

PIN FUNCTIONS

NAME	NO.	I/O ⁽¹⁾	PIN FUNCTION
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THERMAL INFORMATION

PARAMETER	THERMAL METRIC	QFN-20L	UNIT

SCT82A30

RECOMMENDED OPERATING CONDITIONS

PARAMETER	DEFINITION	MIN	MAX	UNIT

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SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT

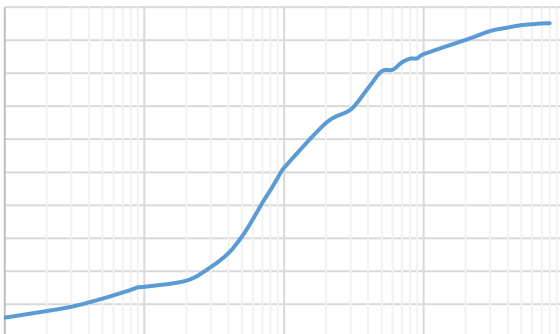
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SYMBOL PARAMETER

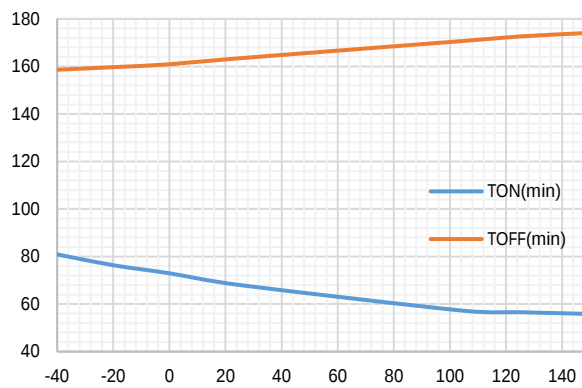
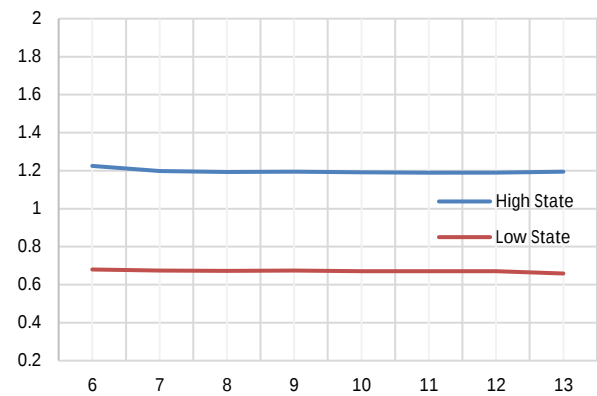
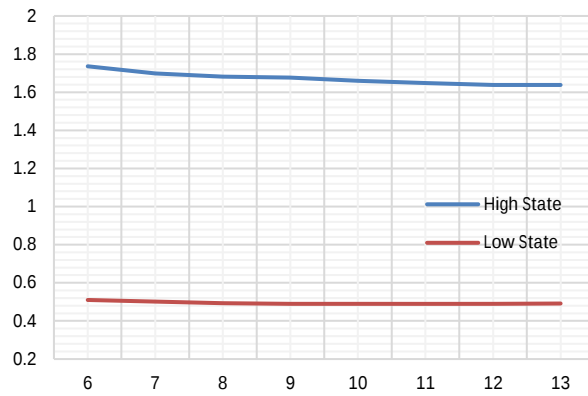
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SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT
Thermal Shutdown						

