

## AC/DC Converter IC Guidelines

These Application Notes introduce our AC/DC ICs according to power supply method, output power, function, and other main parameters. Please select the ideal model based on these factors.

### <AC/DC IC Classifications>

ROHM AC/DC ICs are classified into the following 3 categories (See Fig. 1).

- 1) **PWM Method**
  - 1a) Control ICs
  - 1b) Control ICs with Built-In MOSFET
- 2) **Quasi-Resonant Control ICs**
- 3) **Complex PFC+Quasi-Resonant (QR) ICs**

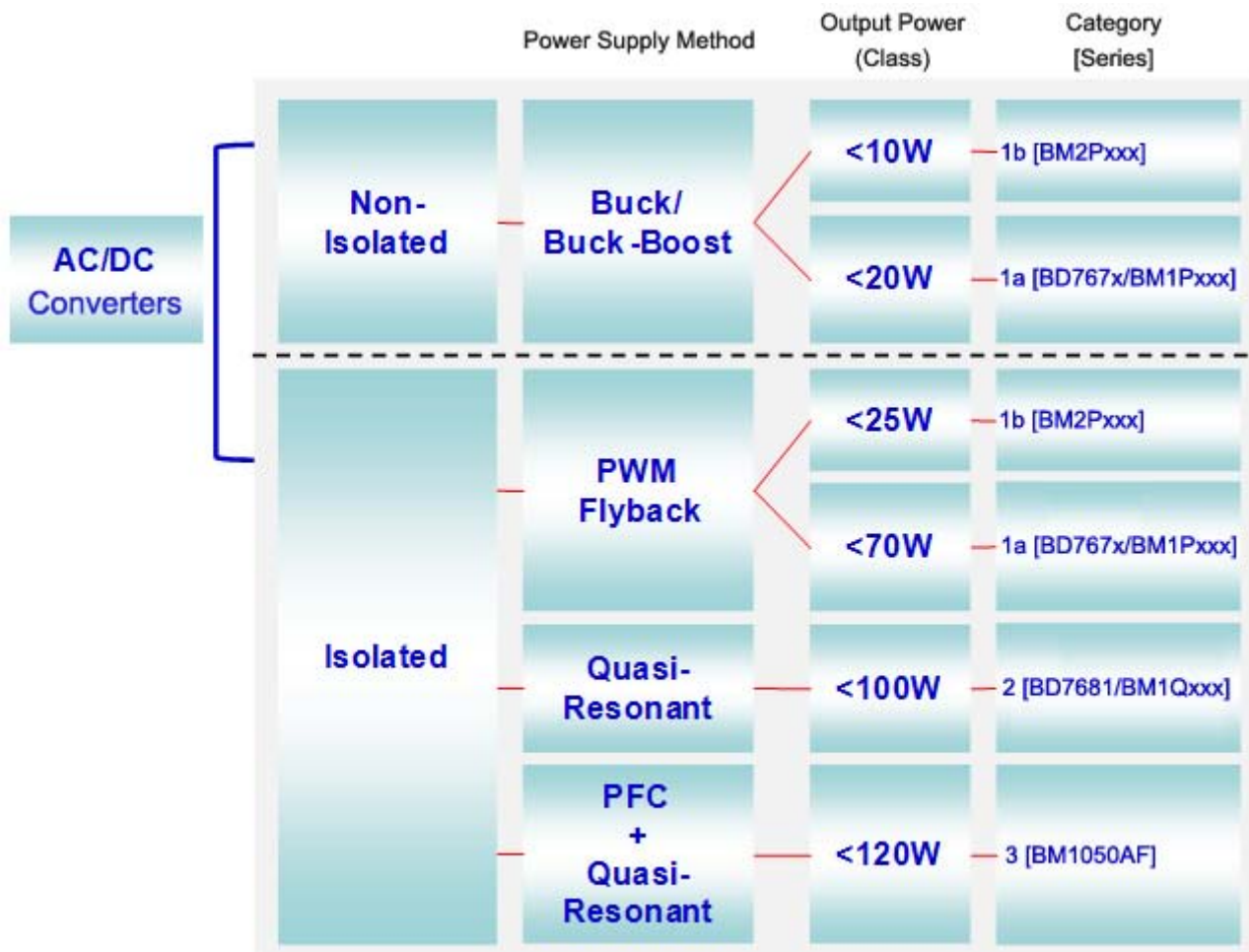
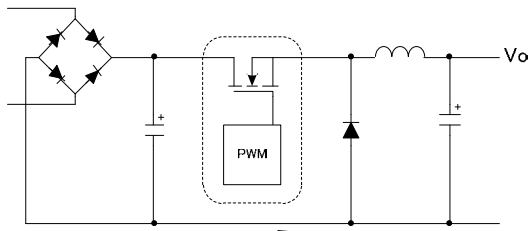


