

Power Electronics

M-Power2B series

A multi chip power device for a Multi-Oscillated Current Resonant type Converter

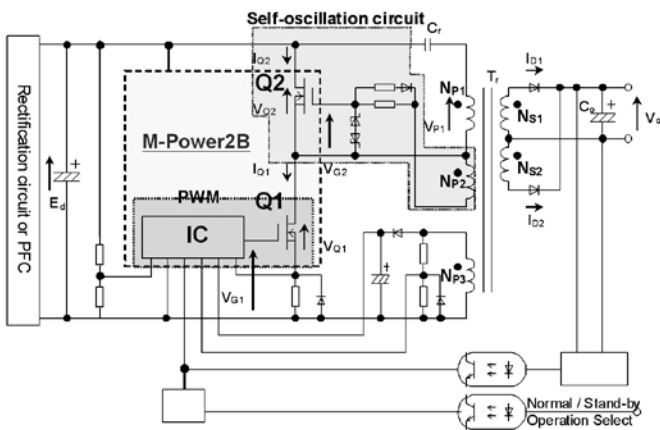
■ Features

- Power efficiency keeps high from a light load to a rated load.
- Low noise is achieved because of soft switching technique.
- Easy to design high reliability SMPS due to various protection function.
- External components drastic reduction from former-model.

■ Applications

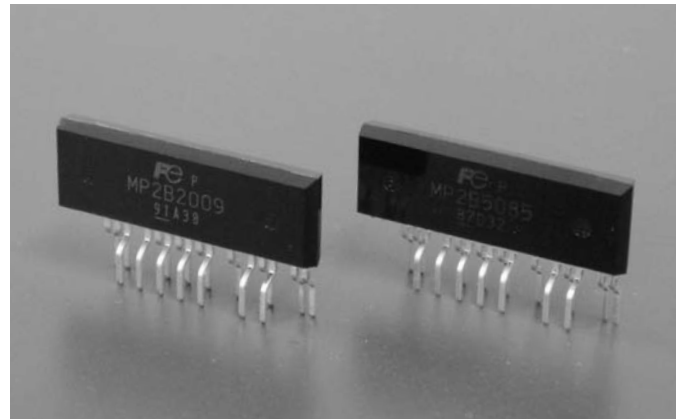
- SMPS for AV equipments (LCD-TV and PDP etc.)
- SMPS for OA equipments (Copier etc.)

■ Circuit Configuration



■ Line-up

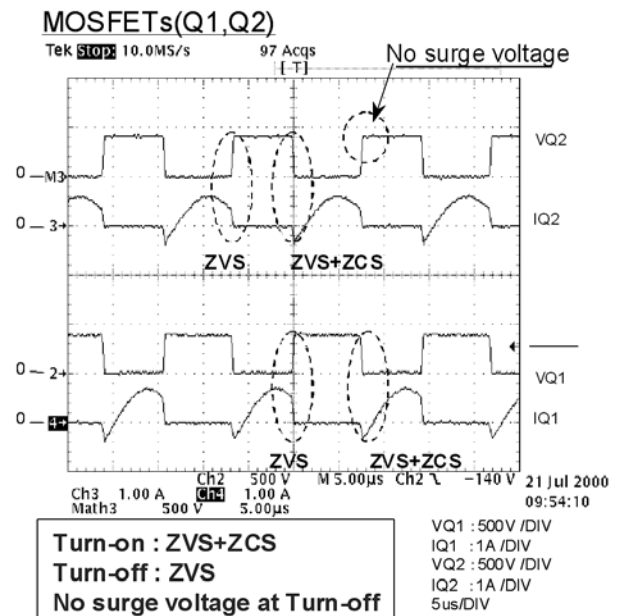
Type name	MOSFET		Control IC	Forming	Sample	Mass Production
	VDS	RDS (on)	VCC (on)			
MP2B5038	500V	0.38Ω	11.6V	F237	Ready	2009/4
MP2B5052	500V	0.52Ω				
MP2B5085	500V	0.85Ω				
MP2B5150	500V	1.50Ω				



