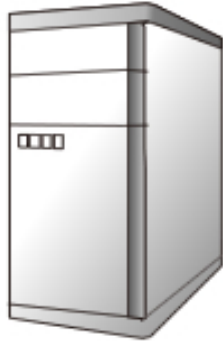


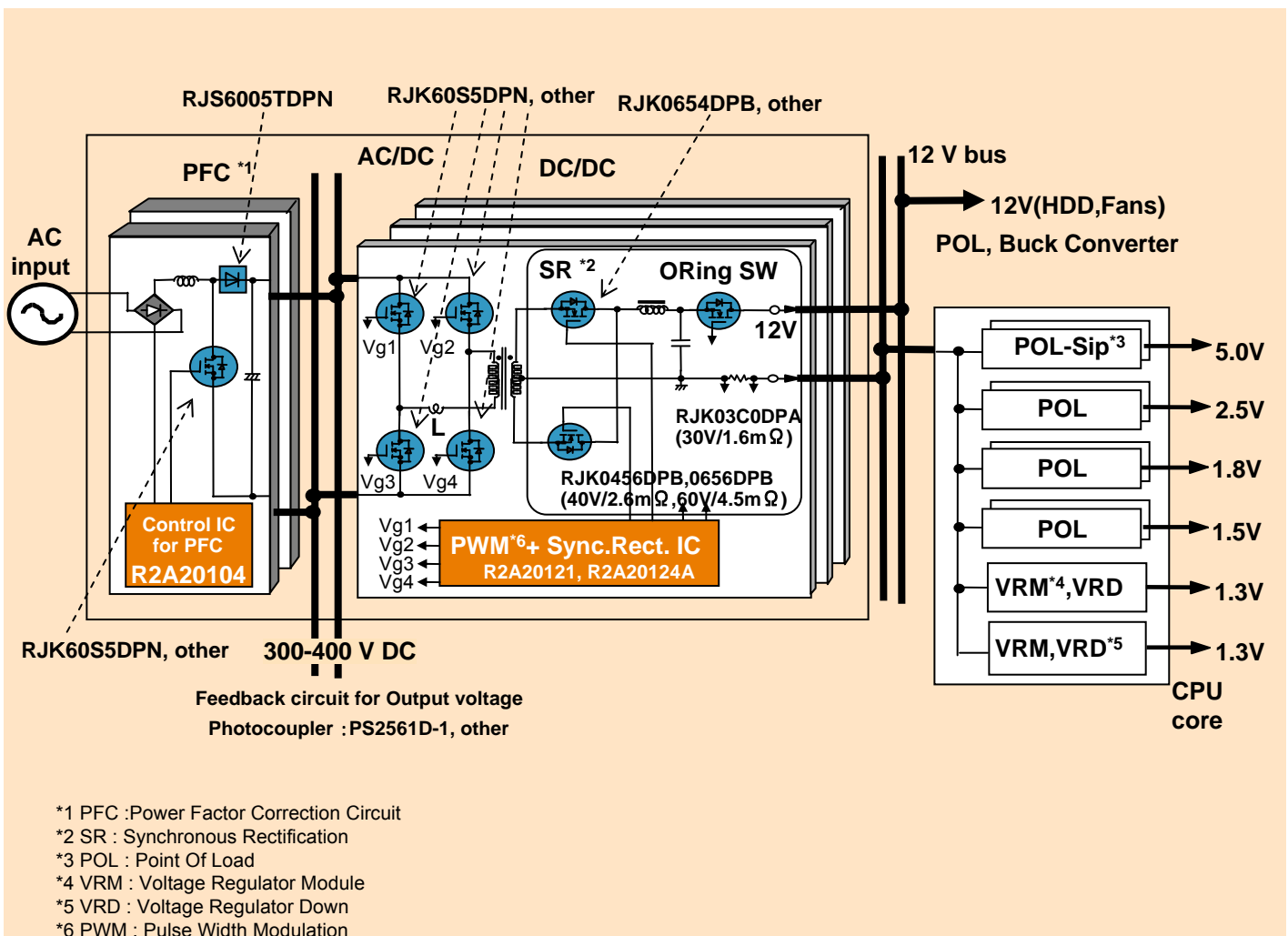
Overview



PC servers and commercial servers both utilize distributed power supplies. The power supplies for large servers consist of three main sections; a block that converts external AC into DC; a block that boosts the power efficiency and a POL block. The POL converts the DC (12 V, 24 V, or 48 V) and distributed the required voltages by the individual circuit blocks to each PCB in the system.