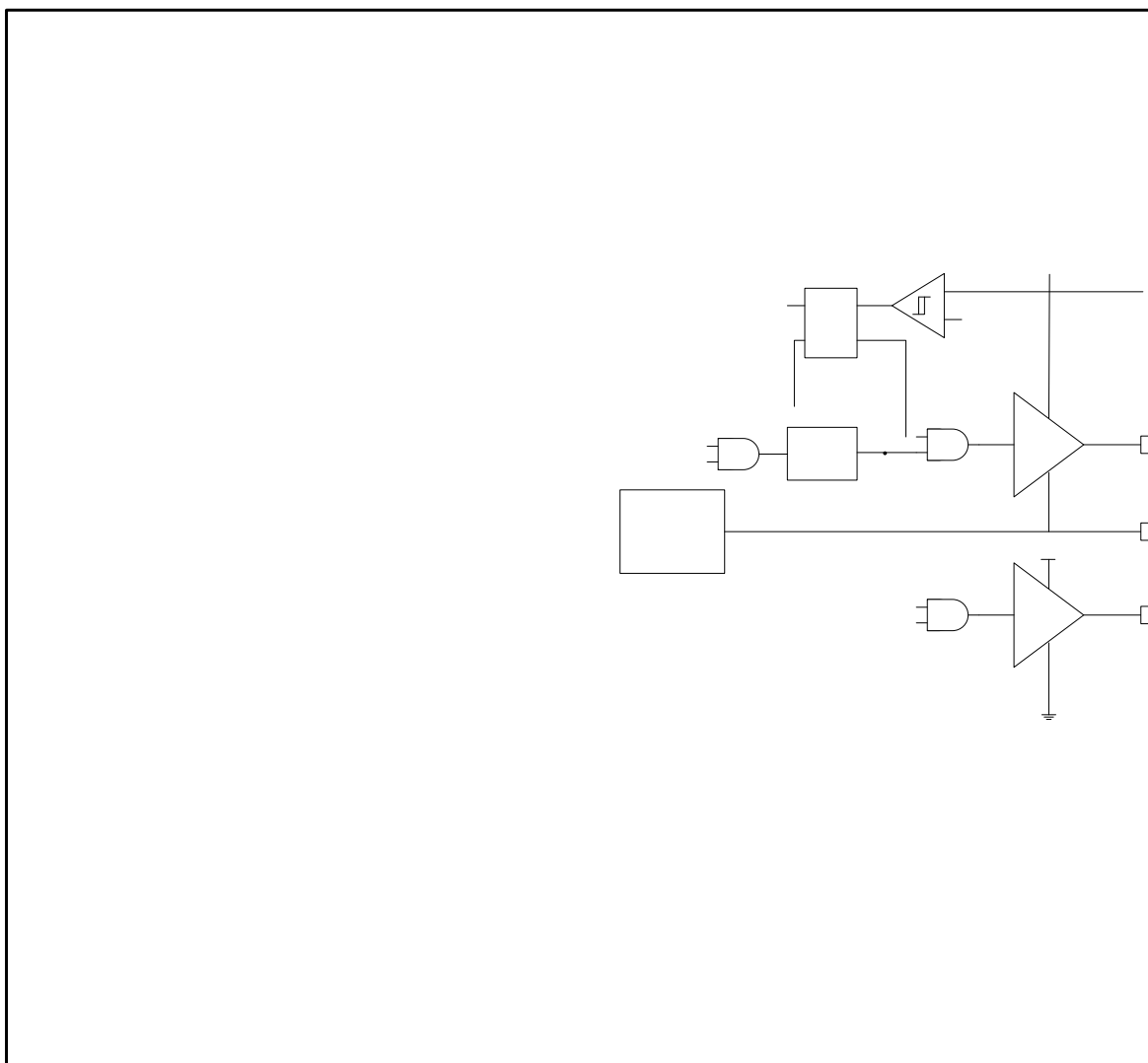
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



