

SCT2432Q

REVISION HISTORY

: : 5
67 - 8
: =

DEVICE ORDER INFORMATION

PART NUMBER	PACKAGE MARKING	PACKAGE DISCRIPTION
+ 9 -	9	4 8 - 7 8
1) . :)	: + 9 -:	

ABSOLUTE MAXIMUM RATINGS

7

PIN CONFIGURATION



		8)
/ 6,		/	++	
		:	+	
8		0	-	/ 6, 5
		8+*		

RECOMMENDED OPERATING CONDITIONS

7

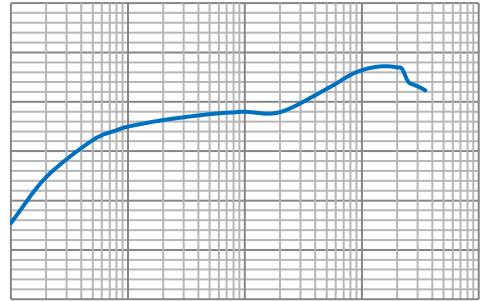
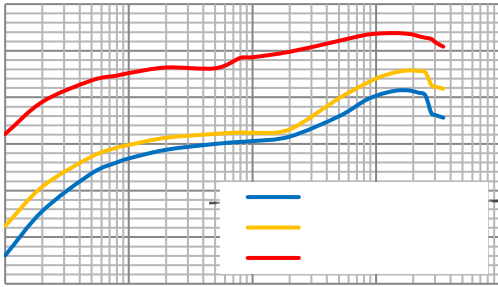
PARAMETER	DEFINITION	MIN	MAX
16	1		
7 =	7		
2	7		

