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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



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.

Contents

• New Product Highlights

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

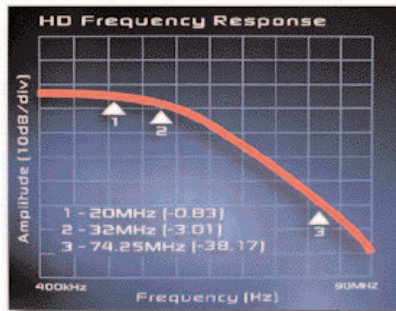
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2

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

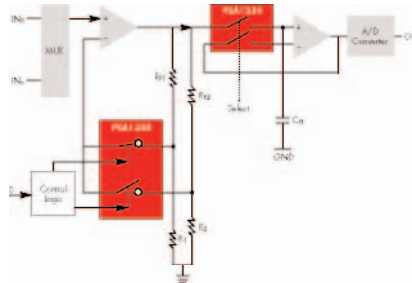
Applications

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

3

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

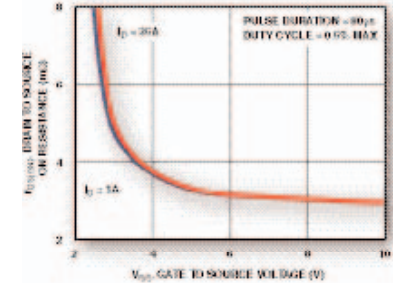
Applications

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

4

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

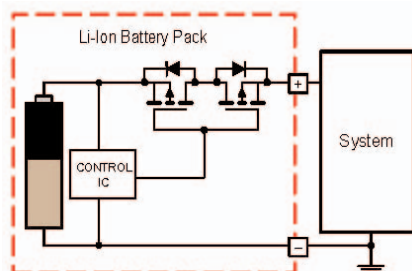
- Low on resistance (3.9/5.7mΩ)
- Improved t_{rr} and Q_{rr}
- Reduced package size from D²-PAK to D-PAK
- Improved operating efficiency
- Reduction in switching noise
- High power density product

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 Leaded 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

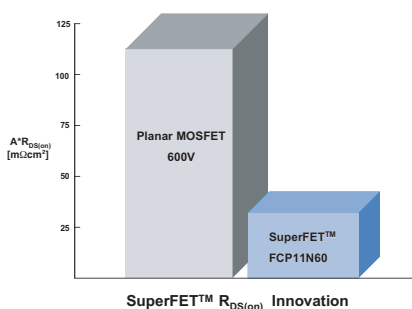
- Space savings SSOT-6 FLMP package with low height profile benefits (0.8mm)
- Excellent electrical performance
- Best-in-class thermal performance for size
- Package occupies only 9mm² of board space while not sacrificing electrical/thermal performance compared with competitive solutions in TSSOP-8 (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



SuperFET™ R_{DS(on)} Innovation

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} = 35pF, typical)
- Optimized gate charge levels (Q_g = 40nC, 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

For more information on innovative Fairchild products and to register for future editions of Fairchild New Product Highlights Newsletter, visit www.fairchildsemi.com/whats_new

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For datasheets, application notes, samples and more, visit www.fairchildsemi.com

Americas

Fairchild Semiconductor
Customer Response Center
7701 Las Colinas Ridge,
Suite 400 Irving, Texas 75063
United States

China

Fairchild Semiconductor
(Shanghai) Company Limited
Beijing Liaison Office Room 2506,
China Resources Building
No. 8, Jianguomenbei Avenue
Beijing 100005, P.R. China
Tel: 86-10-8519-2060
Fax: 86-10-8519-2061

Fairchild Semiconductor
(Shanghai) Company Limited
Shenzhen Liaison Office
Room 3108, Shun Hing Square
Di Wang Commercial Centre
5002 Shen Nan Road East
Shenzhen 518008, P.R. China
Tel: 86-755-8246-3088
Fax: 86-755-8246-2092

