

# Product Selector Guide



POWER IT. PROTECT IT. CONNECT IT.®

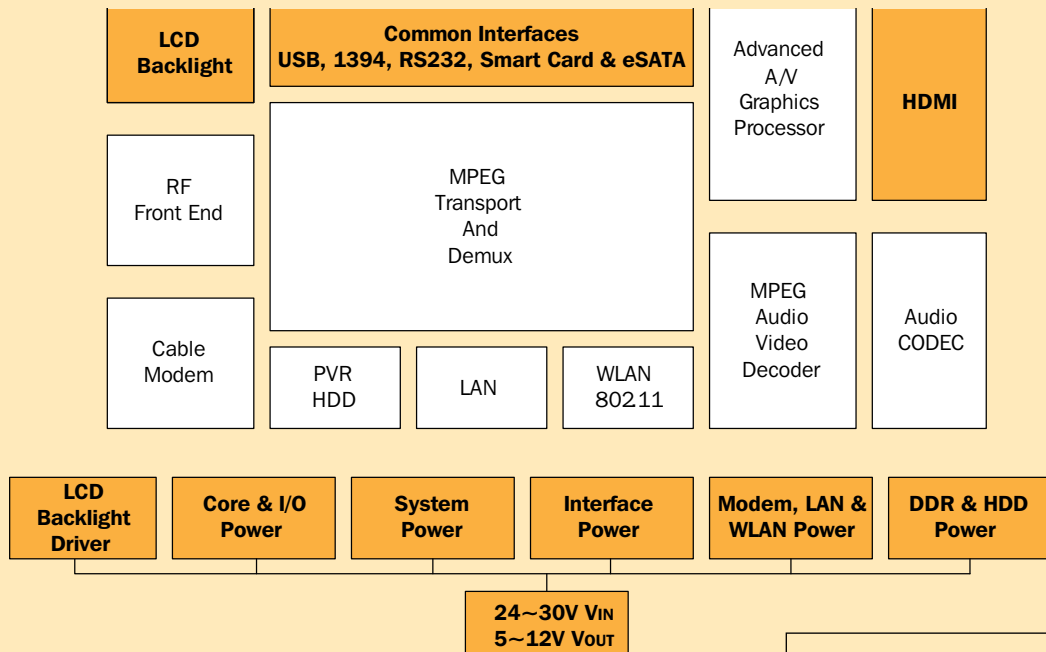


## Set Top Box Platform Solutions

Semtech offers Power and Protection front end solutions for your designs

Today's consumers are demanding more feature rich content in their entertainment systems. The Set Top Box is key to providing the gateway for feature enabled information and entertainment. To address the design needs of the Set Top Box and enable faster time to market, Semtech provides leading-edge silicon solutions for the

Set Top Box platform. From a wide array of power management products to ESD protection, Semtech offers a full range of semiconductor solutions and systems intelligence to enable design engineers to develop world class Set Top Box platforms.



Set Top Box Block Diagram

 : Semtech Product Offering

# Set Top Box Product Selector Guide

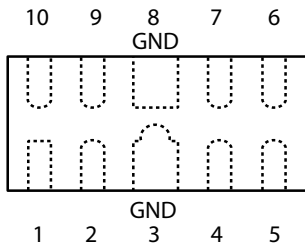


## PROTECT IT.

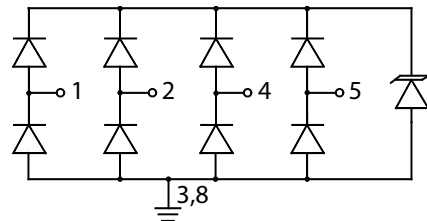
### RClamp0524P FOR HDMI 1.3

#### Key Features:

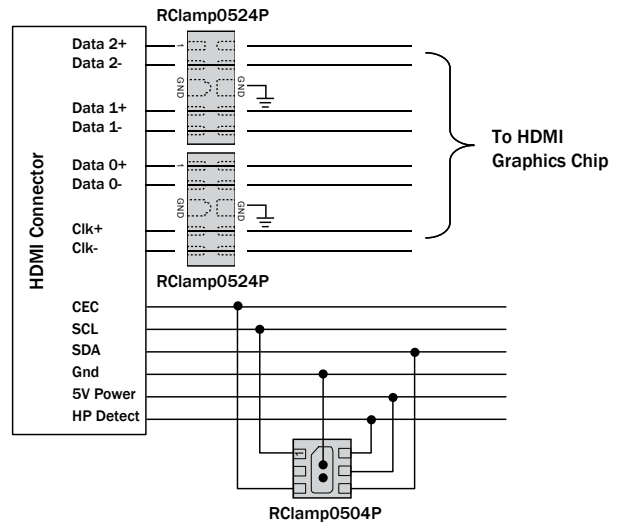
- Typical capacitance 0.3pF (Line-to-Line)
- No impedance compensation necessary
- 0.5mm pitch between the signal pairs
- Protects 2 high-speed differential line pairs
- ESD Protection to IEC 61000-4-2
- Flow-through package



