

Fairchild New Product Highlights



The Green FPS™ Power Switch Family

These power switches offer low standby power and low EMI for set top boxes, DVD players, and LCD monitor applications

www.fairchildsemi.com/whats_new/powersaver_nph.html



Fairchild's FPS products combine an avalanche-rated SenseFET (650V minimum breakdown rating) for current sensing with a current mode PWM IC—an integration that minimizes external components, simplifies designs, and lowers design costs.

The Green Fairchild Power Switch (FPS™) products, the FSDM0565R, FSDM07652R, and the FSDx0365RN, feature low standby power and low EMI for improved performance in video system applications.

In compliance with the International Energy Agency's (IEA) "1-Watt Initiative," Green FPS components achieve low standby power by using an integrated high-voltage startup regulator in conjunction with Fairchild's advanced burst mode standby operation.

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Green FPS™ Power Switch

Triple Video Driver

Low-Voltage Dual SPDT Analog Switches

30V N-Channel PowerTrench® MOSFETs

FLMP-Packaged Dual N-Channel MOSFET

High Voltage MOSFET SuperFET™

• Comprehensive New Product List

Features and Benefits

- Fully avalanche rugged SenseFETs improve reliability
- Low standby consumption with burst mode operation
- Reduced EMI with fully integrated frequency modulation
- Soft start function
- FPS products reduce the total bill-of-materials cost with integrated protection and control functions
- Various protection functions include over voltage, over load, over current, and thermal shutdown

Applications

- Auxillary power
- White goods
 - PC switch mode power supplies
- Digital consumer
 - Set top boxes
 - DVD players
 - Printers
- LCD monitors
- Plasma displays

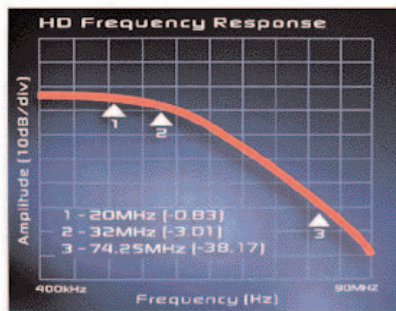
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Triple video driver with selectable HD/SD for video filters for RGB or YUV signals

www.fairchildsemi.com/whats_new/fms6418a_nph.html



FMS6418A performance diagram

The FMS6418A is a highly integrated, triple video driver that is selectable for High Definition (HD) or Standard Definition (SD) signal filtering. This video driver removes high frequency noise prior to digitizing the signal (anti-aliasing), or removes artifacts introduced during D/A conversion in the encoder (reconstruction filtering) for either RGB or YUV signals. The FMS6418A offers improved performance, flexibility, and lowers part count for advanced video applications.

Features and Benefits

- Three video anti-aliasing or reconstruction filtering
- YUV/RGB signal support
- 2:1 mux inputs for multiple RGB/YUV inputs
- Selectable 8MHz or 30MGz 6th order filters for SD/HD applications
- DC coupled input, AC coupled output
- All outputs can drive AC coupled 150Ω loads and provide 6dB of gain

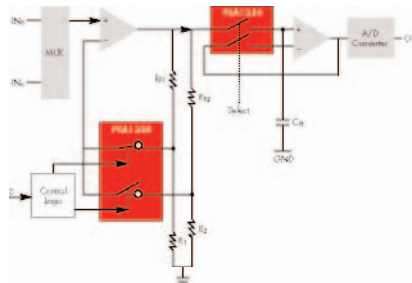
Applications

- HDTV monitors
- Cable and satellite set top boxes
- DVD players
- Personal Video Recorders (PVRs)
- Video on Demand (VOD)
- Audio video receivers

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Low-voltage dual SPST analog switches provide low distortion, high ESD protection and small packaging

http://www.fairchildsemi.com/whats_new/fsa125x.html



Low voltage data acquisition for industrial control and portable instrumentation

The FSA125x analog switches provide superior performance such as low leakage current, minimal charge injection and exceptional ESD protection. These devices are housed in leadless MicroPak™ packaging that optimizes design flexibility in response to the continuing miniaturization trend in portable equipment.

