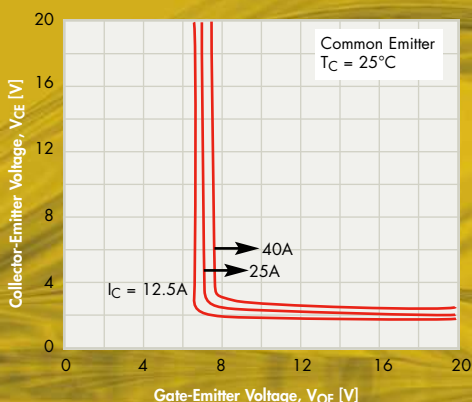


New Product Highlights



The FGA25N120ANTD has very low saturation voltage(2.0 V) that limits conduction losses.

Contents

- 1200V NPT-IGBT
- 30V MOSFETs
- Highly Integrated Video Switch Matrix
- High Voltage Gate Drivers
- Partial Power Factor Correction Switching Converter
- Global Power Resource™'s Motor Drive Solutions Tool

1200V NPT-IGBT Offers "Best-in-Class" Avalanche Capability for Induction Heating Applications

<http://www.fairchildsemi.com/pf/FG/FGA25N120ANTD.html>
<http://www.fairchildsemi.com/an/AN/AN-9012.pdf>

The FGA25N120ANTD provides optimal trade-off performance between switching and conduction losses that lowers operating temperature in induction heating appliances. Due to the circuitry and fabrication process, it can withstand a maximum 450mJ of avalanche energy, which ensures fail-safe operation in abnormal avalanche mode conditions. This capability is important for reliability in induction heating applications where unstable power, AC line surges and system malfunctions can cause avalanche-mode conditions. This 1200V NPT-IGBT features low saturation voltage to limit conduction losses and low switching losses to reduce system power dissipation, improving overall system efficiency.

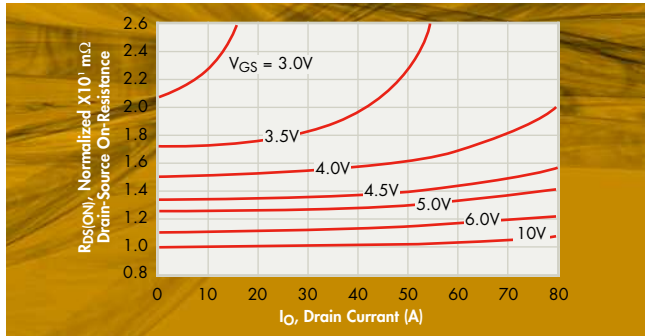
Features and Benefits

- Low saturation voltage to limit conduction losses
- Low switching loss to reduce system power dissipation
- Built-in fast recovery diode (FRD) to simplify circuit design and reduce component count

Applications

- Microwave ovens
- IH rice cookers
- Other induction heating applications

Part Number	Description	Package	BVces MIN	Ic	Built-In Diode	Saturation Voltage Test Condition	Saturation Voltage (Vce) (typ)
FGA25N120ANTD	1200V NPT-Trench IGBT	T0-3P	1200V	25 A	Yes	25A, 15V	2V



The FDS6298, 30V N-Channel MOSFET offers very low On resistance.

30V MOSFETs Optimize Efficiency and Space for Synchronous Buck Converter Applications

<http://www.fairchildsemi.com/pf/FD/FDS6298.html>

<http://www.fairchildsemi.com/pf/FD/FDS6299S.html>

<http://www.fairchildsemi.com/pf/FD/FDS6294.html>

The high-side control MOSFET (FDS6298) and low side synchronous MOSFET (FDS6299S) form a low gate charge solution that increases current density and switching performance in synchronous buck converter applications. This solution features an integrated SyncFET™ device in the matched pair, which reduces part count. It has an optimized die and lead frame design that reduces package resistance and inductance, thereby reducing conduction and source terminal inductance switching losses.