ESD RATINGS

PARAMETER	DEFINITION	MIN	MAX
	0 * 5 0*5) 6 12-, - + 2		
	+ , 5 +, 5) 6 12-, - + 2		

$$\frac{8}{4} + 9 + 4 = 11 + 9 + 4 = 24$$

TYPICAL CHARACTERISTICS



. - 4 + %

. - 4 + %

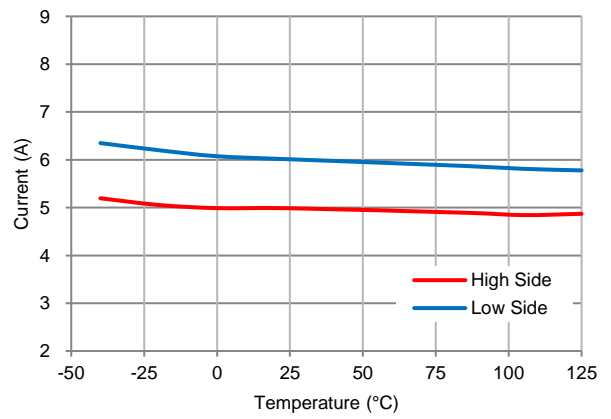
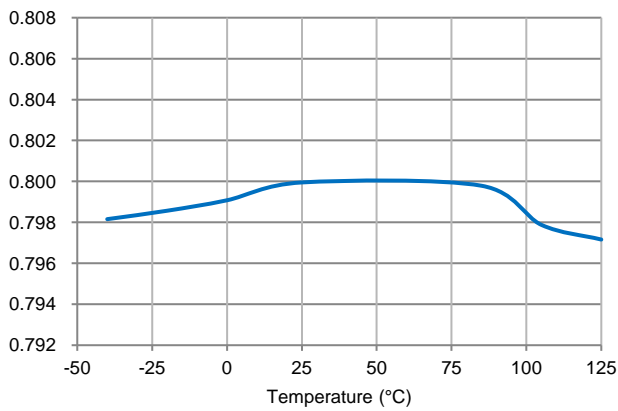
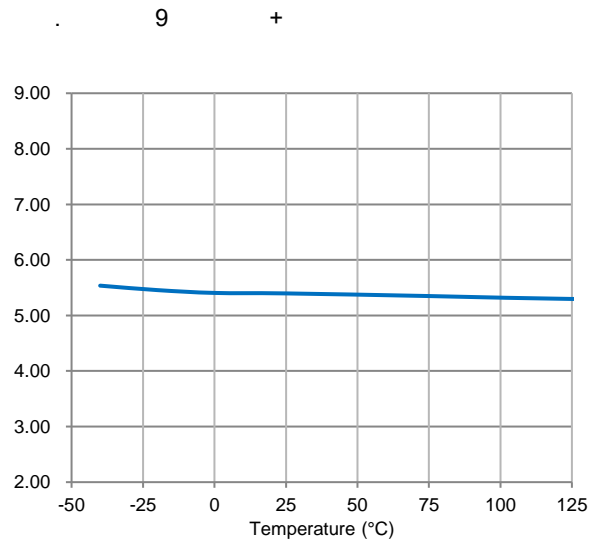
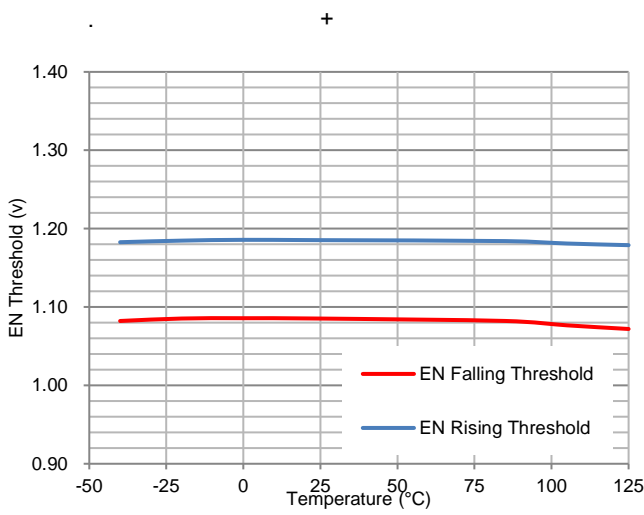
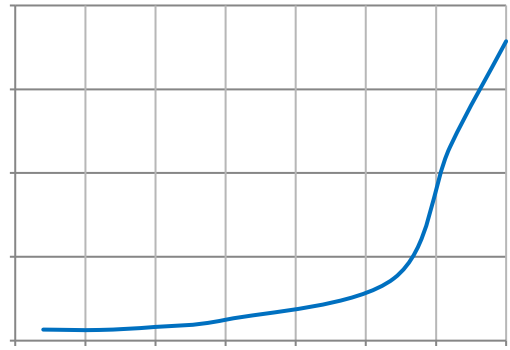
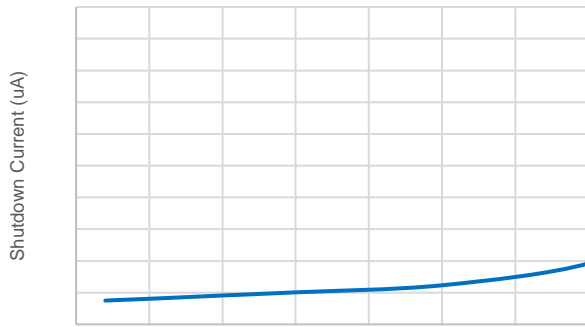
. - 4 + %

. 4 : %

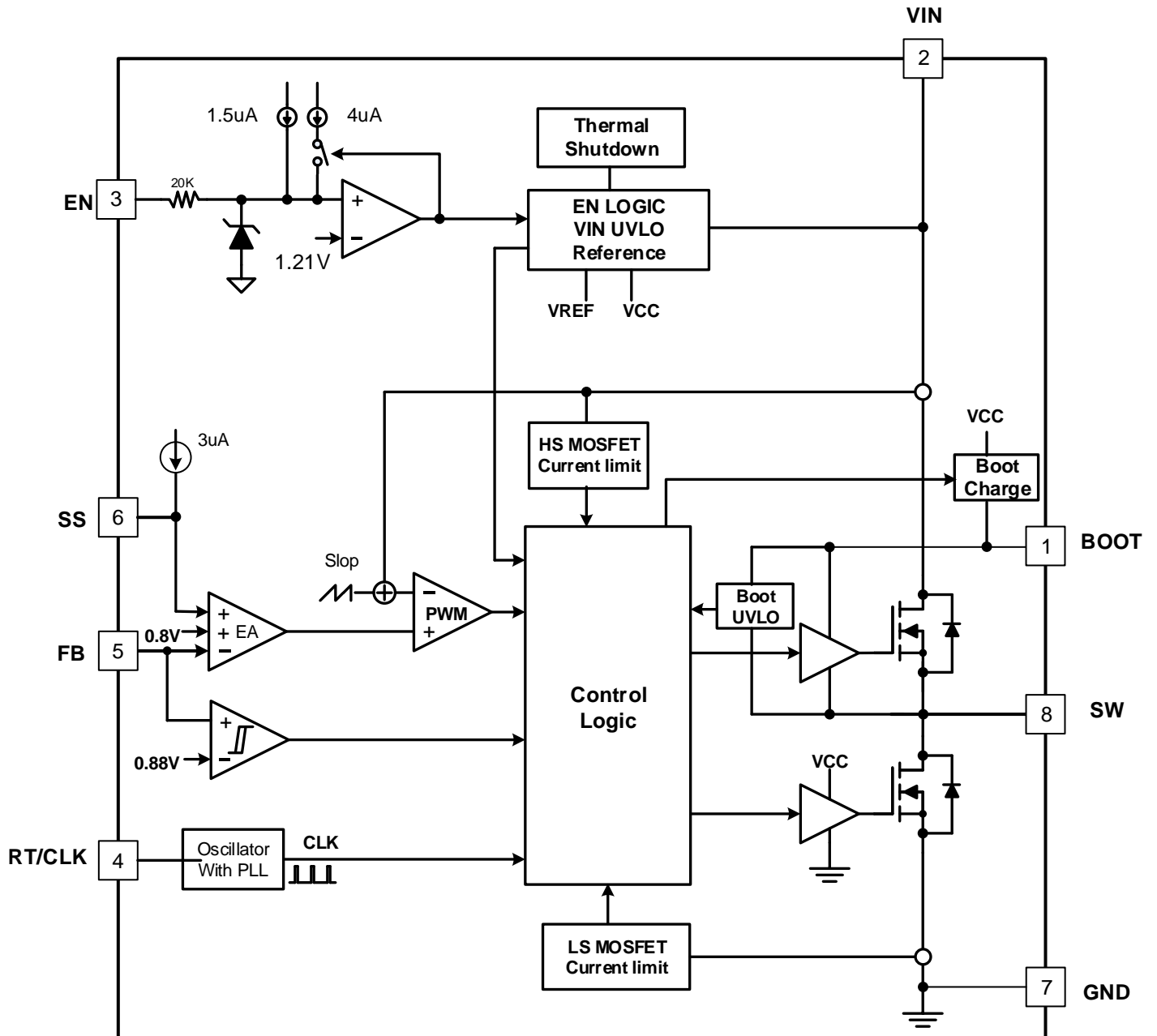
. 4 : 1 %)

