LINEAR TECHNOLOGY

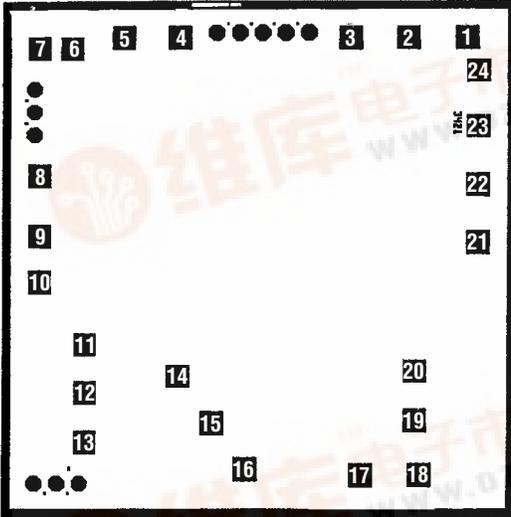## DICE/DWF SPECIFICATION

LTC3421
3A, 3MHz Micropower Synchronous Boost Converter with Output Disconnect

84 × 84 mils

PAD FUNCTION

1. FB
2. SHDN
3. V_{REF}
4. ENB
5. R_T
6. SS
7. SYNC
8. I_{LIM}
9. BURST
10. GND
11. PGND
12. PGND
13. PGND
14. SW
15. SW
16. SW
17. V_{OUT}
18. V_{OUTS}
19. V_{OUT}
20. V_{OUT}
21. V_{IN}
22. LBO
23. LBI
24. V_C

DIE CROSS REFERENCE

LTC Finished Part Number	Order DICE CANDIDATE Part Number Below
LTC®3421 LTC3421	LTC3421 DICE LTC3421 DWF

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ABSOLUTE MAXIMUM RATINGS
(Note 1)

V_{IN}, V_{OUT}, V_{OUTS} Voltage .... –0.3V to 6V
BURST, SHDN, SS, ENB, SW,
LBO, LBI, SYNC Voltages .... –0.3V to 6V

DICE ELECTRICAL TEST LIMITS V_{IN} = 1.2V, V_{OUT} = 3.3V, R_T = 56k, unless otherwise noted.

PARAMETER	CONDITIONS	MIN	MAX	UNITS
Minimum V_{IN} Start-Up Voltage	I_{LOAD} < 1mA		1	V
Minimum V_{IN} Operating Voltage	(Note 3)		0.5	V
Output Voltage Adjust Range		2.25	5.25	V
Feedback Voltage		1.196	1.244	V
Feedback Input Current	V_{FB} = 1.22V		50	nA
Quiescent Current—Burst Mode Operation	V_C = 0V, ENB = 0V (Note 2) V_C = 0V, ENB = 2V (Note 2)		20 50	µA µA
Quiescent Current—Shutdown	SHDN = 0V, ENB = 0V SHDN = 0V, ENB > 1.4V		1 2	µA µA
Quiescent Current—Active	(Note 2)		1.1	mA
NMOS Switch Leakage			5	µA
NMOS Switch On Resistance				Ω
PMOS Switch On Resistance				Ω

DICE ELECTRICAL TEST LIMITS V_{IN} = 1.2V, V_{OUT} = 3.3V, R_T = 56k, unless otherwise noted.

PARAMETER	CONDITIONS	MIN	MAX	UNITS
NMOS Current Limit	I_{LIM} Resistor = 105k	1		A
Max Duty Cycle		84		%
Min Duty Cycle			0	%
Frequency Accuracy		418	582	kHz
SYNC Input High		2.2		V
SYNC Input Low			0.8	V
SYNC Input Current			1	µA
ENB Input High		1.2		V
ENB Input Low			0.4	V
ENB Input Current			1	µA
$\overline{SHDN}$ Input High	V_{OUT} = 0V (Initial Start-Up) V_{OUT} > 2.4V	1.00 0.65		V V
$\overline{SHDN}$ Input Low			0.25	V
$\overline{SHDN}$ Input Current			1	µA
REF Output Voltage		1.183	1.257	V
REF Output Current Range		−100	8	µA
Error Amp Transconductance				µs
LBI Threshold	Falling Edge	0.58	0.62	V
LBI Input Current			1	µA
$\overline{LBO}$ Low Voltage	V_{IN} = 0V, I_{SINK} = 1mA V_{IN} = 0V, I_{SINK} = 20mA		50 0.5	mV V
$\overline{LBO}$ Leakage	V_{PGOOD} = 5.5V		1	µA
SS Current Source	V_{SS} = 1V	1.2	5	µA
BURST Threshold Voltage	Falling Edge	0.87	1.07	V

Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: Current is measured into the V_{OUTS} pin since the supply current is bootstrapped to the output. The current will reflect to the input supply by (V_{OUT}/V_{IN}) • Efficiency. The outputs are not switching.

Note 3: Once V_{OUT} is greater than 2.4V, the IC is not dependent on the V_{IN} supply.

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.