e-Front runners

Power Electronics

M-Power2Bシリーズ
M-Power2B series

複合発振型電流共振回路用マルチチップパワーデバイス
A multi chip power device for a Multi-Oscillated Current Resonant type Converter

■特長　Features

●軽負荷から定格負荷までの広い負荷条件で高効率を実現
●ソフトスイッチング動作により低ノイズを実現
●各種保護機能により信頼性の高い電源を容易に設計可能
●従来モデルに比較して大幅に外付け部品点数を削減

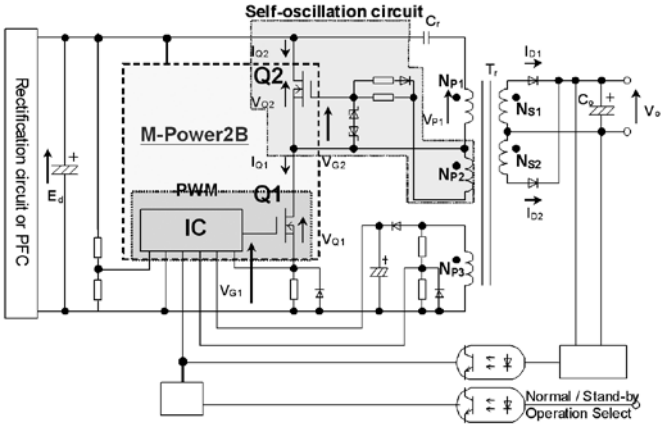
- Power efficiency keeps high from a light load to a rated load.
- Low noise is achieved because of soft switching technique.
- Easy to design high reliability SMPS due to various protection function.
- External components drastic reduction from former-model.

■用途　Applications

●AV機器用電源（LCD-TV, PDP用電源など）
●OA機器用電源（コピー機用電源など）

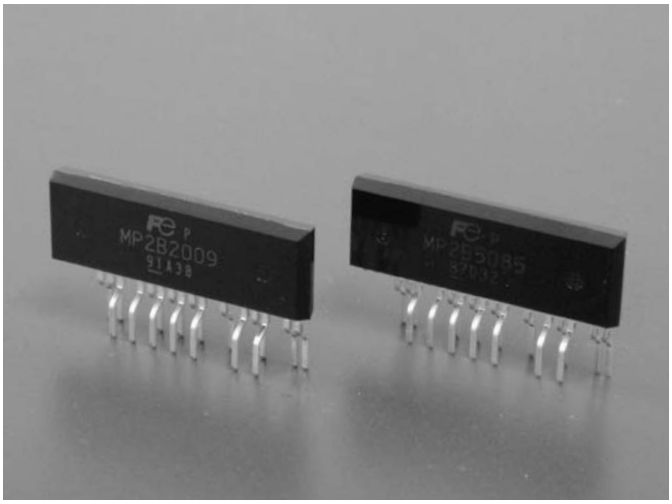
- SMPS for AV equipments (LCD-TV and PDP etc.)
- SMPS for OA equipments (Copier etc.)

■回路構成　Circuit Configuration



■系列表　Line-up

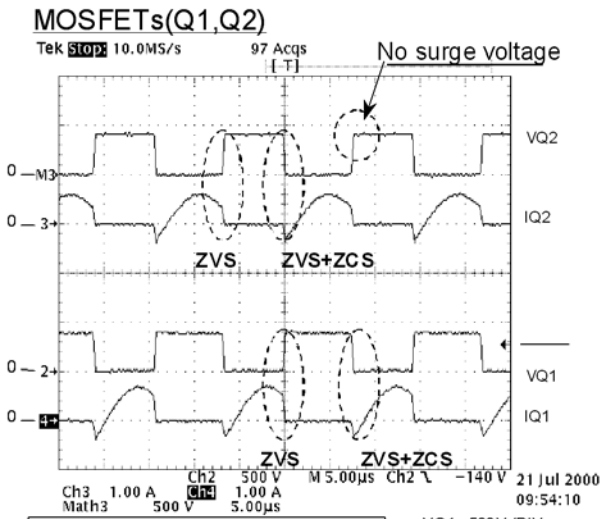
Type name	MOSFET		Control IC	Forming	Sample	Mass Production
	VDS	RDS (on)	VCC (on)			
MP2B5038	500V	0.38Ω	11.6V	F237	Ready	2009/4
MP2B5052	500V	0.52Ω				
MP2B5085	500V	0.85Ω				
MP2B5150	500V	1.50Ω				