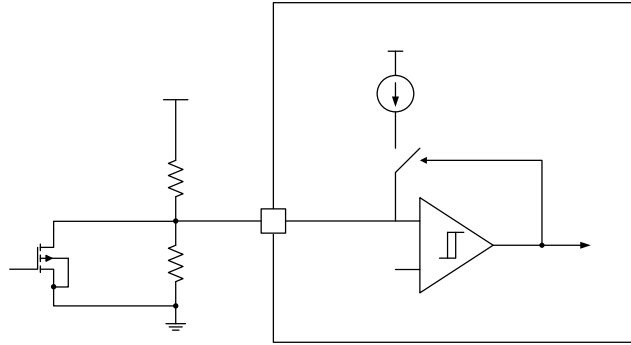
FUNCTIONAL BLOCK DIAGRAM



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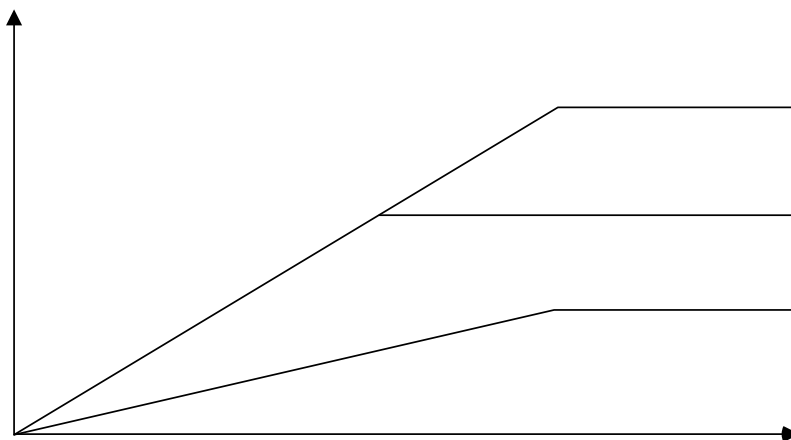
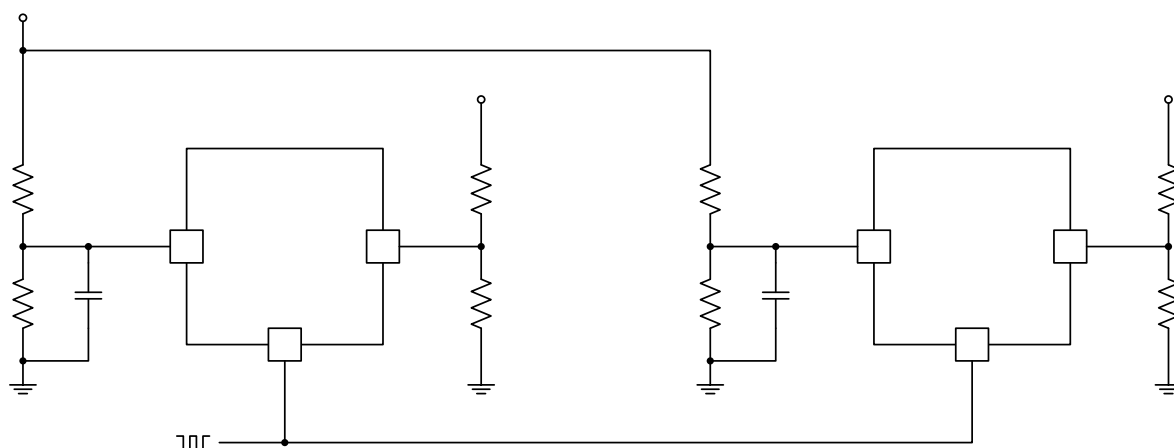
OPERATION