. + . : +43 :

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FUNCTIONAL BLOCK DIAGRAM



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OPERATION

Overview

+ 9 :) -51 :
57 .- 1
0 50
+ 9
8 5 8 5
)
+ 9 -6
= 47 -6
+ -6 16
+ 9 -51
+ 9

Peak Current Mode Control

+ 9)
57 .- 9
57 .- +758
57 .- 9
+758 . * +758
+ 9 8 5 8 5 +758 +758
8 5
7 . * +758
) +758 57 .-)
)

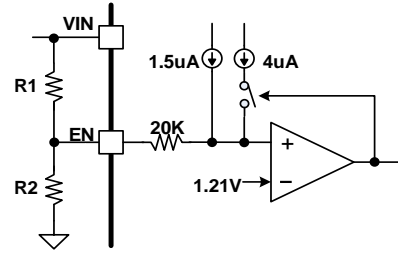
Enable and Under Voltage Lockout Threshold

+ 9 16 -6
16 -6

8 . 4 + 9 + 4) : :



-6)) -6 16 -6
 -6 = 47 16 16
 -6 = 47



- = 47
- = 47

Output Voltage

+ 9

±

. * 1

= -

0

- : . * 78
- : . * 7

Programmable Soft-Start

+ 9

+ + +

+ -6

-)

- +
-

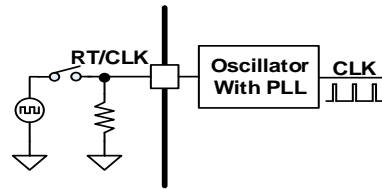
Switching Frequency and Clock Synchronization

+ 9

: +43

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1 30 50 : +43 : +43
= - .



1 : +43 30 50) : +43
: +43

1 *
) 844

Frequency Spread Spectrum

-51 + 9 . . .
: +43

Bootstrap Voltage Regulator and Low Drop-out Operation

) *77
57 .-
57 .- 57 .-
= 47 57 .-
*77 = 47 57 .- 57 .-

, 7 4,7 0 57 .- *77 + 9 4 ,
*77 = 47 *77 57 .-
4 57 .- 5 % 5 *77 4 *
57 .- 5 4,7
, 4,7

