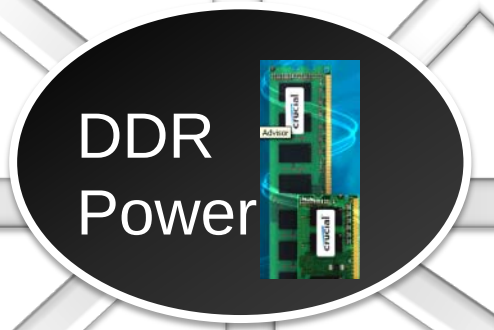
Computing DC-DC
DDR Power Solutions Portfolio

Highest-current LDO
3.3VIN – 3A
VTT
DDR2/DDR3/DDR3L/LPDDR3
TPS51200

Simplest LDO
5VIN - 3A
VTT
DDR2
TPS51100

Smallest LDO
Most Price Competitive
3.3V/5VIN - 2A
VTT
DDR3/DDR3L/LPDDR3
TPS51206

PWM + LDO
Most optimized for bulk caps
VDDQ and VTT
DDR3/DDR3L/LPDDR3
TPS51216



iFET
Highest-current/efficiency
6A Switcher
VTT
DDR3/DDR3L/LPDDR3
TPS53317

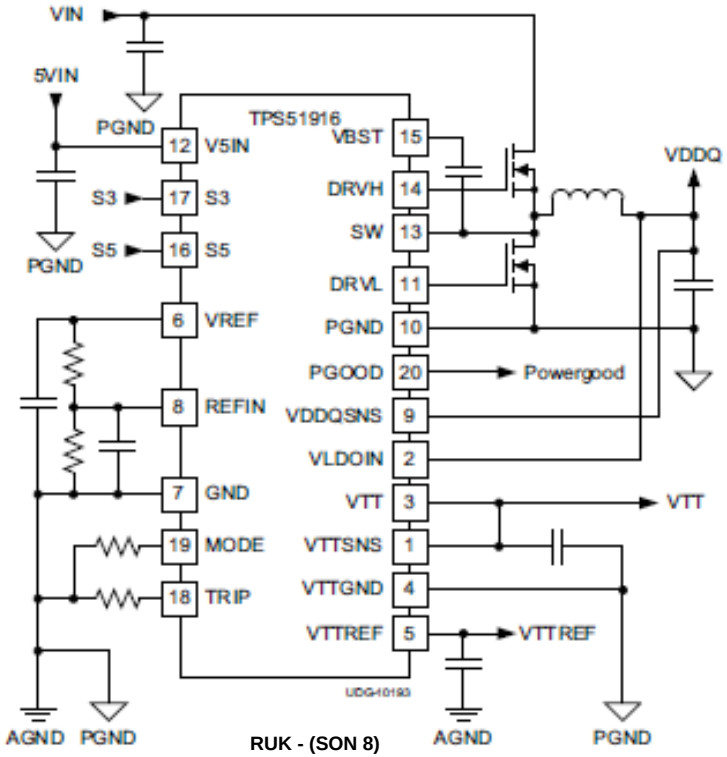
PWM + LDO
Highest Power Density
Lowest BOM cost
VDDQ and VTT
DDR3/DDR3L/LPDDR3
TPS51916

PWM + LDO
Industrial temp range
VDDQ and VTT
DDR2/DDR3/DDR3L
TPS59116

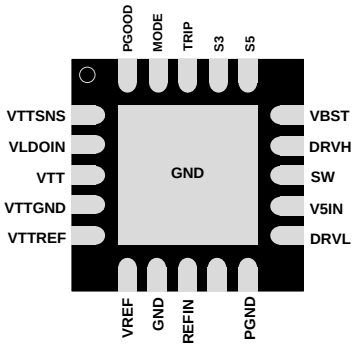
PWM + LDO
Highest volume
Most Flexible
VDDQ and VTT
DDR2/DDR3/DDR3L
TPS51116

