

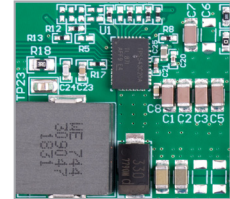
# SWIFT™ DC/DC converters



2019

## SWIFT converters

SWIFT (Switchers With Integrated FETs) converters deliver high-density, high-performance, and easy-to-use power supply solutions. Low on-resistance integrated MOSFETs, tight output voltage regulation accuracy, and an advanced feature-set allow SWIFT DC/DC converters to power the most advanced DSPs and FPGAs in the industry. The entire SWIFT DC/DC converter portfolio is fully supported by WEBENCH® Designer software, evaluation modules, and a variety of technical resources, leading to shorter design cycles and a faster time-to-market. [www.ti.com/swift](http://www.ti.com/swift)



19V IN, 40 A output solution in 30 mm x 30 mm with TPS543C20A.

## Featured devices

Device	V <sub>IN</sub> (V)	V <sub>OUT</sub> (V)	FET Rdson (mΩ)	Switching Frequency (kHz)	Control Mode	Package	Features*
<b>&lt; 7V Input (3.3/5V Rails)</b>							
<b>TPS54218 (2 A)</b>	2.95 to 6	0.8 to 4.5	30 / 30	200 to 2000	CM	3x3 mm QFN	Sync Fsw, Adj. Soft Start
<b>TPS54318 (3 A)</b>	2.95 to 6	0.8 to 4.5	30 / 30	200 to 2000	CM	3x3 mm QFN	Sync Fsw, Adj. Soft Start
<b>TPS54478 (4 A)</b>	2.95 to 6	0.6 to 4.5	30 / 30	200 to 2000	CM	3x3 mm QFN	Sync Fsw, Adj. Soft Start
<b>TPS54678 (6 A)</b>	2.95 to 6	0.6 to 4.5	12 / 12	200 to 2000	CM	3x3 mm QFN	Sync Fsw, Adj. Soft Start
<b>&lt; 30V Input (5/12V Rails)</b>							
<b>TPS54320 (3 A)</b>	4.5 to 17	0.8 to 15	57 / 50	200 to 1200	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start
<b>TPS54424 (4 A)</b>	4.5 to 17	0.6 to 12	14.1 / 6.1	200 to 1600	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start
<b>TPS54622 (6 A)</b>	4.5 to 17	0.6 to 15	26 / 19	200 to 1600	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start
<b>TPS54623 (6 A)</b>	4.5 to 17	0.6 to 15	26 / 19	200 to 1600	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start, Eco-Mode
<b>TPS53513 (8 A)</b>	4.5 to 18	0.6 to 5.5	13.8 / 5.9	250 to 1000	D-CAP3™	3.5x4.5 mm QFN	Selectable Soft Start, ILIM, Eco-Mode
<b>TPS54824 (8 A)</b>	4.5 to 17	0.6 to 12	14.1 / 6.1	200 to 1600	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start
<b>TPS54020 (10 A)</b>	4.5 to 17	0.6 to 5	8 / 6	200 to 1200	CM	3.5x3.5 mm QFN	Sync Fsw, Track, Adj. Soft Start, Eco-Mode, 180° Out of Phase, ILIM
<b>TPS53515 (12 A)</b>	8 to 14	0.5 to 2	27 / 6.8, 27 / 9.3	4000 to 10000	COT	3.5x4 mm QFN	Sync Fsw, Selectable Soft Start, ILIM
<b>TPS548A20 (15 A)</b>	4.5 to 18	0.6 to 5.5	13.8 / 5.9	250 to 1000	D-CAP3	3.5x4.5 mm QFN	Selectable Soft Start, ILIM, Eco-Mode
<b>TPS548B22 (25 A)</b>	4.5 to 20	0.6 to 5.5	9.9 / 4.3	250 to 1000	D-CAP3	3.5x4.5 mm QFN	Selectable Soft Start, ILIM, Eco-Mode
<b>TPS543B20 (25 A)</b>	4.5 to 18	0.6 to 5.5	4.1 / 1.9	425 to 1050	D-CAP3	5x7 mm QFN	Selectable Soft Start, RS, UVLO Adj., ILIM, Eco-Mode
<b>TPS543C20 (40 A)</b>	4 to 19	0.6 to 5.5	4.1 / 1.9	300 to 2000	ACM	5x7 mm QFN	Sync Fsw, Selectable Soft Start, RS, ILIM, Int. Comp, Stackable 2x
<b>TPS548D22 (40 A)</b>	4 to 16	0.6 to 5.5	3 / 0.9	300 to 2000	ACM	5x7 mm QFN	Sync Fsw, Selectable Soft Start, RS, ILIM, Int. Comp, Stackable 2x
<b>SWIFT with PMBus™</b>							
<b>TPS53915 (12 A)</b>	4.5 to 18	0.6 to 5.5	13.8 / 5.9	250 to 1000	D-CAP3	3.5x4.5 mm QFN	Selectable Soft Start, ILIM, Eco-Mode
<b>TPS549A20 (15 A)</b>	4.5 to 20	0.6 to 5.5	9.9 / 4.3	250 to 1000	D-CAP3	3.5x4.5 mm QFN	Selectable Soft Start, ILIM, Eco-Mode
<b>TPS544B20 (20 A)</b>	4.5 to 18	0.6 to 5.5	4.5 / 2.0	250 to 1000	D-CAP™, D-CAP2™	5x7 mm QFN	RS, Telemetry, Adj. Soft Start, ILIM
<b>TPS544B25 (20 A)</b>	4.5 to 18	0.6 to 5.5	5.5 / 2.0	250 to 1000	VM	5x7 mm QFN	Sync Fsw, Selectable Soft Start, ILIM, Telemetry, RS
<b>TPS549B22 (25 A)</b>	4.5 to 18	0.6 to 5.5	4.1 / 1.9	315 to 1125	D-CAP3	5x7 mm QFN	Selectable Soft Start, RS, UVLO Adj., ILIM, Eco-Mode
<b>TPS544C20 (30 A)</b>	4.5 to 18	0.6 to 5.5	4.5 / 2.0	250 to 1000	D-CAP, D-CAP2	5x7 mm QFN	RS, Telemetry, Adj. Soft Start, ILIM
<b>TPS544C25 (30 A)</b>	4.5 to 18	0.5 to 5	5.5 / 2.0	200 to 1000	VM	5x7 mm QFN	Sync Fsw, Selectable Soft Start, ILIM, Telemetry, RS
<b>TPS546C23 (35 A)</b>	4.5 to 18	0.35 to 5.5	3.2 / 1.4	200 to 1000	VM	5x7 mm QFN	Sync Fsw, Selectable Soft Start, ILIM, Telemetry, RS, Stackable 2x
<b>TPS549D22 (40 A)</b>	1.5 to 16	0.6 to 5.5	2.9 / 1.2	315 to 1125	D-CAP3	5x7 mm QFN	Track, Selectable Soft Start, ILIM, Eco-Mode, RS

