# **COMPUTING / CONSUMER / GAMES**

# International

## THE POWER MANAGEMENT LEADER

### **IR Advantage:**

- · Simple, powerful solution
- Enables
  - Higher efficiency
  - Higher power density
  - Faster time to market
- Complies with CEC 80plus and 1W standby requirements
- Proprietary "Voltage Level Detection" and 200V HVIC technology
- Direct connection and drive to all 30-200V MOSFETs
- Fast, powerful (7A), accurate, high efficiency operation up to 500kHz
- Independent from primary side
- Operates in all modes (CCM, CRCM, DCM)
- · In 120W laptop adaptor, enables
  - 1% efficiency increase
  - 10°C lower temperature
  - 75% fewer SR components
  - 20% lower SR system cost
- · Enables 'no heatsink' SR designs



SmartRectifier<sup>™</sup> IR1167: Simple, High

**Efficiency Synchronous Rectification** 



For designers of high power flyback and resonant half-bridge converters for Lap- tops, Mini-PCs, LCD & PDP TVs and Games SMPS, the SmartRectifier offers a simple, high efficiency solution for secondary synchronous rectification (SR) in all operational modes and application conditions.

The IR1167 is a secondary control IC with builtin 7A gate drive. Operating independently from the primary side, it uses a proprietary "Voltage Level Detection" technique to minimize wasteful secondary reactive currents and maximize efficiency.

The proprietary 200V HVIC technology allows direct sensing and control of IR's world-class range of Standard- or Logic-Level, 30-200V HEXFET MOSFETs.

# SmartRectifier<sup>™</sup> IR1167: Simple, High Efficiency Synchronous Rectification

- 120W Laptop Adaptor (19.5V, 6.15A) with Current Transformer (CT)and TO-220 synchronous rectification FETs
- Smart Rectifier shows
  1% efficiency improvement
- 10°C lower MOSFET temperature with the same heatsinking
- Reduction in synchronous
  rectification FET, heatsinking
  and control components
  lowers system cost

### Specifications

Flyback Example



Part #	Package	V <sub>CC</sub> (V)	V <sub>FET</sub> (V)	Sw Freq. max (kHz)	Gate Drive +/- (A)	V <sub>GATE</sub> Clamp (V)	Sleep Current max (µA)	RoHS
IR1166SPbF	SO-8	20	<= 200	500	+1/-4	10.7	200	•
IR1167ASPbF	50.8	20	<= 200	500	-2/7	10.7	200	
IR1167BSPbF	30-0	20	<= 200	500	+27-7	14.5	200	•



IR1167 can be used with IR's HEXFET<sup>®</sup> Power MOSFETs to provide the ultimate SmartRectifier chipset for maximum efficiency.

Part #	B <sub>Vdss</sub> (V)	R <sub>DS(on)</sub> mΩ	Package
IRFB3206PbF	60	3.0	TO-220
IRFB3306PbF	60	4.2	TO-220
IRF7855PbF	60	9.4	SO-8
IRFB3207PbF	75	4.1	TO-220
IRFB3307PbF	75	5.8	TO-220
IRF7854PbF	80	13.4	SO-8
IRFB4110PbF	100	4.5	TO-220
IRFB4310PbF	100	7.0	TO-220
IRF7853PbF	100	18.0	SO-8
IRFB4321PbF	150	15.0	TO-220
IRFB4227PbF	200	24.0	TO-220

See www.irf.com for full MOSFET selection