Texas Instruments

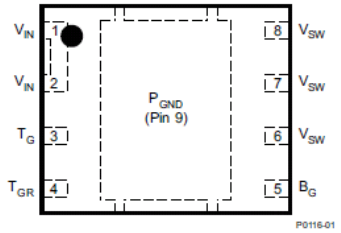
TPS51916 + PowerBlock = the world's most dense DDR power solution <20mm²



RUK - (SON 8)
3mm x 3mm
Top View



Top View



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DDR Power Solution Portfolio

	TPS51916	TPS51216	TPS51206	TPS51116	TPS51100	TPS51200
	Complete DDR2, DDR3 and DDR3L Power Solution	**Complete DDR2, DDR3 and DDR3L Power Solution**	**2-A Peak Sink/Source DDR Termination Regulator with VTTREF Buffered Reference DDR2, DDR3 and DDR3L**	**Complete DDR2, DDR3 Power Solution**	**Source-Sink DDR Termination Regulator**	**Source-Sink DDR Termination Regulator**
VIN	3V to 28V	3V to 28V	3.3V to 5V	3V to 28V	4.75V to 5.25V	0.3V to 3.6V
# outputs	4, VDDQ, VTT, VTTREF and 1P8VREF	4, VDDQ, VTT, VTTREF and 1P8VREF	2, VTT and VTTREF	3, VDDQ, VTT and VTTREF	1 VTT	1 VTT
Fsw (kHz)	300/400/500/670	300/400	N/A	400	N/A	N/A
Control topology	D-CAP and D-CAP2	D-CAP	LDO	D-CAP and D-CAP+	LDO	LDO
Compensation	No comp is required.	No comp is required.	N/A	Internal and external comp	N/A	N/A
DDR compatibility	DDR2, DDR3, DDR3L, LPDDR3	DDR2, DDR3, DDR3L, LPDDR3	DDR, DDR2, DDR3, DDR3L, LPDDR3 VTT Memory Termination	DDR1, DDR2, DDR3, DDR3L	DDR, DDR2 VTT Memory Termination	DDR, DDR2, DDR3, and DDR3L, LPDDR3 VTT Memory Termination
VTT referencing scheme	Reference to VTTREF and trim option to 1/2*VDDQ	Reference to VTTREF and trim option to 1/2*VDDQ		Fixed reference to VTTREF	Integrated Divider Tracks 0.5 VDDQSNS for VTT and VTTREF	REFIN Input Allows for Flexible Input Tracking Either Directly or Through Resistor Divider
VTT output cap	1 x 10uF or 2 x 10uF	1 x 10uF or 2 x 10uF	N/A	2 x 10uF	N/A	N/A
VTT current	+/-1A TDC and +/-2A for OCL	+/-1A TDC and +/-2A for OCL	N/A	+/-2A TDC and +/-3A for OCL	N/A	N/A
VTT accruacy	0A, +/-15mV to VTTREF; +/1A, +/-20mV to VTTREF	0A, +/-15mV to VTTREF; +/1A, +/-20mV to VTTREF	N/A	0A, +/-20mV to VTTREF; +/1A, +/-30mV to VTTREF; +/-2A, +/-40mV to VTTREF	N/A	N/A
S3/S5 support	Yes	Yes	Yes	Yes	Yes	Yes
PGOOD	Yes	Yes	No	Yes	No	Yes
Forced Continuous Conduction Mode	Yes	Yes	N/A	No	N/A	N/A
Power save	Auto skip	Auto skip	N/A	Auto skip	N/A	N/A
Support all ceramic caps	Yes	Yes	Yes	Yes	Yes	Yes
Soft Start method	REFIN control	REFIN control	N/A	Two step OCL limit	N/A	N/A
Bootstrap support	10ohm Internal switch	10ohm Internal switch	N/A	Internal diode	N/A	N/A
OVP/UVP	Yes	Yes	N/A	Yes	N/A	N/A
Package	20pin 3x3mm RUK, 0.4mm pitch and 0.75mm height	20pin 3x3mm RUK, 0.4mm pitch and 0.75mm height	2mm x 2mm SON10 PowerPAD	20pin TSSOP	MSOP 10 with PowerPad	3mm x 3mm SON10

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