4, 7

+ 9 4, 7

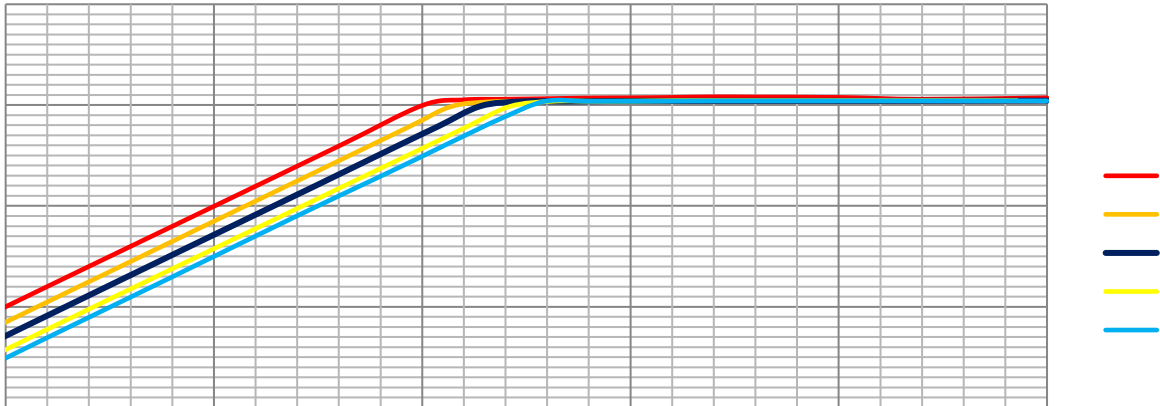
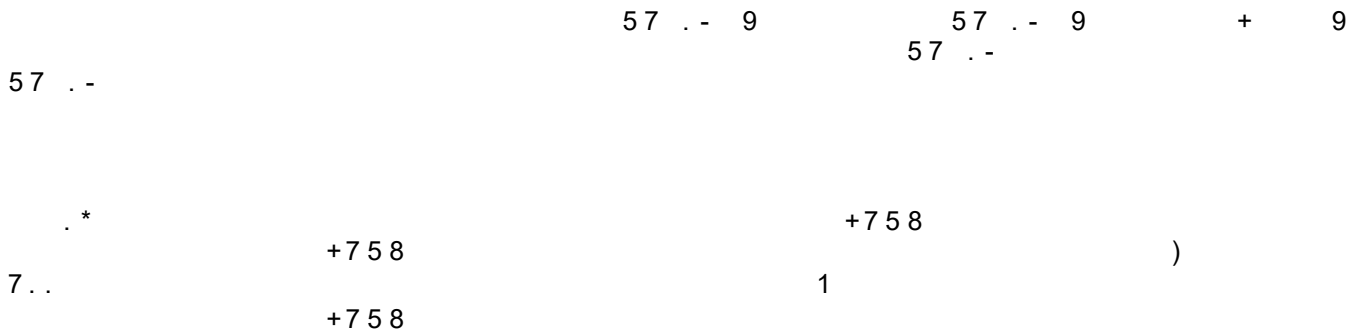
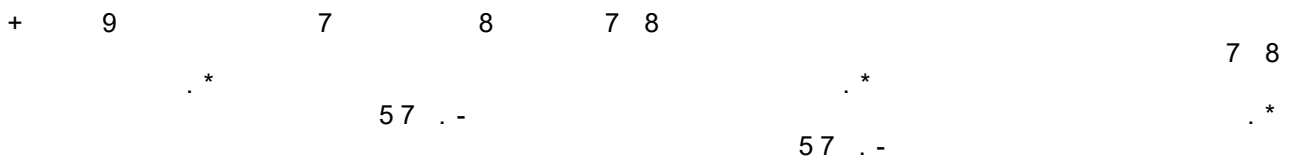


Figure 17. LDO Operation Characteristic (Vout =5V)