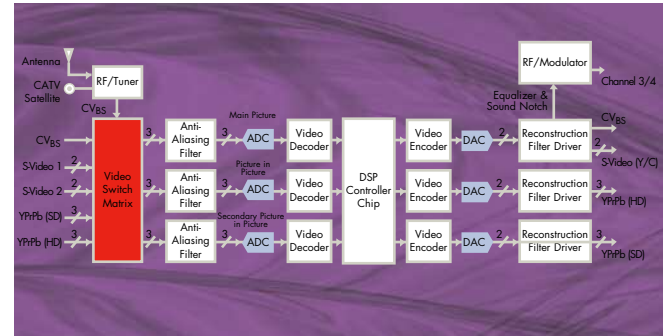
Features and Benefits

- Low total Qg (9nC@ VGS = 4.5V) and Qgd (3nC@VGS = 4.5V) for fast switching speeds to increase efficiency
- Rg-specified and 100% Rg-tested resulting in a well-defined drain-source switching characteristic

Applications

- Notebooks that use IMVP (Intel Mobile Voltage Positioning) specifications
- Set-top boxes
- Flat panel displays

Part Number	Description	Configuration	Package Type	ID	RDS (ON)	QG
FDS6294	30V N-Channel Fast Switching PowerTrench® MOSFET	Single	SO-8	13A	11mΩ	10nC
FDS6298	30V N-Channel Fast Switching PowerTrench® MOSFET	Single	SO-8	13A	9mΩ	10nC
FDS6299S	30V N-Channel PowerTrench® SyncFET™	SyncFet	SO-8	21A	3mΩ	31nC



A typical signal path application diagram of the FMS6501 in an application.

Highly Integrated Video Switch Matrix Reduces Board Space and Cost in High Definition Video Applications

<http://www.fairchildsemi.com/pf/FM/FMS6501.html>

http://www.fairchildsemi.com/collateral/stbdvd_design_guide.pdf

http://www.fairchildsemi.com/collateral/videofilter_linecard.pdf

<http://www.fairchildsemi.com/power/settopboxdvdonsem.html>

The FMS6501 integrates analog switch capability, input clamps, bias circuitry and cable drivers into one device, which reduces board space by 50%. This video switch matrix offers designers unparalleled ease-of-use and flexibility by providing 12 inputs, each of which may be switched to any of 9 available outputs. It is the only device of its kind able to accommodate standard definition (SD), progressive scan (PS), high definition (HD), and 1080p video signals, while offering selectable 6, 7, 8, or 9dB integrated cable drivers capable of driving dual video loads.

Features and Benefits

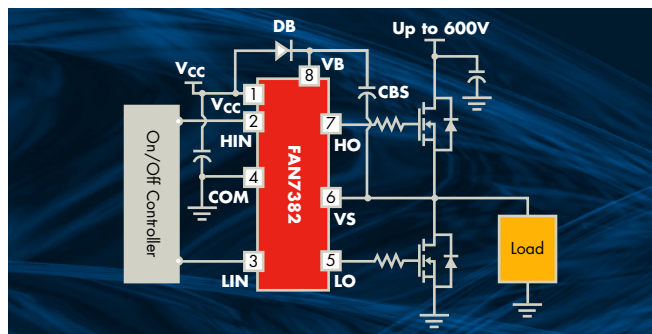
- Supports 1080p, 1080i, 720p, 480p, and 480i video signals for ultimate flexibility
- I²C™ digital interface improves ease-of-use
- Ability to directly drive 75 Ω cables eliminates external components, saves space and reduces part count
- Inputs offer sync-tip clamp or bias option to handle video signals, with or without sync, easily accommodating either RGB or YPbPr signals

- Ability to disable unused outputs lowers power dissipation

Applications

- Satellite set-top boxes
- High definition televisions (HDTV)
- Personal video recorders (PVR)
- A/V switchers
- Security equipment
- Media centers
- In-cabin (car) entertainment systems

Part Number	Description	# of Inputs	# of Outputs	Program mable	Control Interface	Standards Support	Package
FMS6501	Video Switch Matrix	12	9	x	I ² C	480i (NTSC/PAL), 480p, 720p, 1080i	SSOP



The FAN7382 is driving both high side and low side MOSFETs.

High Voltage Gate Drivers

<http://www.fairchildsemi.com/hvic>

Fairchild's high voltage gate drivers improve system reliability by using an innovative noise canceling circuit that provides excellent noise immunity. These gate driver solutions save at least 50% PCB area compared to commonly used pulse transformer-based solutions. The industry-leading, high-side driver operation with negative V_S swings of up to $-9.8V$ (at $V_{BS} = 15V$) protect the gate drivers against negative noise. Competitive products must use an additional diode to provide this protection.