Features and Benefits

- Low on resistance (R_{on}) of 0.95Ω (typical) for reduced power consumption
- Low leakage current (2nA) and low charge injection (20pC) to minimize the offset error in signal sample/hold applications
- Broad 1.65V to 5.5V operating voltage range
- Low Total Harmonic Distortion (THD) of 0.002% maintains audio fidelity
- 5.5V (HBM) ESD performance

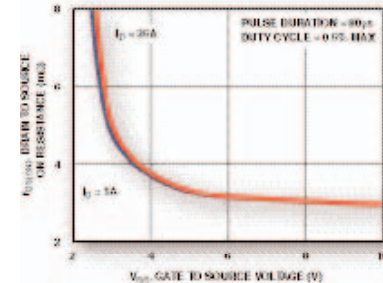
Applications

- Portable medical electronics
- Industrial instrumentation
- Cell phones
- Ultra-portables

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30V MOSFETs in D-PAK packaging meet automotive industry's AEC-Q101 standards

http://www.fairchildsemi.com/whats_new/30vauto_nph.html



Drain to Source On Resistance vs. Gate Voltage and Drain Current

Fairchild's 30V, N-Channel PowerTrench® MOSFETs deliver high efficiency and excellent ruggedness in a small footprint package, meeting the requirements for today's challenging, space-sensitive automotive applications. The new FDD044AN03L, FDU044AN03L, FDD068AN03L, and FDU068AN03L are available in both D-PAK and I-PAK packaging options for surface or through-hole mount designs.

Features and Benefits

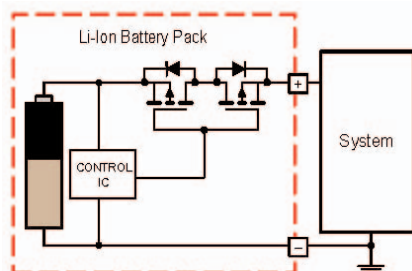
- Low on resistance (3.9/5.7mΩ)
- Improved t_{rr} and Q_{rr}
- Reduced package size from D²-PAK to D-PAK
- Improved operating efficiency
- Reduction in switching noise
- High power density product

Applications

- Anti-lock Braking Systems (ABS)
- HVAC fans
- Seat positioning and window lifts
- Body load controls

FLMP-packaged dual N-Channel MOSFET offers size and performance advances for Lithium Ion battery pack protection

www.fairchildsemi.com/whats_new/fdc6000nz_nph.html



Li-ion battery pack application diagram

The FDC6000NZ, a dual N-Channel MOSFET device combines Fairchild's PowerTrench® MOSFET silicon technology with a SuperSOT™-6 FLMP (Flipchip in a Lead Molded Package). The result is an advanced MOSFET power switch in a low-profile (0.8mm max height), small footprint (9.0mm² max area) package that provides the electrical and thermal performance critical to Lithium-Ion (Li-ion) battery pack protection.

Features and Benefits

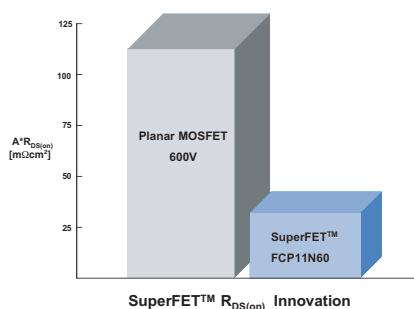
- Space savings SSOT-6 FLMP package with low height profile benefits (0.8mm)
- Excellent electrical performance
- Best-in-class thermal performance for size
- Package occupies only 9mm² of board space while not sacrificing electrical/thermal performance compared with competitive solutions in TSSOP-8 (20.4mm²) or larger packages
- Reduces parasitic system power drain and provides a low voltage drop solution for new charger/battery pack system design requirements
- Power dissipation of 1.6W and maximum steady-state current of 7.1A. Current standard SSOT-6 technology is limited to ~3A steady-state current

