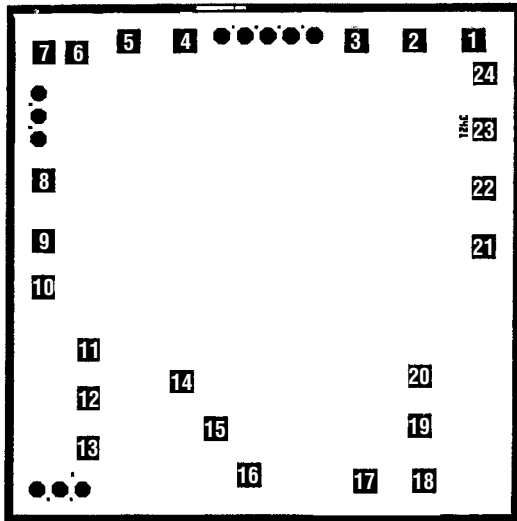


**3A, 3MHz Micropower  
 Synchronous Boost Converter  
 with Output Disconnect**



84 × 84 mils

**PAD FUNCTION**

- |                     |                       |
|---------------------|-----------------------|
| 1. FB               | 13. PGND              |
| 2. SHDN             | 14. SW                |
| 3. V <sub>REF</sub> | 15. SW                |
| 4. ENB              | 16. SW                |
| 5. R <sub>T</sub>   | 17. V <sub>OUT</sub>  |
| 6. SS               | 18. V <sub>OUTS</sub> |
| 7. SYNC             | 19. V <sub>OUT</sub>  |
| 8. I <sub>LIM</sub> | 20. V <sub>OUT</sub>  |
| 9. BURST            | 21. V <sub>IN</sub>   |
| 10. GND             | 22. LBO               |
| 11. PGND            | 23. LBI               |
| 12. PGND            | 24. V <sub>C</sub>    |

**DIE CROSS REFERENCE**

LTC Finished Part Number	Order DICE CANDIDATE Part Number Below
LTC <sup>®</sup> 3421 LTC3421	LTC3421 DICE LTC3421 DWF

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**ABSOLUTE MAXIMUM RATINGS**

(Note 1)

V<sub>IN</sub>, V<sub>OUT</sub>, V<sub>OUTS</sub> Voltage ..... -0.3V to 6V  
 BURST, SHDN, SS, ENB, SW,  
 LBO, LBI, SYNC Voltages ..... -0.3V to 6V

**DICE ELECTRICAL TEST LIMITS** V<sub>IN</sub> = 1.2V, V<sub>OUT</sub> = 3.3V, R<sub>T</sub> = 56k, unless otherwise noted.

PARAMETER	CONDITIONS	MIN	MAX	UNITS
Minimum V <sub>IN</sub> Start-Up Voltage	I <sub>LOAD</sub> < 1mA		1	V
Minimum V <sub>IN</sub> 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 <sub>FB</sub> = 1.22V		50	nA
Quiescent Current—Burst Mode Operation	V <sub>C</sub> = 0V, ENB = 0V (Note 2) V <sub>C</sub> = 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/DWF SPECIFICATION

## LTC3421

### 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	$\mu A$
ENB Input High		1.2		V
ENB Input Low			0.4	V
ENB Input Current			1	$\mu A$
SHDN Input High	$V_{OUT} = 0V$ (Initial Start-Up) $V_{OUT} > 2.4V$	1.00		V
		0.65		V
SHDN Input Low			0.25	V
SHDN Input Current			1	$\mu A$
REF Output Voltage		1.183	1.257	V
REF Output Current Range		-100	8	$\mu A$
Error Amp Transconductance				$\mu S$
LBI Threshold	Falling Edge	0.58	0.62	V
LBI Input Current			1	$\mu A$
LBO Low Voltage	$V_{IN} = 0V$ , $I_{SINK} = 1mA$ $V_{IN} = 0V$ , $I_{SINK} = 20mA$		50	mV
			0.5	V
LBO Leakage	$V_{PGOOD} = 5.5V$		1	$\mu A$
SS Current Source	$V_{SS} = 1V$	1.2	5	$\mu A$
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  $(V_{OUT}/V_{IN}) \cdot \text{Efficiency}$ . 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.

I.D.No. 66-13-3421