■保護機能　Protection Function

●過電流保護, 過電圧保護, 低入力電圧保護
●ハイサイドMOS短絡保護, 過熱保護

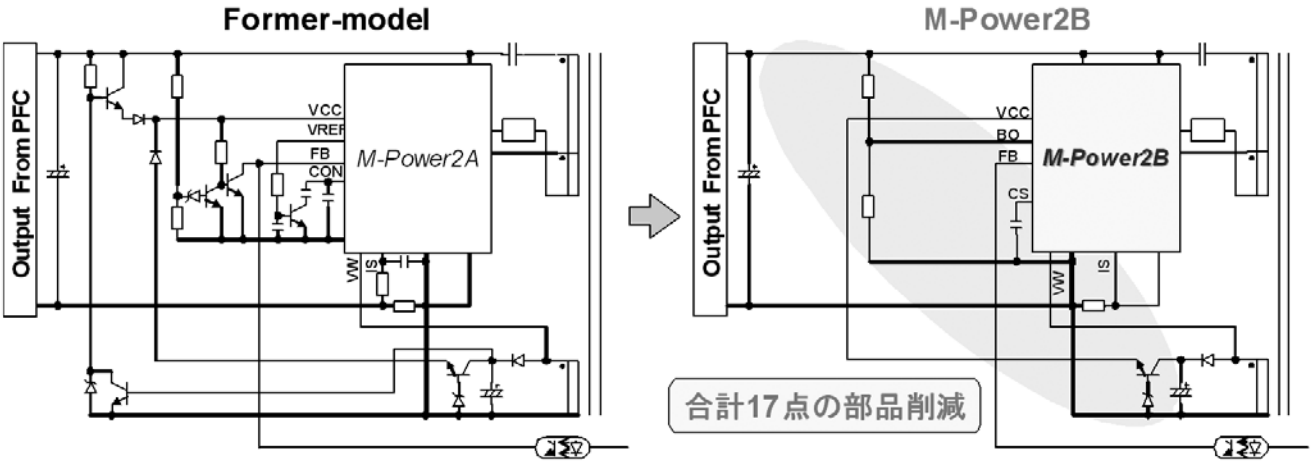
■スイッチング波形　Switching Waveforms



Turn-on : ZVS+ZCS
Turn-off : ZVS
No surge voltage at Turn-off

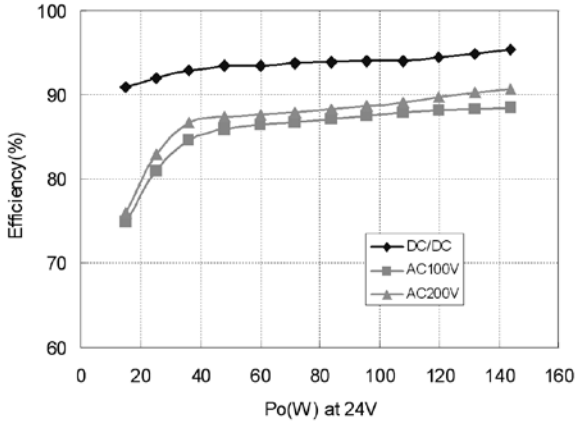
VQ1 : 500V /DIV
IQ1 : 1A /DIV
VQ2 : 500V /DIV
IQ2 : 1A /DIV
5us/DIV

■従来モデルとの比較　Comparison of external components



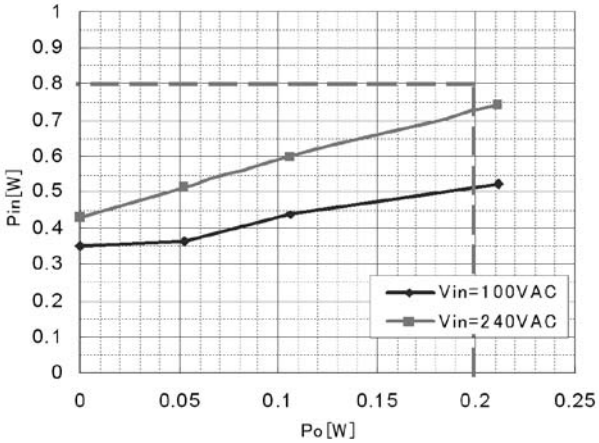
※弊社デモボードにおける１次側回路の比較

■効率特性　Power Efficiency Characteristic



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

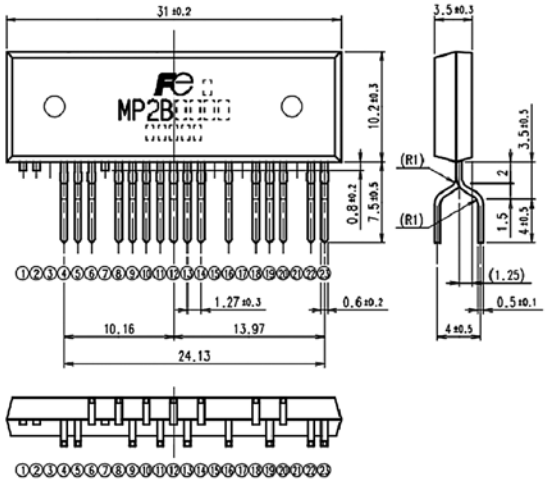
■待機電力特性　Input power in the stand-by mode



待機時出力電力-入力電力特性

PFC+DC/DC 0.5W以下(AC240V, Output: No load)
0.8W以下(AC240V, Output:0.2W)
※PFC搭載基板(待機動作時PFCは動作停止)

■外形図　Outline Figure



■端子記号と機能　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