Applications

- Portable battery-powered products that operate with standard battery technology
- Mobile handsets, PDAs, portable music players, GPS receivers, digital cameras, palm computers

High Voltage MOSFET SuperFET™ offers advanced performance in SMPS and PFC applications

http://www.fairchildsemi.com/whats_new/superfet_nph.html



The FCP11N60 and FCPF11N60 SuperFET MOSFETs offer low Figure of Merit (FOM), best-in-class di/dt, ultra-low $R_{DS(on)}$ and low output capacitance. SuperFETs have been designed to significantly reduce system power loss, increasing efficiency and reliability in Switch Mode Power Supply (SMPS) and Power Factor Correction (PFC) applications.

Features and Benefits

- Ultra-low $R_{DS(on)}$ (0.32Ω, typical)
- Best-in-class di/dt (1430 A/μs, max)
- Low output capacitance ($C_{OSS} = 35$ pF, typical)
- Optimized gate charge levels ($Q_g = 40$ nC, typical)
- High efficiency and reliability
- Reduced conduction and switching loss
- Improved power density
- High ruggedness

Applications

- 70~90W adapters
- PFC and SMPS used in telecommunication equipment, consumer electronics and computers

Comprehensive New Product List - Q2 2004

Analog and Mixed Signal

ACE1001	Arithmetic Controller Engine (ACEx™) for Low Power, Low Cost Applications
KA5L0365RN	3A/650V 50kHz Power Switch
TMC22091	Digital Video Encoders/Layering Engine
TMC22191	Digital Video Encoders/Layering Engine
TMC2330A	Coordinate Transformer
TMC2330Ax1	Coordinate Transformer

Discrete

FDB24AN06LA0	60V N-Channel PowerTrench® MOSFET
FDD24AN06LA0	60V N-Channel Logic Level PowerTrench MOSFET
FDD107AN06LA0	60V N-Channel PowerTrench MOSFET
FDD6685	30V P-Channel PowerTrench MOSFET
FDFC3N108	20V N-Channel 1.8V Specified PowerTrench MOSFET with Schottky Diode
FDG6317NZ	Dual 20V N-Channel PowerTrench MOSFET
FDP24AN06LA0	60V N-Channel PowerTrench MOSFET
FDW264P	P-Channel 2.5V Specified PowerTrench MOSFET
FDS3572	80V N-Channel PowerTrench MOSFET
FDS9933	Dual P-Channel 2.5V Specified PowerTrench MOSFET
FGAF40N60UF	Ultrafast IGBT
FGA25N120AN	Discrete, NPT IGBT
FGL60N100BNTD	1000V, 60A NPT-Trench IGBT
FJP5321	NPN Triple Diffused Planar Silicon Transistor
FJPF5321	NPN Triple Diffused Planar Silicon Transistor
FJPF5027	NPN Silicon Transistor
FJP5027	NPN Silicon Transistor
FKN2L60	Bi-Directional Triode Thyristor Planar Silicon
FQA62N25C	250V N-Channel Advance Q-FET® C-Series
FQB11N40C	400V N-Channel Advance Q-FET C-Series
FQB15P12	120V P-Channel QFET
FQB32N12V2	120V N-Channel Advanced QFET V2 series
FQB45N15V2	150V N-Channel Advanced QFET V2 series
FQI15P12	120V P-Channel QFET
FQPF15P12	120V P-Channel QFET
FQPF32N12V2	120V N-Channel Advanced QFET V2 series
FQPF90N10V2	100V N-Channel Advanced QFET V2 series
FQP15P12	120V P-Channel QFET
FQP32N12V2	120V N-Channel Advanced QFET V2 series
FQP90N10V2	100V N-Channel Advanced QFET V2 series

Interface & Logic

FSA1256	Low R_{ON} Low Voltage Dual SPST Analog Switch
FSA1257	Low R_{ON} Low Voltage Dual SPST Analog Switch
FSA1258	Low R_{ON} Low Voltage Dual SPST Analog Switch

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