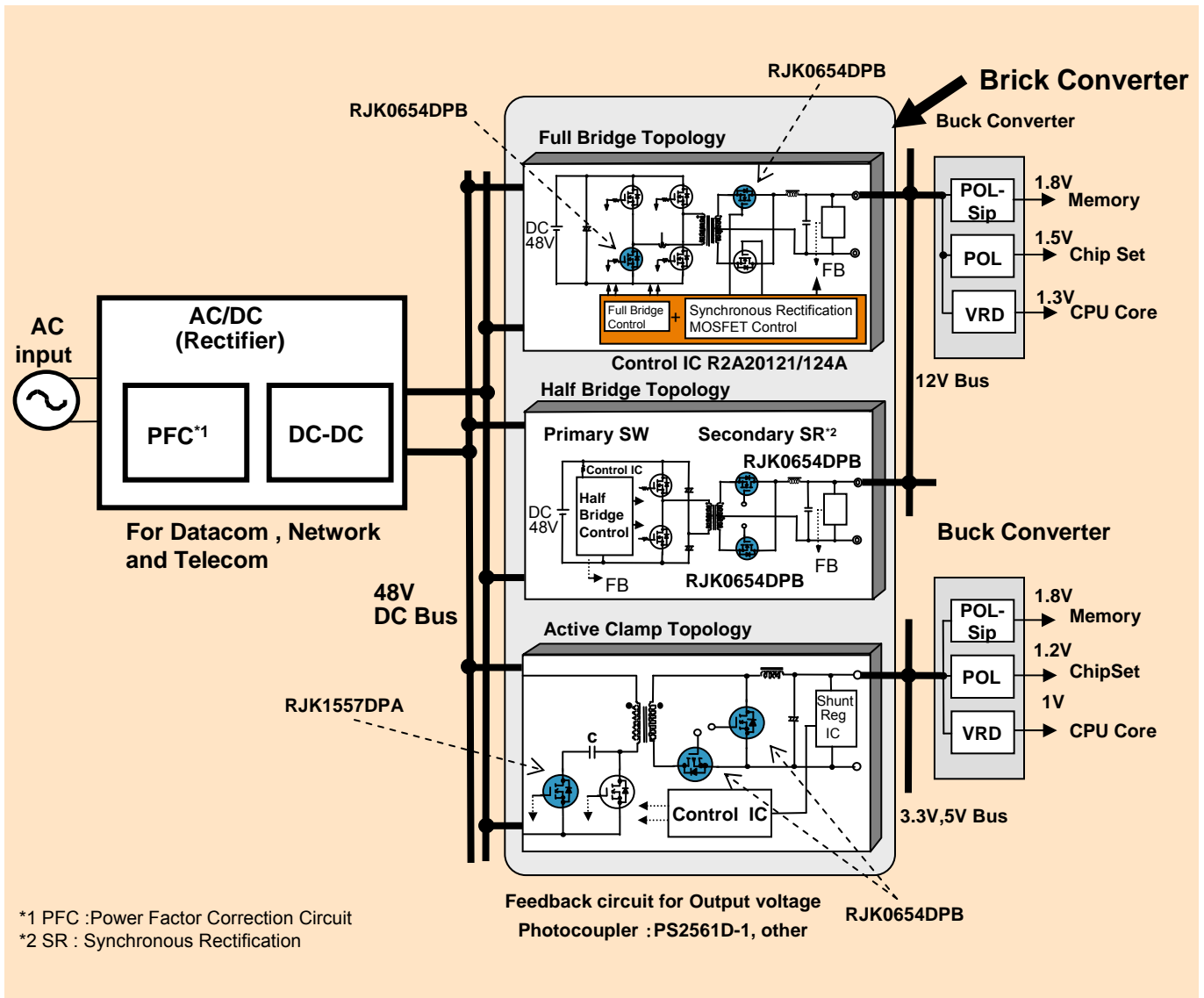
Renesas meets the requirements of customers developing distributed power supplies by offering an extensive lineup of products including PFC devices; devices for use in insulated switching power supplies; PWM control devices; power MOSFET devices and IGBTs.