Overview

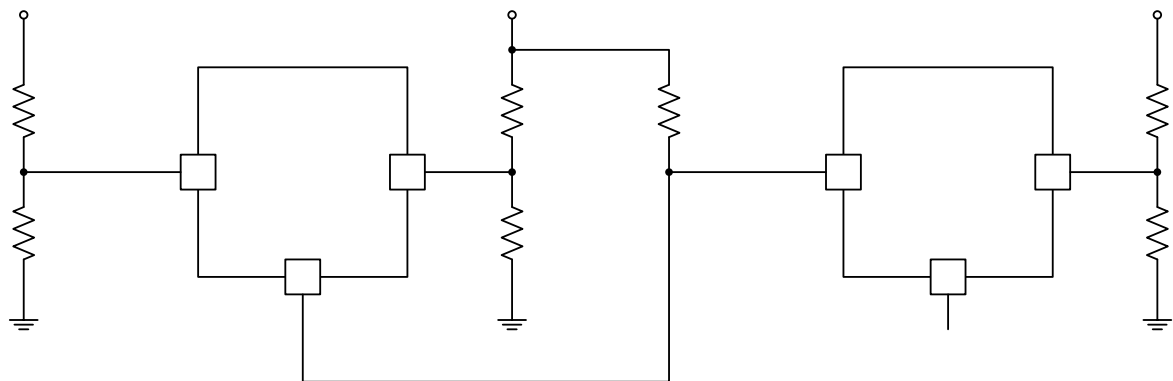


Soft Start and Voltage Tracking

e

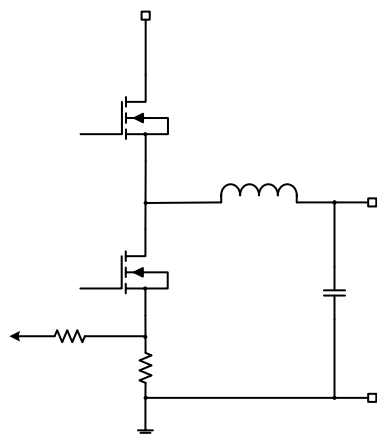
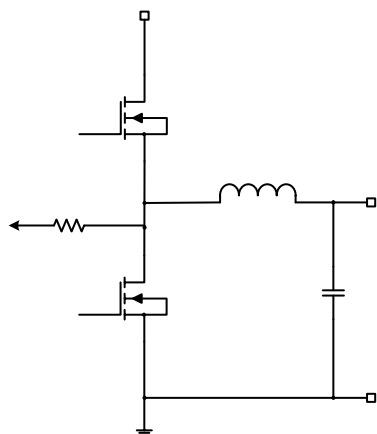


Power Good Monitor PGOOD



Switching Frequency and Clock Synchronization

Switching Frequency (kHz)	Frequency Set Resistance (kΩ)



Device Functional Modes

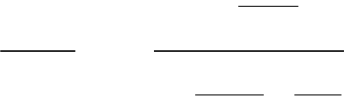
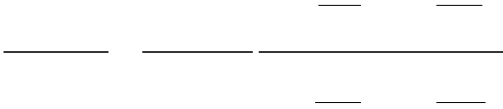
Shutdown Mode

Standby Mode

Active Mode

Diode Emulation Mode

Thermal Shutdown

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			DQ G W K H
1 LC			

— — —

A Q

$$\omega_{z1} = K \cdot \omega_o, \omega_{z2} = \omega_o, \omega_{p1} = \omega_{SW}/2, \quad \omega_{p2} = \omega_{ESR}$$

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APPLICATION INFORMATION

Typical Application

Application Waveforms(continued)