Over Current Limit and Hiccup Mode



Over voltage Protection



Thermal Shutdown



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APPLICATION INFORMATION

Typical Application

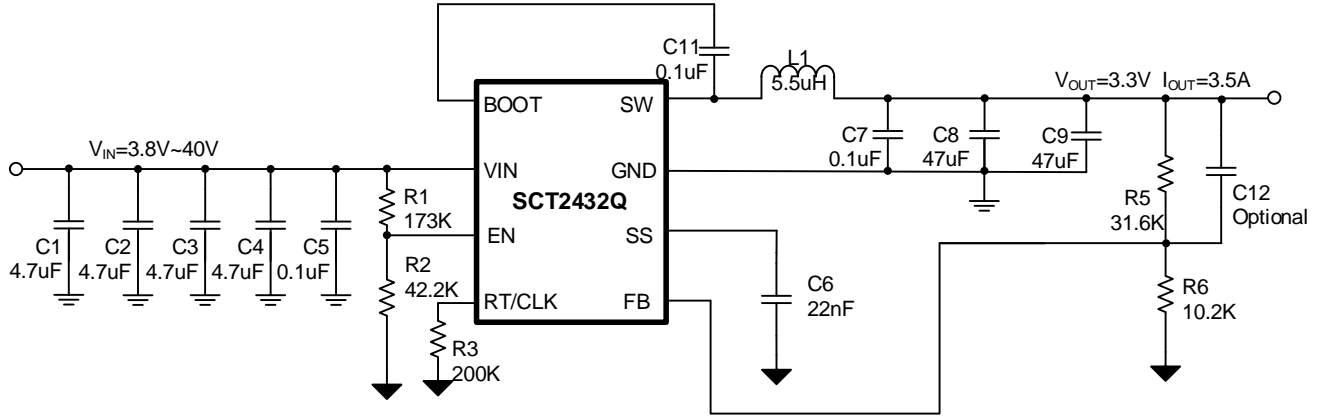


Figure 18. SCT2432Q Design Example, 3.3V Output with Programmable UVLO

Design Parameters

Design Parameters	Example Value
1	6
7	
5 7 +)
.	30
7	
1 16	
1 16	

Output Voltage

3 =

V _{OUT}	R ₅	R ₆
	3	3
	3	3
	3	3
	3	3
	3	3
	3	3

Switching Frequency

0 0 1 0
 : +43 / 6,

F _{sw}	R ₃ (R _{Fsw})
30	3
30	3
30	3

Under Voltage Lock-Out

) = 4 7 : = 47 -6 = 47 : -6

) = - - : :

Inductor Selection

: 5 , + 91 , +: 4 0

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)

1488

-

- 1488
- 4
-
- 7 =
- 16

= -

- 45 16
 -
 - 7 =
 - 16
 - 17 =
 - 41
- 1488 , + 17 =

: 5

148-) 3

14: 5

- 148-) 3
- 17 = , +
- 1488
- 14: 5 : 5

1

) *)

148-) 3

+

9

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-
- 4
- +7 =
- 7 =
- 16

, , + , +

Inverting Power application

+ 9

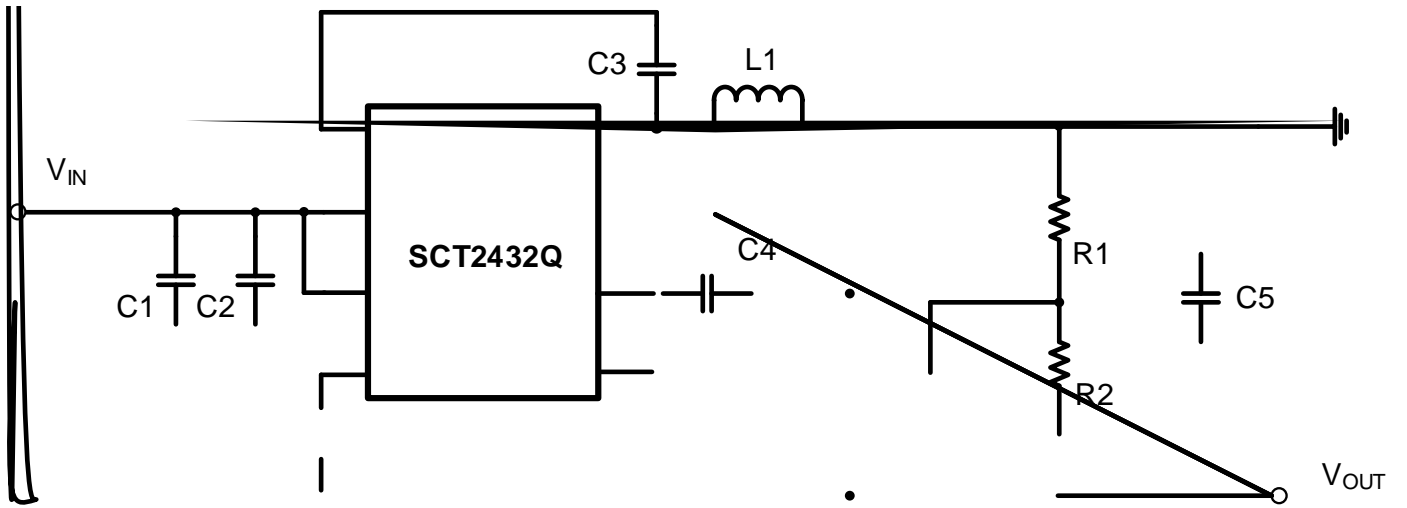
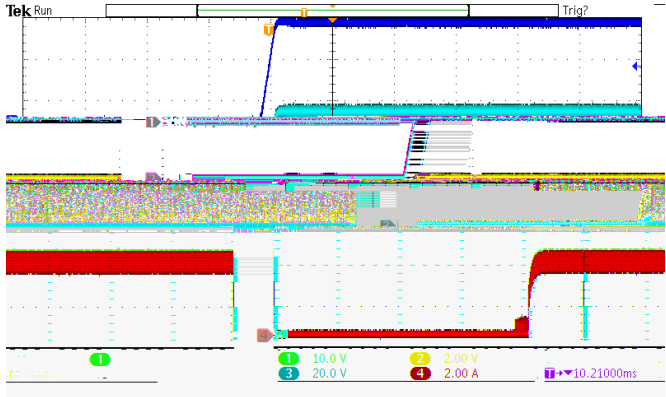