Fairchild Semiconductor
(Shanghai) Company Limited
Puxi Liaison Office
Room 2208, Kerry Centre
No. 1515 Nanjing West Road
Jingan, Shanghai 200040
P.R. China
Tel: 86-21-5298-6262
Fax: 86-21-5298-5118/9

Finland

Fairchild Semiconductor
Itakatu 3 D 213
FIN-00930 Helsinki
Finland
Tel: 358-9-3411266
Fax: 358-9-3411292

France

Fairchild Semiconductor SAS
Immeuble Dublin
2, place Gustave Eiffel
Silic 227
94528 RUNGIS Cedex
France
Tel: 33-1-5634-7210
Fax: 33-1-5634-7211

Germany

Fairchild Semiconductor GmbH
Oskar-von-Miller-Strasse 4e
D-82256 Fürstenfeldbruck
Germany
Tel: 49-8141-6102-0
Fax: 49-8141-6102-100

Hong Kong

Fairchild Semiconductor
Hong Kong Ltd.
19/F, CMG Asia Tower
The Gateway II
15 Canton Road
Tsimshatsui, Kowloon
Hong Kong
Tel: 852-2722-8338
Fax: 852-2722-8383

Italy

Fairchild Semiconductor Srl
Via Carducci, 125
20099 Sesto San Giovanni (MI)
Italy
Tel: 39-02-249111-1
Fax: 39-02-26263424

Japan

Fairchild Semiconductor Japan Ltd.
6F Bancho-Kaikan
12-1 Gobancho, Chiyoda-ku
Tokyo, 102-0076 Japan
Tel: 81-3-5275-8380
Fax: 81-3-5275-8390

Fairchild Semiconductor Japan Ltd.
Osaka Office
Shin-Osaka Meiko Building 8F
4-3-12, Miyahara, Yodogawa-ku
Osaka, 532-0003 Japan
Tel: 81-6-6398-3670
Fax: 81-6-6398-3680

Korea

Fairchild Korea Semiconductor, Ltd.
Bucheon Office
82-3, Dodang-Dong,
Wonmi-Ku, Bucheon,
Gyeonggi-do, 420-711
Korea
Tel: 82-32-680-1000
Fax: 82-32-680-1949

Fairchild Korea Semiconductor, Ltd.
Suwon Office
Saemaoul-hoi Building,
1122-12, Ingye-Dong,
Paldal-gu, Suwon-si,
Gyeonggi-do, 442-070
Korea
Tel: 82-31-231-3100
Fax: 82-31-231-9846

Fairchild Korea Semiconductor, Ltd.
Gumi Office
4F Saero-net Building
274-9, Songjeong-dong
Gumi-si, Gyung-sang-buk-Do,
730-090, Korea
Tel: 82-54-457-4111
Fax: 82-54-457-4121

Mexico

Fairchild Semiconductor
Av. Vallarta #6503 Flr. 14
Col. Cd Granjas
Zapopan Jalisco 45010
Mexico
Tel: 52-3-1100017
Fax: 52-3-1101878

Singapore

Fairchild Semiconductor
Asia Pacific Pte. Ltd.
350 Orchard Road
#20-01/03 Shaw House
Singapore 238868
Tel: 65-6836-0936
Fax: 65-6838-0321/3

Sweden

Fairchild Semiconductor
Industrivagen 7
SE-171 48 Solna
Sweden
Tel: 46-8-6515530
Fax: 46-8-6515505

Taiwan

Fairchild Semiconductor
Hong Kong Ltd. Taiwan Branch
18 F-A, No.167
Tun Hwa North Road
Taipei 10500, Taiwan
Tel: 886-2-2712-0500
Fax: 886-2-2546-7188

UK

Fairchild Semiconductor Ltd.
Interface House
Interface Business Park
Woolton Bassett
Swindon SN4 8QE
United Kingdom
Tel: 44-1793-856856
Fax: 44-1793-856857



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