Figure 1. AC/DC Converter Classification Chart

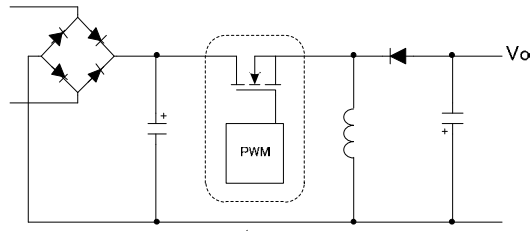
<Application Circuit Diagrams>

Non-Isolated Type

Buck Converter

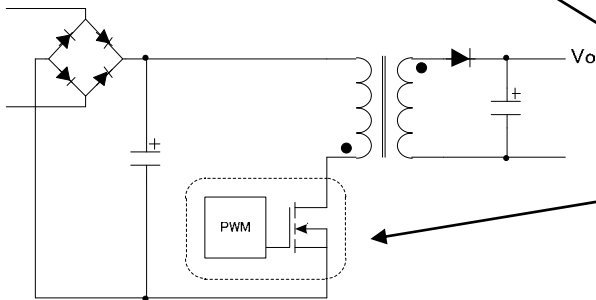


Buck-Boost Converter



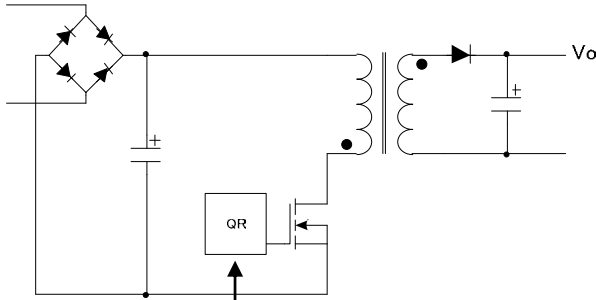
Isolated Type

PWM Flyback Converter



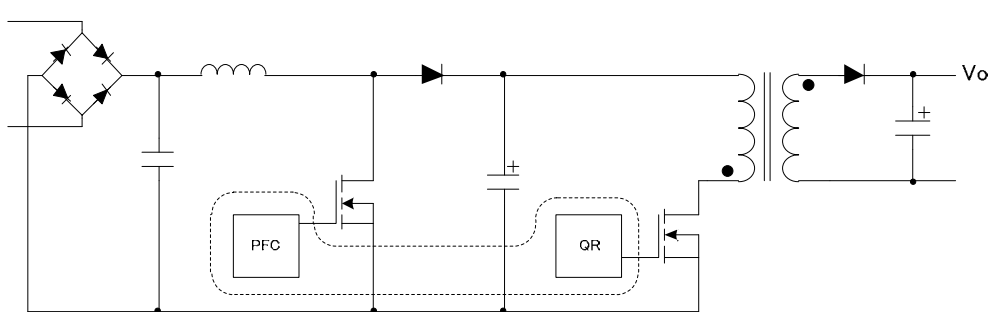
PWM Control IC  
or  
PWM Control IC with Built-In MOSFET