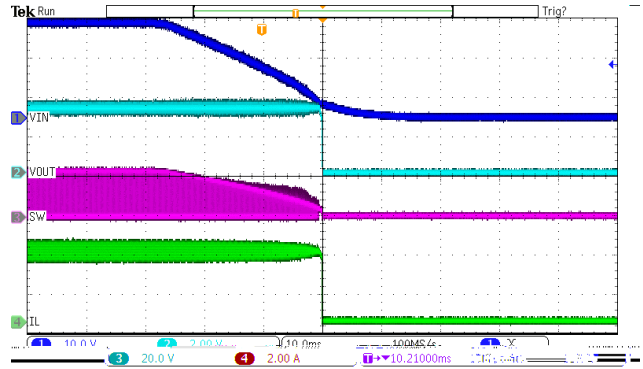
Figure 19. SCT2432Q Inverting Power Supply

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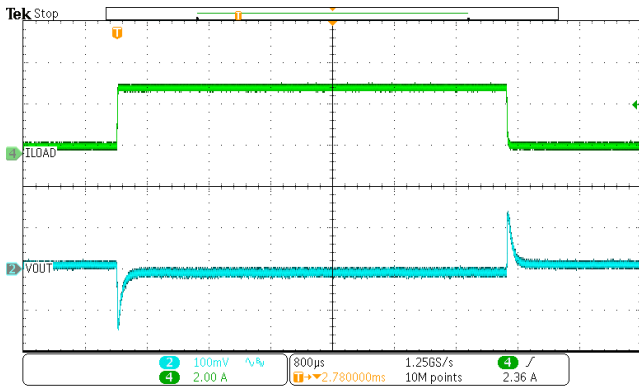
Application Waveforms



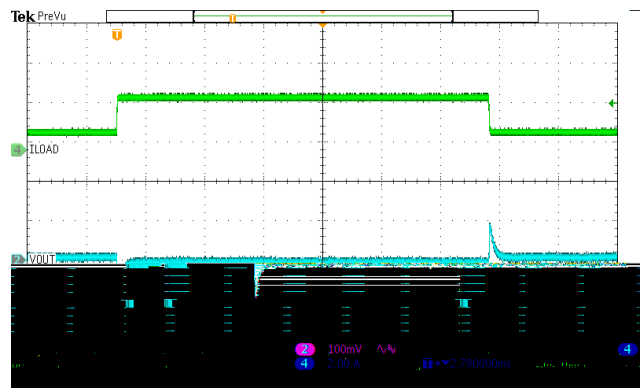
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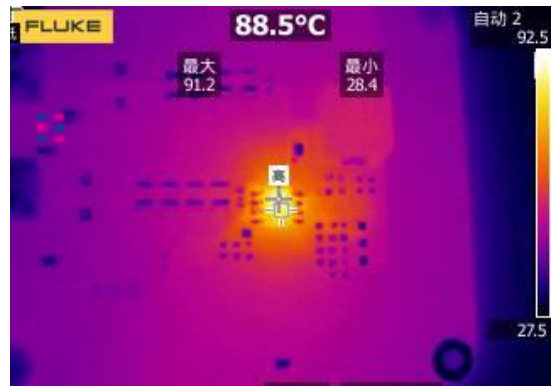
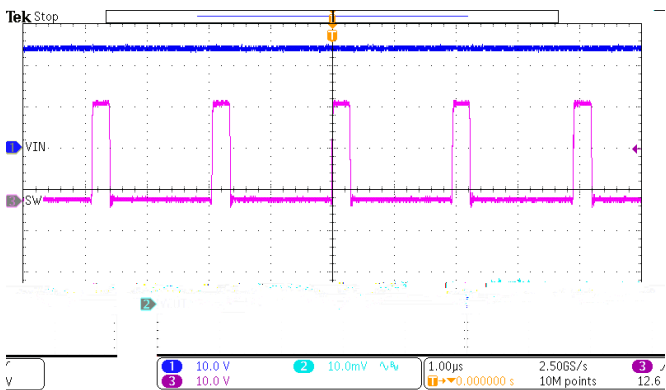
8