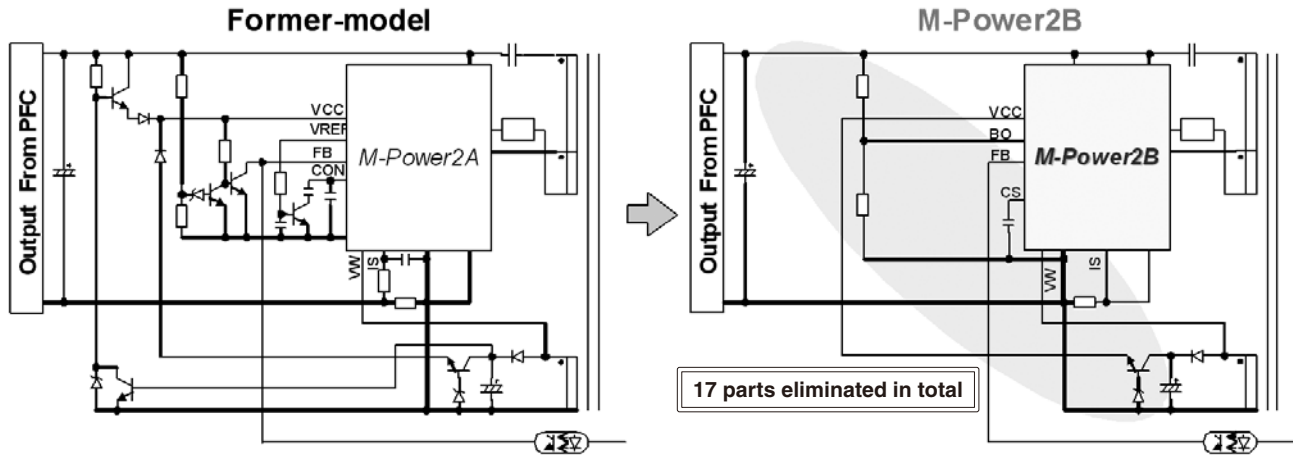
■ Protection Function

- Overcurrent protection, overvoltage protection, low input voltage protection
- High-side MOS short protection, overheat protection

■ Switching Waveforms

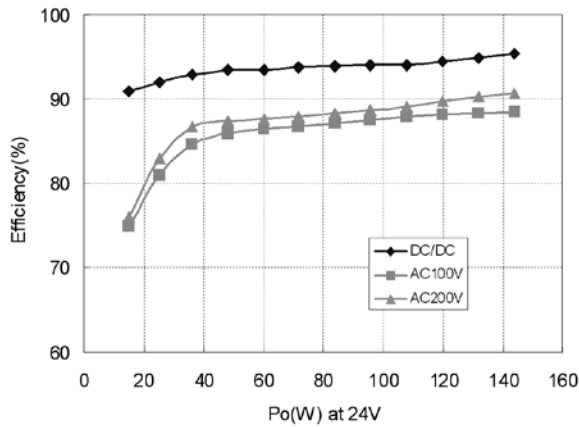


Comparison of external components



* Comparison of primary-side circuit of our demo board

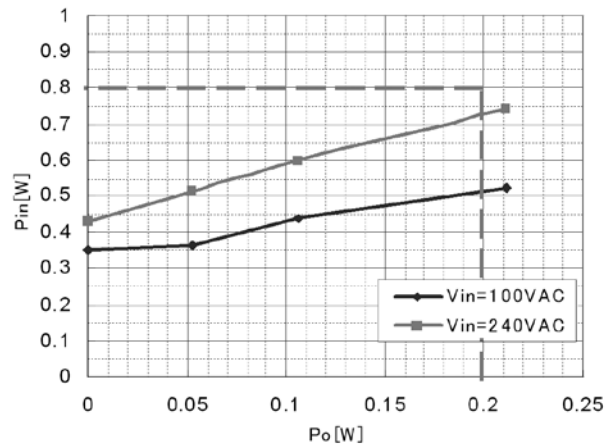
Power Efficiency Characteristic



Output power vs efficiency characteristic

DC/DC 95.3%(Input:385Vdc, Output:24Vdc)
 PFC+DC/DC 88.4%(AC100V, Output:24Vdc)
 90.7%(AC200V, Output:24Vdc)

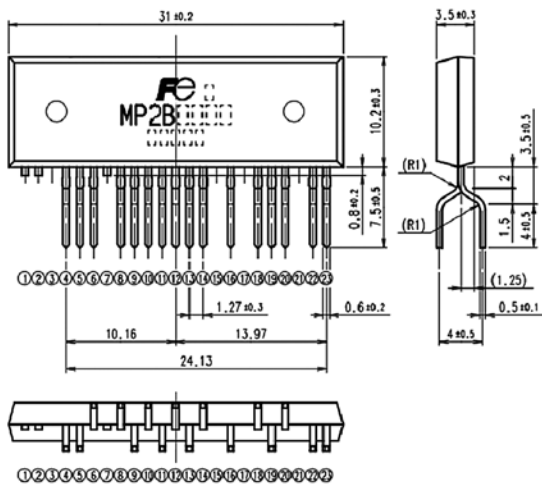
Input power in the stand-by mode



Standby output power vs input power characteristic

PFC+DC/DC 0.5W and below (AC240V, Output: No load)
 0.8W and below (AC240V, Output:0.2W)
 * Board with PFC (PFC is stopped in standby mode)

Outline Figure



Pin assignment

Pin	Symbol	Function
4,5	S1	MOSFET (Q1) source
6	IS	Current detection
8	VOC	Power supply
9	GND	GND
10	VREF	Reference voltage output
11	FB	Input feedback signal for constant voltage control
12	CS	Select the Soft-start duration
13	BO	Brown out detection
14	VW	Q1 turn-on and off timing detection
16	VH	Start-uP Circuit
18,19	D1,S2	Q1 drain
		Q2 source
20	G2	Q2 gate
22,23	D2	Q2 drain