RClamp0524P package



RClamp0524P



## PROTECT IT.

### Protection Products - Selector Guide

Part Number	V <sub>RWM</sub>	Lines	ESD Rating		Typ. Cap (I/O to I/O)	Ipp @ 8/20µs	Pkg Size (mm)	Interface
			Air	Contact				
RClamp0524P	5V	4	±17kV	±12kV	0.3pF	5A	2.5 x 1.0 x 0.6	HDMI, DVI, eSATA
RClamp0522P	5V	2	±17kV	±12kV	0.3pF	5A	1.6 x 1.0 x 0.6	HDMI, DVI, eSATA
RClamp0504N	5V	4	±15kV	±8kV	1.5pF	12A	2.0 x 2.0 x 0.6	USB, Ethernet
RClamp0502N	5V	2	±15kV	±8kV	0.3pF	5A	1.2 x 1.0 x 0.6	USB, Video
RClamp0502B	5V	2	±15kV	±8kV	0.6pF	5A	1.6 x 1.6 x 0.75	USB, Video
RClamp2504N	2.5V	4	±25kV	±15kV	2.0pF	25A	2.6 x 2.6 x 0.6	Ethernet
RClamp3304N	3.3V	4	±25kV	±15kV	2.0pF	25A	2.6 x 2.6 x 0.6	Ethernet
RClamp3304P	3.3V	4	±20kV	±12kV	0.4pF	5A	1.6 x 1.6 x 0.6	Ethernet
RClamp0504P	5V	4	±15kV	±8kV	0.8pF	5A	1.6 x 1.6 x 0.6	Ethernet, USB
µClamp1211P	12V	1	±15kV	±8kV	25pF	5A	1.0 x 0.6 x 0.5	RS-232, Serial data
µClamp0506P	5V	6	±20kV	±12kV	30pF	5A	1.6 x 1.6 x 0.6	Audio Ports, Keypad

## Set Top Box Product Selector Guide

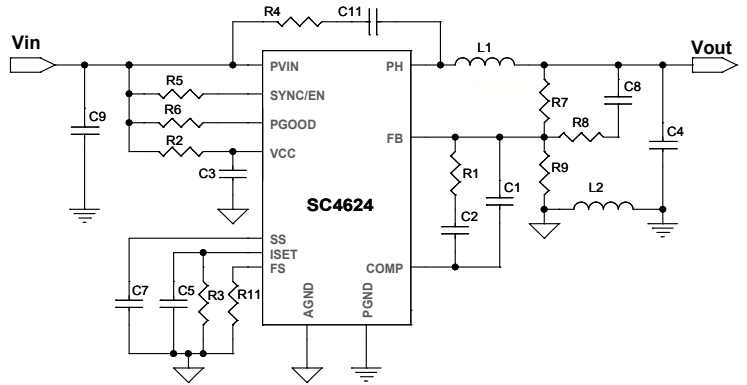


### POWER IT.

#### SC4624A – 4A Synchronous Step-down Switching Regulator

##### Key Features:

- Input voltage range: 2.3V to 5.5V
- Adjustable output: 0.5V to  $V_{in}$
- 4A of continuous output current
- Programmable frequency: 200kHz – 2MHz
- Shutdown current:  $< 1\mu A$
- External synchronization
- Independent sync and enable pins
- Programmable Soft-start

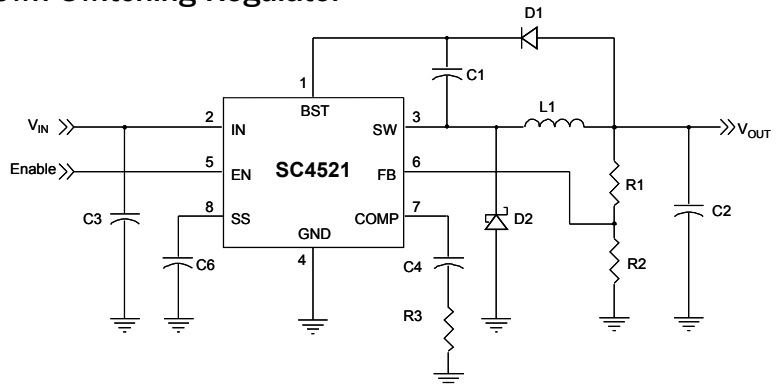


### POWER IT.

#### SC4521 – 2.5A Asynchronous Step-down Switching Regulator

##### Key Features:

- Input voltage range: 4.4V to 24V
- Adjustable output voltage as low as 0.8V
- 2.5A output current
- 600kHz oscillator frequency
- Programmable Soft-start
- Independent enable pin