4



4



Layout Guideline

8 8+* + 9

1. 8

8+*

2. 8 - : 16

3. . 5

4. 8+* 1+

5. 7 8+*

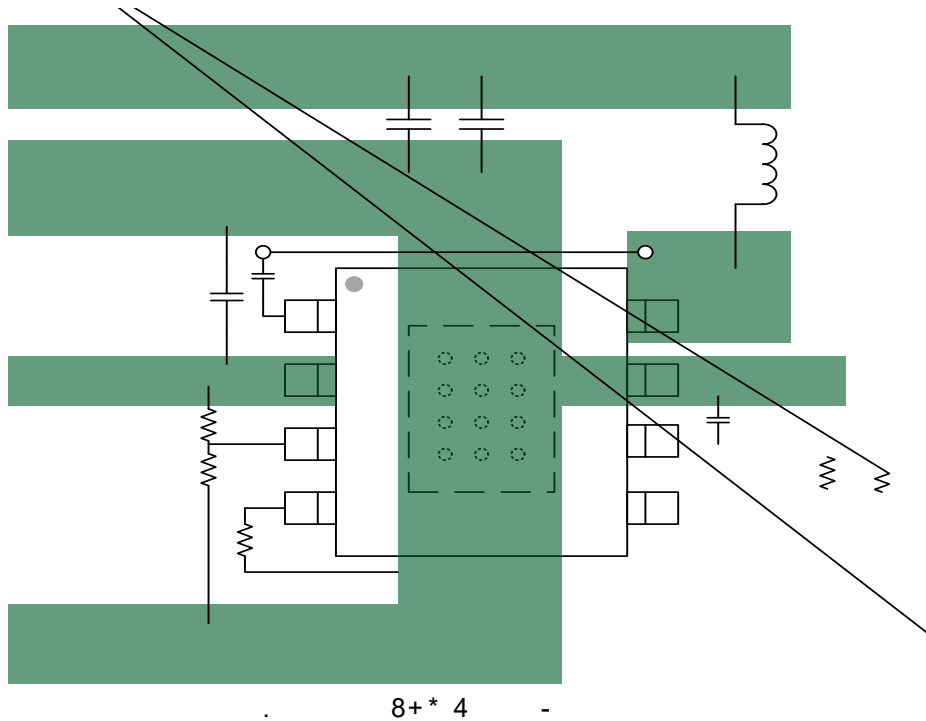
6. : +43 : 1+

7. 1+

8. = 47 : / 6,

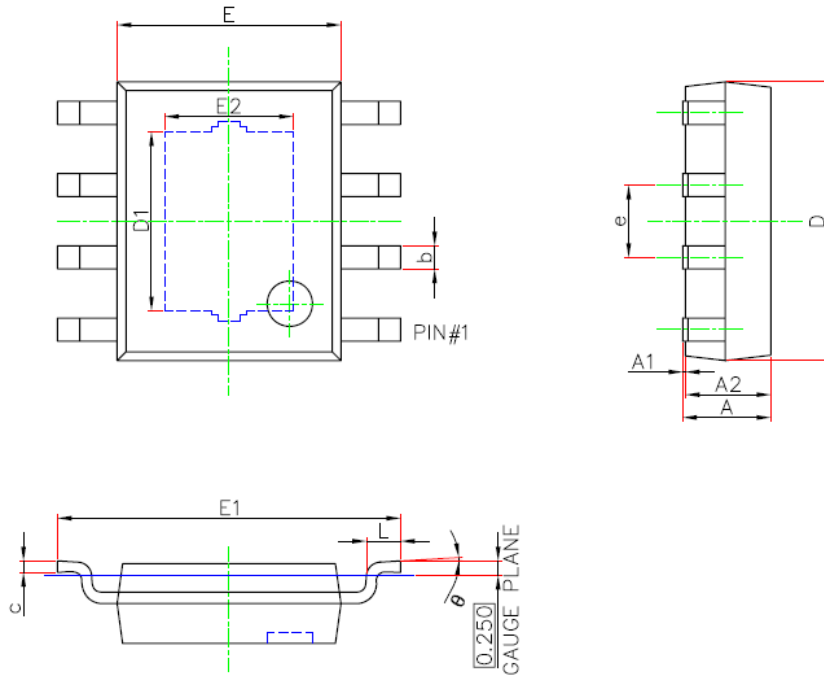
9. : *77

10..



