FAIRCHILD
SEMICONDUCTOR®

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KA5Q-Series

Fairchild Power Switch
SMPS for Color Television

Product Brief

✔ **Low EMI and High Efficiency - Quasi Resonant Converter!**
✔ **Burst Mode Operation for Lower Power Consumtion in Standby Mode!**

Features

- Quasi Resonant Converter Controller
- Internal Burst mode Controller for Stand-by mode
- Pulse by pulse current limiting
- Over Current Latch Protection (OCP)
- Over Load Protection (OLP)
- Over Voltage Protection (OVP)
- Internal Thermal Shutdown Protection (TSD)
- Under Voltage Lockout with Hysteresis
- Internal high voltage SenseFET
- Operating frequency (20 ~ 150kHz)
- Auto-restart mode

General Description

The Fairchild Power Switch product family is specially designed for implementing off-line switch mode power supplies (SMPS) with minimal external components. The FPS integrate a high voltage power SenseFET and a current mode PWM Controller IC. Compared to a discrete MOSFET plus controller or RCC switching converter solution, the power switch family can reduce total component count, design size, and weight and at the same time increase efficiency, productivity, and system reliability. Fairchild's KA5Q-series implement a flyback converter using the Quasi-Resonant technique. In this technique, a capacitor is added between the MOSFET drain and source to reduce the dv/dt switching noise (EMI). The KA5Q-series also features burst mode operation to reduce power consumption in stand-by mode. This product family enables cost effective designs of color television power supplies. The KA5Q-series devices are available in TO-220F and TO-3PF packages.

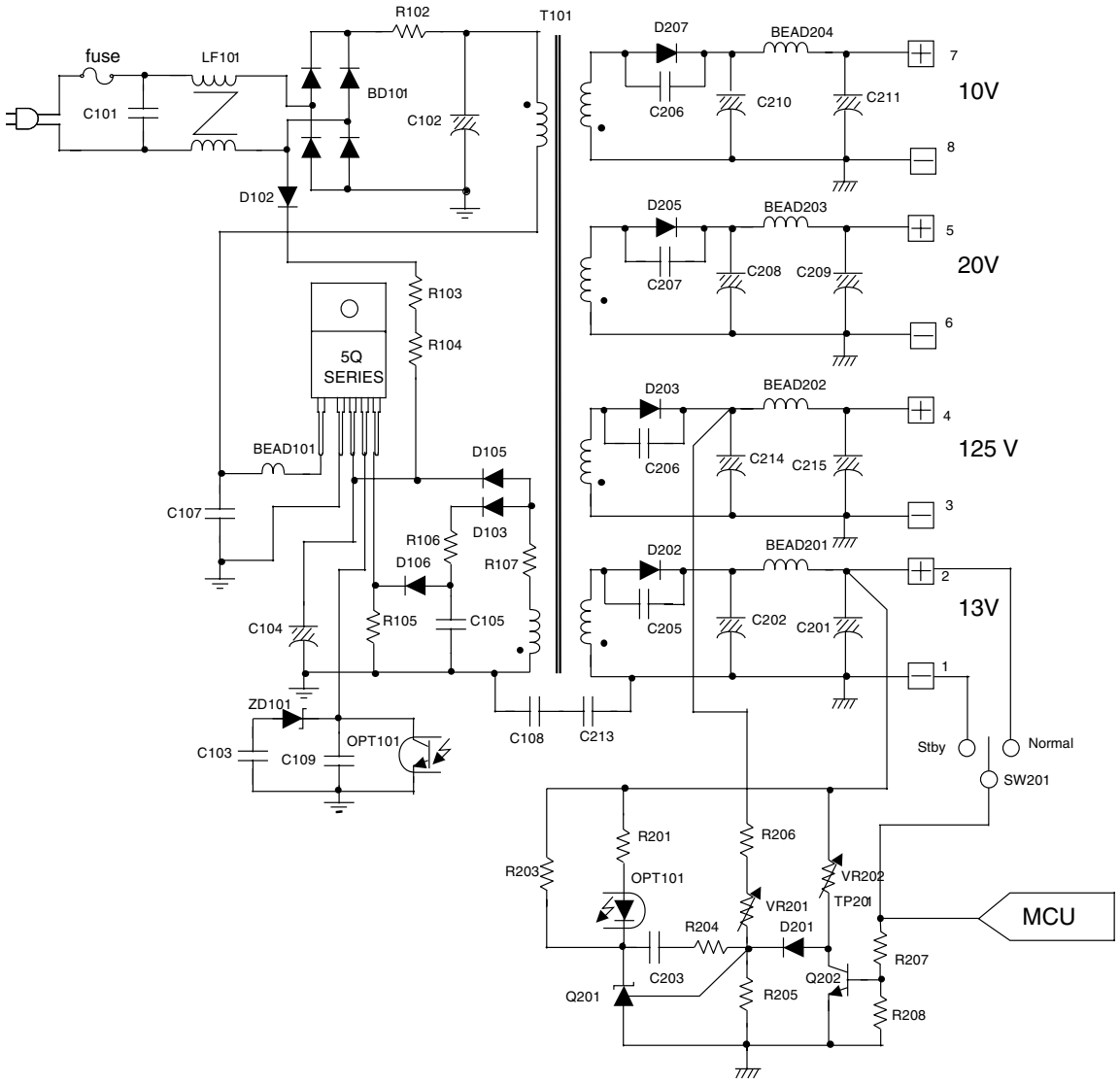
Applications

- Color Televisions

Electrical Characteristics

Product Parameter	Fairchild KA5Q-Series	Competitor
Breakdown voltage	650V	650V
Operation	QRC	QRC
Current sensing method	Current sensing with SenseFET Built in LEB block	Need sensing resistor Need RC filter
Power saving mode	Reduce output voltage to half level Burst Mode Operation QRC Operation	UVLO operation 20kHz switching Need auxiliary winding Need additional components
Primary side regulation	Available	Not Available
Protection	OVP, OLP: Auto-restart mode OCP, TSD: Latch mode	OVP, TSD: Latch mode
Package Type	Under 150W: TO-220F-5L Over 200W: TO-3PF-5L	TO-3PF-5L

Typical Applications Circuits



Ordering Information

Part Number	Pin max (W)	BVdss (V)	Ipeak typ (A)	Rds(on) typ (Ω)	Package
KA5Q0765RT-TU KA5Q0765RT-YDTU	100	650	5.0	1.3 (Id = 3.5A)	TO-220F-5L
KA5Q12656RT-TU KA5Q12656RT-YDTU	150	650	6.0	0.7 (Id = 6.0A)	TO-220-5L
KA5Q1265RF-TU KA5Q1265RF-YDTU	200	650	8.0	0.7 (Id = 6.0A)	TO-3PF-5L
KA5Q1565RF-TU KA5Q1565RF-YDTU	250	650	11.5	0.5 (Id = 7.5A)	TO-3PF-5L

-TU: Non Forming Type -YDTU: Forming Type