voltage	$V_{SENSEP} – V_{SENSEN}$	90	115	mV
Operating Frequency		270	330	kHz
Minimum Programmable Frequency			100	kHz
Maximum Programmable Frequency		500		kHz
External Sync Frequency Range		100	600	kHz
SYNC Voltage Threshold			2	V
Error Amp Transconductance		270	410	µS
Minimum TG Off Time			650	ns
Minimum TG On Time			400	ns

Please refer to ADI standard product data sheet for all other applicable product information.

Wafer level testing is performed per the indicated specifications for dice. Considerable differences in performance can often be observed for dice versus packaged units due to the influences of packaging and assembly on certain devices and/or parameters. Please consult factory for more information on dice performance and lot qualifications via lot sampling test procedures.

Dice data sheet subject to change. Please consult factory for current revision in production.

I.D.No. 66-13-3845