Typical Application

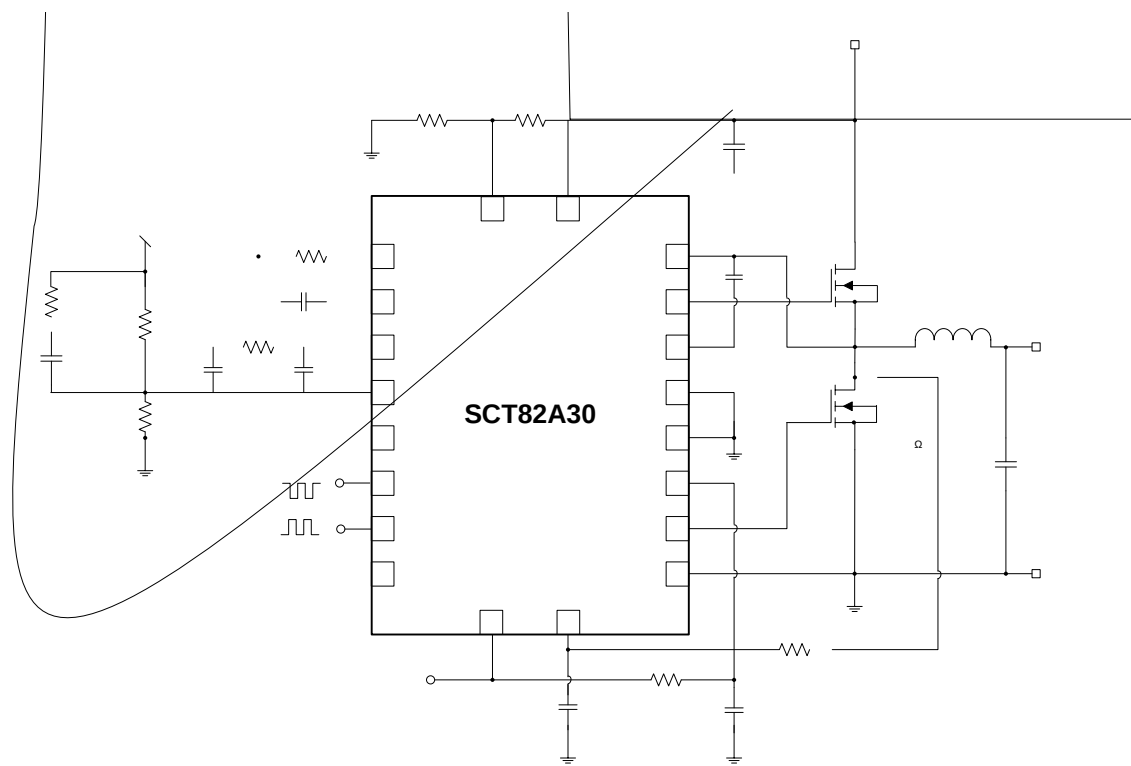


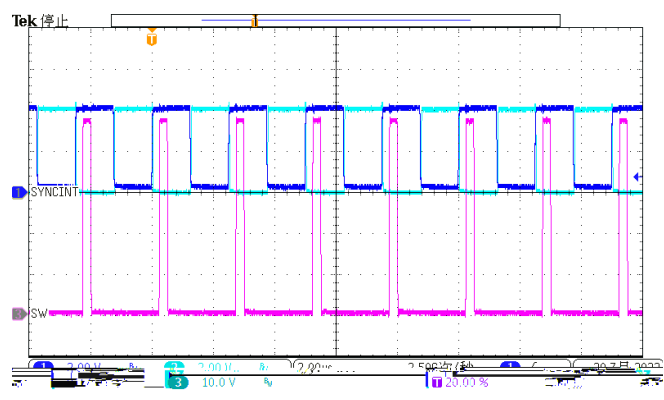
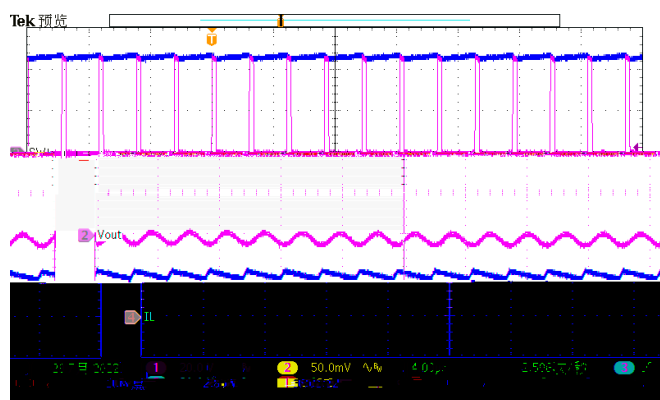
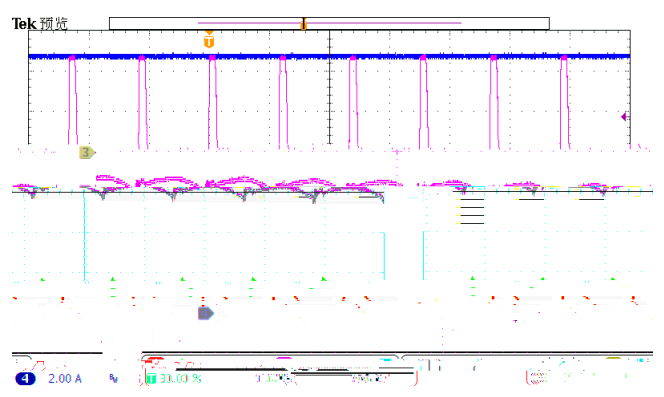
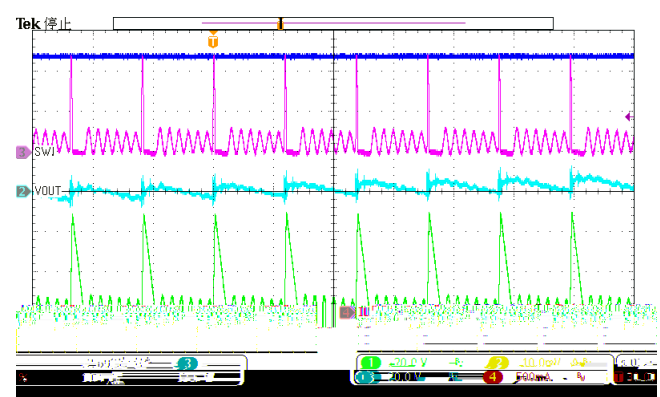
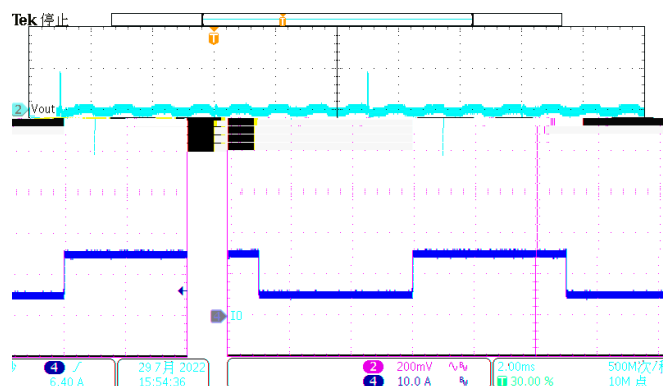
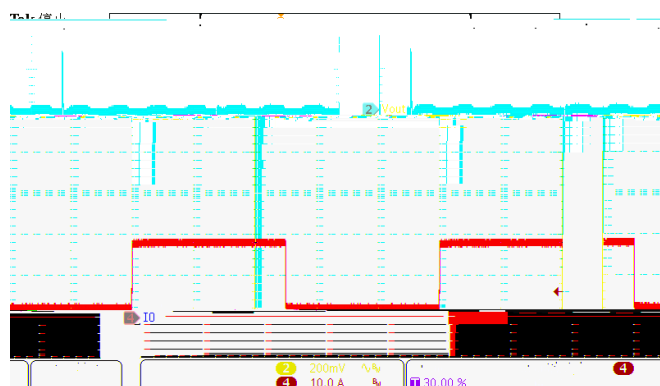
Figure 41. Application Schematic, 48V to 5V, 20A Buck Regulator at 400kHz

Design Parameters	
Design Parameters	Example Value

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Application Waveforms

Application Waveforms(continued)



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Table 5: Compensation Values for Typical Output Voltage/Capacitor Combinations at fsw=400KHz

Vout	L	COUT	R _{FB}	R _{FB}	R _c	C _c	C _c	R _c	C _c
V	. uH	* uF	. K	. K	. K	nF	pF		. nF
V	. uH	* uF	K	. K	K	. nF	pF		. nF
V	. uH	* uF	. K	. K	. K	. nF	pF		pF