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PACKAGE INFORMATION



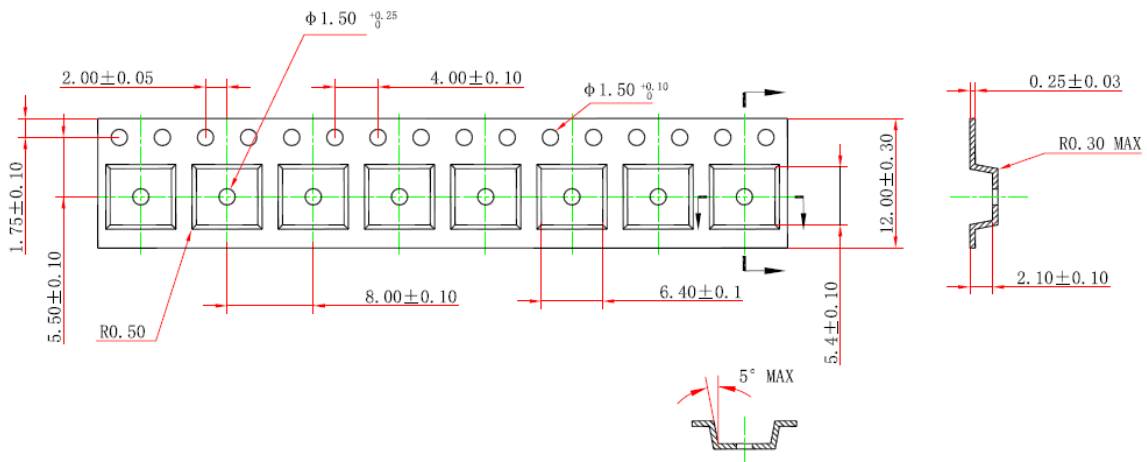
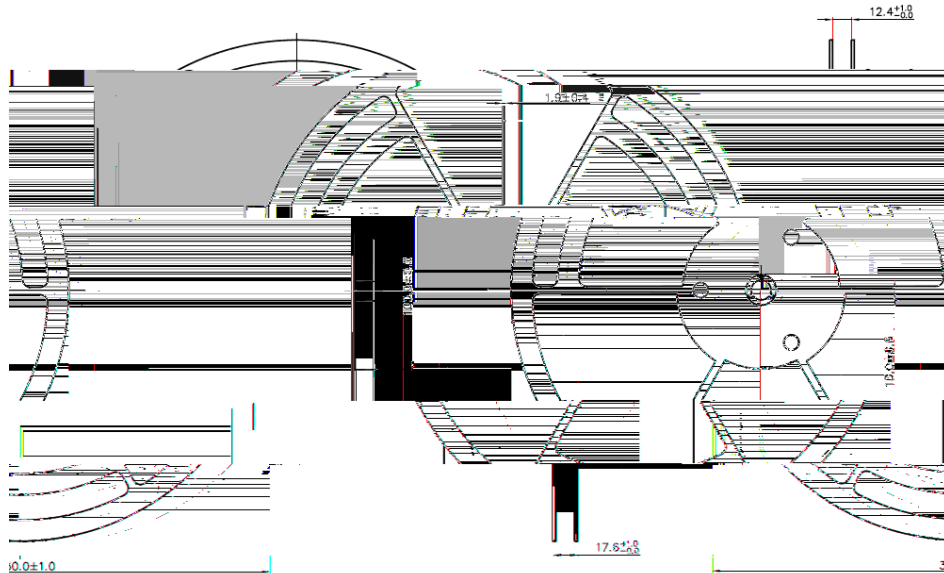
7 8 88 8 7 ,

	5	5	5	1
)				5
)				
)				
,				
,				
-				
-				
-				
		* +		* +
4				
θ				

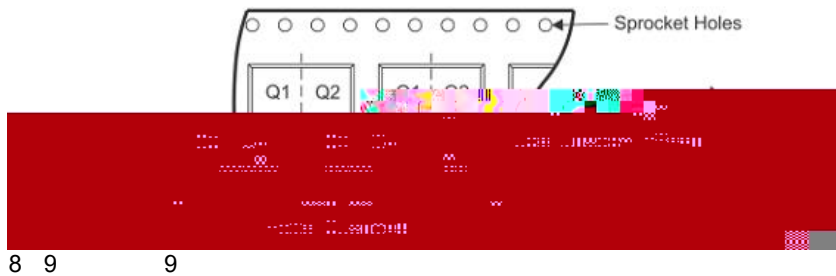
NOTE:

1. , 2-, -+ 57
2. ,
3.)
- 4.
5. ,
6. + 8+*

TAPE AND REEL INFORMATION



QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



8 9 9

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NOTICE:

1 + 8

= + +