Quasi-Resonant Converter



QRControl IC

PFC+QR converter



PFC+QR Control IC

<AC/DC ICLineup>

1a) PWM Control ICs

Part No.	Supply Voltage (V)	Frequency (kHz)	Peak Output Current (A)	Startup Current (uA)	Functions							Package
					OLP	Vcc OVP	Brownout	MASK	Input Correction	External Stop	Gate Clamp	
BD7671FVM	9.5~22	65	±0.5	30	Auto-reset	Auto-reset	None	None	None	Included	None	MSOP8
BD7671FJ	9.5~22	65	±1	30	Auto-reset	Auto-reset	None	None	None	Included	None	SOP-J8
BD7672AG	8.5~25	65	±1	20	Auto-reset	Latch stop	None	None	None	Included	None	SSOP6
BD7673G	8.5~25	65	±1	20	Latch stop	Latch stop	None	None	None	Included	None	SSOP6
BD7677FJ	8.5~25.5	65	-0.5/+1	20	Auto-reset/ Latch stop	Latch stop	Included	Included	Included	None	None	SOP-J8
BM1P061FJ	8.9~26	65	±1	Startup circuit built in	Auto-reset	Auto-reset	Included	None	Included	None	12V	SOP-J8
BM1P062FJ	8.9~26	65	±1	Startup circuit built in	Auto-reset	Latch stop	Included	None	Included	None	12V	SOP-J8
BM1P101FJ	8.9~26	100	±1	Startup circuit built in	Auto-reset	Auto-reset	Included	None	Included	None	12V	SOP-J8
BM1P102FJ	8.9~26	100	±1	Startup circuit built in	Auto-reset	Latch stop	Included	None	Included	None	12V	SOP-J8

1b) PWM Control ICs with Built-In MOSFET

Part No.	Supply Voltage (V)	Frequency (kHz)	Startup Current (uA)	MOSFET		Max. Output Power 85-265 Vac(*1)	Functions					Package
				RDS(ON)(max)	IDP(max)		OLP	Vcc OVP	Brownout	Input Correction	External Stop	
EM2P051F	8.9~26	65	Startup circuit built in	5.5Ω	2.6A	8W	Auto-reset	Latch stop	Included	Included	None	SOP8
EM2P052F								Auto-reset				
EM2P053F								Latch stop	None			
EM2P054F								Auto-reset				
EM2P091F				12Ω	1.3A	5W		Latch stop	Included			
EM2P092F								Auto-reset				
EM2P093F								Latch stop	None			
EM2P094F								Auto-reset				
EM2P011				2.0Ω	1.04A	20W		Latch stop	Included			
EM2P012								Auto-reset				
EM2P013								Latch stop	None			
EM2P014								Auto-reset				
EM2P031				3.6Ω	5.4A	15W		Latch stop	Included			
EM2P032								Auto-reset				
EM2P033								Latch stop	None			
EM2P034								Auto-reset				
EM2P051				5.5Ω	2.6A	10W		Latch stop	Included			
EM2P052								Auto-reset				
EM2P053								Latch stop	None			
EM2P054								Auto-reset				
EM2P091	12Ω	1.3A	7W	Latch stop	Included							
EM2P092				Auto-reset								
EM2P093				Latch stop	None							
EM2P094				Auto-reset								

\*1: These are the approximate values of an isolated circuit using a transformer. The output power must be limited based on circuit configuration and ambient temperature.

## 2) Quasi-Resonant Control ICs

Part No.	Supply Voltage (V)	Max. Frequency (kHz)	Peak Output Current (A)	Startup Current (uA)	Functions							Package
					OLP	Vcc OVP	Brownout	MASK	Input Correction	External Stop	Gate Clamp	
ED7681FJ	8.5~25.5	120	-0.5/+1	20	Auto-reset /Latch stop	Latch stop	Included	Included	Included	None	None	SOP~8
EM1Q001FJ	8.9~26	120	-0.5/+1	Startup circuit built in	Auto-reset	Auto-reset	None	None	Included	None	12V	SOP~8
EM1Q002FJ	8.9~26	120	-0.5/+1	Startup circuit built in	Auto-reset	Latch stop	None	None	Included	None	12V	SOP~8

## 3) Complex PFC + Quasi-Resonant IC

Part No.	Supply Voltage (V)	Features	Package
BM1050AF	8.5~25.5	General: Built-in startup circuit, OVP auto-reset/latch stop switching, AC input detection signal output, external stop, PFC ON/OFF, brownout PFC Block: Peak current control, max. power correction, fixed 65kHz frequency, frequency hopping function, high-speed load response, Gate clamp, OLP droop mode QR Block: Max. 120kHz frequency, input correction, Gate clamp, OLP auto-reset	SOP24

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