All highlighted SWIFT converters feature EN and PG pins for easy power rail sequencing.

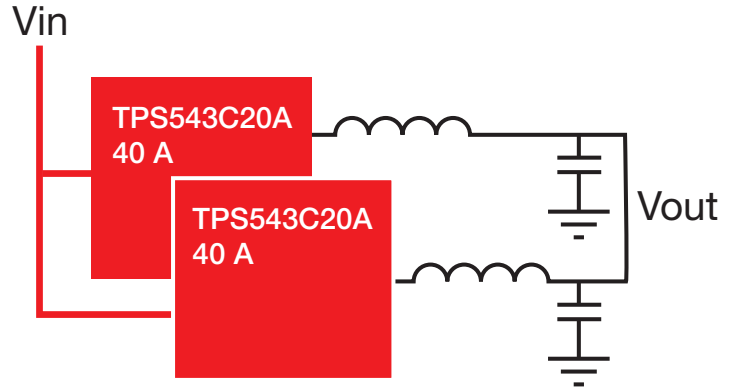
New devices are listed in bold red.

To learn more about SWIFT converters or to see the entire portfolio, visit [www.ti.com/swift](http://www.ti.com/swift)

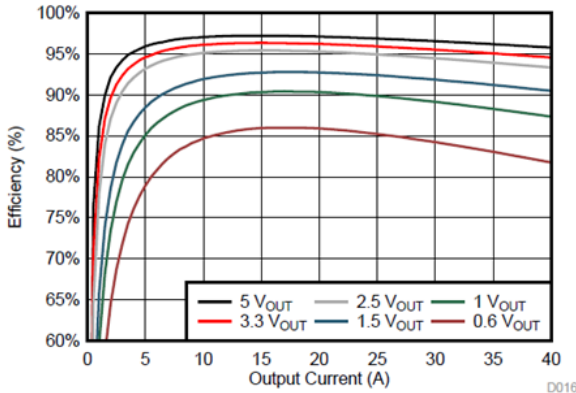
## Featured device – TPS543C20A

### 40A stackable step-down SWIFT converter with internal compensation

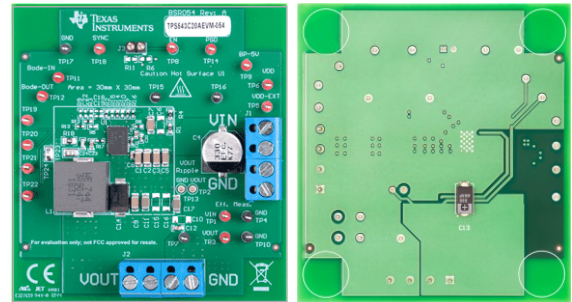
- 4 V to 16 V input voltage
- Stack 2 converters to provide up to 80 A
- 0.6 V to 5.5 V output with 0.5% reference voltage accuracy
- Fast transient response with fixed frequency control
- High power density and efficiency



Stack two TPS543C20A for up to 80 A Iout



TPS543C20A efficiency vs output current



TPS543C20AEVM-054 - 12 Vin, 0.9 Vout at Iout  
Size optimized layout for high-density point of load power.  
Clamshell layout with inductor on top layer and IC on bottom layer.

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## Glossary

<b>PG</b>	Power good pin	<b>D-CAP™</b>	Adaptive on-time control for fast transient response
<b>EN</b>	Enable pin	<b>D-CAP2™</b>	D-CAP for ceramic capacitors
<b>Sync Fsw</b>	Synchronizable frequency to external clock	<b>D-CAP3™</b>	D-CAP2 with higher output voltage accuracy
<b>Track</b>	Tracking pin for sequencing	<b>VM</b>	Voltage mode control
<b>Ext. Comp</b>	External compensation	<b>CM</b>	Current mode control
<b>ILIM</b>	Adjustable current limit	<b>Telemetry</b>	Monitors voltage, current, and temperature
<b>Eco-Mode™</b>	High light-load efficiency	<b>ACM</b>	Advanced current mode
<b>RS</b>	Remote sense		

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