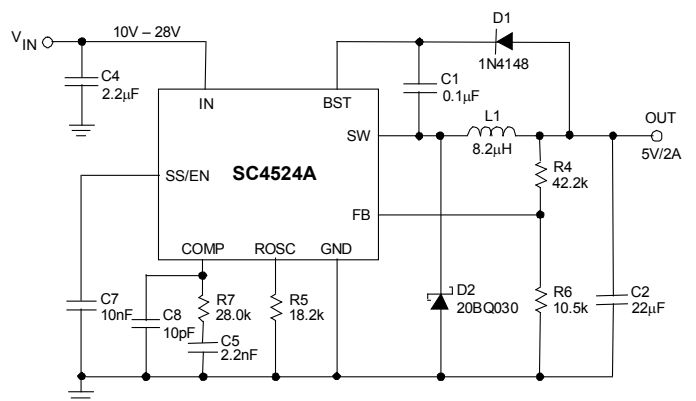


### POWER IT.

#### SC4524A/SC4524B – 2A Asynchronous Step-down Switching Regulators

##### Key Features:

- Input voltage range:
  - SC4524A: 3.0V – 30V
  - SC4524B: 3.0V – 16V
- Wide output voltage range: 1.0V –  $0.80 \cdot V_{in}$
- 2A output current
- Oscillator frequency: 200kHz – 2MHz
- Programmable Soft-start
- Efficiency:
  - SC4524A: Peak efficiency up to 86%
  - SC4524B: Peak efficiency up to 90%
- Hiccup mode & pulse-by-pulse current limit protection



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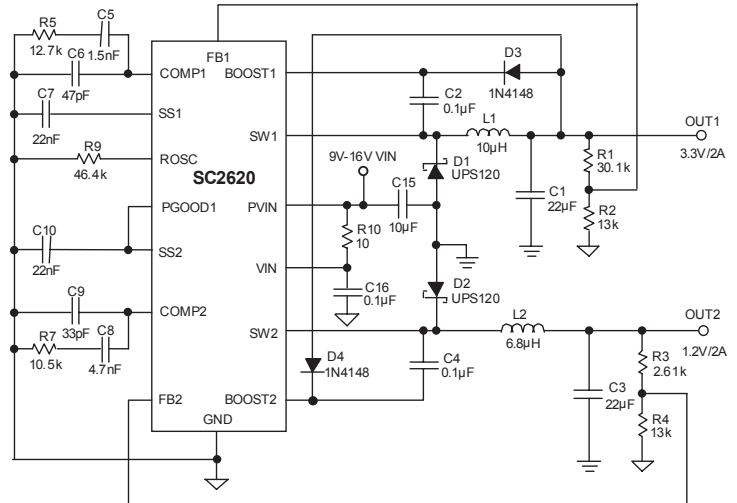


### POWER IT.

#### SC2620 – 2A Asynchronous Dual Step-down Switching Regulator

##### Key Features:

- Input voltage range: 2.8V to 30V
- Wide output voltage range: 1V - 0.90\*Vin
- 2A output current
- Up to 1400kHz/Channel programmable switching frequency
- Current mode control
- Power Good indicator
- Out-of-Phase switching for reduced input voltage ripple
- Cycle-by-Cycle current-limiting
- Independent shutdown/Soft-start pin



### POWER IT.

#### Power Management Products - Selector Guide

Part Number	Type	VIN (V)		VOUT (V)		I <sub>OUT</sub> Max (A)	I <sub>sw</sub> Min (A)	(Typical) Shutdown Current (µA)	fsw (kHz)	Package
		Min	Max	Min	Max					
SC196	Single Buck Regulator	2.5	5.5	0.8	~V <sub>IN</sub>	1.5	1.96	0.1	1000	MLPD-10, 3x3x0.6mm
SC339	LDO Controller	4.5	5.5	0.5	3.3	0.02	N/A	0.1	N/A	SOT23-6
SC2440	Dual Buck Regulator	2.8	20	1	0.8* V <sub>IN</sub>	1.7/1.7	2.0/2.0	38	250-2500	TSSOP-16 EDP
SC2620		2.8	30	1	0.9* V <sub>IN</sub>	2/2	2.3/2.3	40	100-1400	SO-16 EDP
SC4211	LDO	1.4	5.5	0.5	V <sub>IN</sub> -V <sub>DROPOUT</sub>	1	N/A	<10	N/A	SO-8 EDP
SC4215A		1.4	5.5	0.5	V <sub>IN</sub> -V <sub>DROPOUT</sub>	2	N/A	<10	N/A	SO-8 EDP
SC4521	Single Buck Regulator	4.4	24	0.8	0.85* V <sub>IN</sub>	2.5	3.5	250	600	SO-8 EDP
SC4524A		3.0	30	1.0	0.80* V <sub>IN</sub>	2	18 (Vin=5V)	<45	200-2000	SO-8 EDP
SC4524B		3.0	16				33 (Vin=12V)			
SC4620		2.3	5.5	0.5	~V <sub>IN</sub>	2.5	1.9	0.2	100-600	MLPQ-20, 4x4mm
SC4624A	2.3	5.5	0.5	~V <sub>IN</sub>	4	<1.9	0.2	200-2000	MLPQ-20, 4x4mm, SO-16 EDP (SC4624)	
SC4538	Single Boost Regulator	2.8	5.5	5.0	40	0.03	N/A	0.1	800	MLPD-UT-8, 2x2mm
SC4539					25					