System Block Diagram



System Block Diagram

■ For Insulated DC/DC Power Supply (Brick Converter Example)



Recommended Products

As of March 2012

Block	Semiconductor device		Recommended products	Features, etc.	
PFC	PFC IC		R2A20104/114	Continuous conduction, interleaving	
			R2A20112A	Critical conduction, interleaving	
			R2A20131 *	Continuous conduction, single, improving efficiency at light-load	
			R2A20132	Critical conduction, interleaving; improving efficiency at light-load	
PFC, DC/DC	SJ MOSFET		RJK60S5DPK-MO	600V/20A 150mΩtyp.	
			RJK60S8DPK-MO	600V/55A 45mΩtyp.	
	SiC-SBD		RJS6004TDPN-EJ	600V/10A $V_F=1.5V$ typ., trr=15ns	
			RJS6005TDPN-EJ	600V/15A $V_F=1.5V$ typ., trr=16ns	
	Si-FRD		RJU60C Series	600V $V_F=1.2V$ typ., trr=50ns	
			RJU605 * Series	600V $V_F=2.5V$ typ., trr=25ns	
	FET		RJK5020DPK	500 V/40A 115mΩ	
			RJK6015DPK	600 V/21A 360mΩ	
PWM + Sync. Rect.	PWM + Sync. Rect. IC		R2A20121/124A	Synchronous rectification phase shift full bridge control	
VRM, DC/DC Converter Synchronous Rectifier	FET	Bus Converter $V_{in}=36\sim75V$ $V_{out}=12V$	Pout=120~240W	RJK0654DPB	Secondary for Full (Half) Bridge: 60 V
				RJK0854DPB	Secondary for Full (Half) Bridge: 80 V
			Pout=300~700W	RJK1055DPB	Primary for Full (Half) Bridge: 100 V
				RJK1056DPB	Primary for Full (Half) Bridge: 100 V
		Isolated Converter $V_{in}=38\sim55V$ $V_{out}=3.3V, 5V$	Pout=30~90W	RJK0454DPB	Secondary for Forward Active Clamp: 40 V
				RJK1557DPA	Primary for Forward Active Clamp: 150 V
			Pout=100~200W	RJK0455DPB	Secondary for Half Bridge: 40 V
				RJK0456DPB	Secondary for Half Bridge: 40 V
	PA Converter $V_{in}=36\sim75V$ $V_{out}=28V$	Pout=300~500W	RJK0856DPB	Primary for Half Bridge: 80 V	
			RJK1055DPB	Secondary for Full Bridge: 100 V	
			RJK1056DPB	Primary for Full Bridge: 100 V	
		PWM control IC		HA16150	$V_{cc}=20V$, Push-pull/single-end output switching
	Feedback circuit for Output voltage	Photocoupler(standard)		PS2381-1 New	High isolation voltage(5kVr.m.s.), 4p-LSOP, Ta=115°C
				PS2561D Series	High isolation voltage(5kVr.m.s.), 4p-DIP, Ta=110°C
				PS2761B Series	High isolation voltage(3.75kVr.m.s.), 4p-SOP, Ta=110°C
				PS2861B Series	High isolation voltage(2.5kVr.m.s.), 4p-SSOP, Ta=110°C
POL	POL-Sip(Integrated Power Device) *Control IC + MOSFETs		R2J20702NP	QFN56(8x8mm)	
			R2J20751NP	QFN40(6x6mm)	

* = Under development

Related Application Notes/Sample Code

Title	Document No.
R2A20104/114 Series Application Note *	-
R2A20112A Application Note *	-
R2A20131 Application Note *	-
R2A20132 Application Note *	-
R2A20124A Application Note *	-

*: Please contact your sales representative or contact us directly.

Related Boards

Name	Part No.
R2A20104/114 Evaluation Board *	-
R2A20112A Evaluation Board *	-
R2A20131 Evaluation Board *	-
R2A20132 Evaluation Board *	-
R2A20124A Evaluation Board *	-

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