Features and Benefits

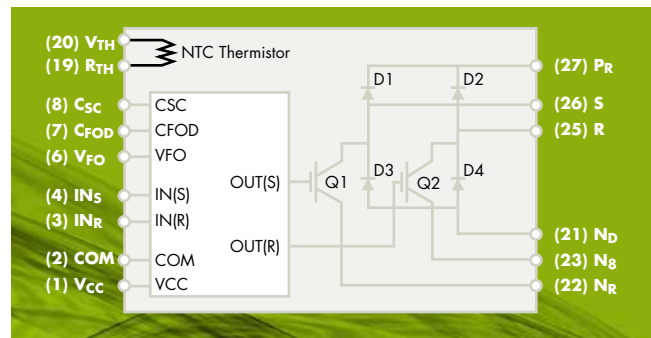
- Better noise immunity due to noise canceling circuit over high dv/dt common-mode noise
- Extended allowable negative V_S swing to $-9V$ for signal propagation @ $V_{CC}=V_{BS}=15V$
- Low power consumption due to low quiescent current, I_{QBS}/I_{QCC}
- Very high efficiency in small packages and excellent performance-to-cost ratio
- Industry's lowest quiescent currents resulting in extremely low power consumption and the market's

lowest temperature dependency of electrical characteristics

Applications

- Inverter motors
- HID inverters
- Backlight inverter for CCFLs
- Ballast for fluorescent lamps
- Plasma Display Panels (PDPs)
- Half bridge SMPS designs

Part Number	Description	Drive Type	Floating Voltage	Dead Time	Sourcing/Sinking Current	Package
FAN7361	Half Side Gate Driver	High side	600V		250mA/50mA	SOIC
FAN7362	Half Side Gate Driver	High side	600V		250mA/50mA	SOIC
FAN7380	Half Bridge Gate Driver	Half bridge	600V	100ns	90mA/18mA	SOIC
FAN7382	Half Bridge Gate Driver	High & low side	600V	50nS	350mA/60mA	SOIC



PFC-SPM integrates rectifier diodes, IGBTs, a gate driver, and a thermistor into one chip.

Partial Power Factor Correction Switching Converter (PFC-SPM™) (PSC) circuit topology provides 97% of power factor (typical) and full compliance with IEC-61000-3-2 standard

<http://www.fairchildsemi.com/pf/FS/FSAB20PH60.html>

http://www.fairchildsemi.com/offers/discrete/spm/pfc_spm.html

The FSAB20PH60's low switching loss topology and advanced substrate packaging improves system reliability and speeds assembly time in applications such as 1-3 kW air conditioners. The PFC-SPM integrates four rectifier diodes, two IGBTs, a gate-driver and a thermistor into a single, thermally-efficient module. Fairchild's PFC-SPM and motor control module (Motion-SPM) are designed to be mounted side-by-side to share a single heat sink, which simplifies designs, speeds design time and improves overall system reliability.

Features and Benefits

- Compact (44mm X 26.8mm) Direct Bonded Copper (DBC) package that saves space and provides low thermal resistance
- Low acoustic noise due to an optimized gate-driver IC
- Gate driver's under-voltage and over-current protection that increases system reliability

Applications

- 1-3kW air conditioners

Part Number	Description	BV _{CES} (V)	Input Current (Arms)	130% Overload (Arms)	Typical Switching Frequency (Hz)
FSAB20PH60	Partial Switching Converter	600	11	14	120

Fairchild's Global Power Resource™

Fairchild's Global Power Resource is a worldwide network of design centers, systems application experts, online design tools, demonstration boards and joint research and development labs.

Fairchild's design experts provide customers with power solutions to optimize and streamline their designs and reduce time-to-market. Fairchild's Global Power Resource offers:

- A web-based design center with design/selection tools
- Tutorials
- On-demand training
- Evaluation boards and reference designs and
- Power design centers

The world-wide design centers provide designers with ready-to-manufacture solutions that can be taken directly to the production floor. Tapping into Fairchild's Global Power Resource, designers acquire a partner with the strength to optimize performance, reduce part count, reduce inventory costs, enhance design functionality and improve time-to-market.

New Design Tool

Motor Drive Solutions Tool

http://fsce54:8201/whats_new/spm_tool.html

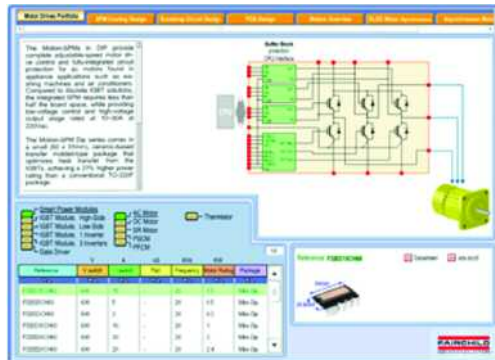
Fairchild's motor drive solution tool provides step-by-step design procedures for motor drive solutions in home appliances. The tool offers product selection with added features such as a design assistant for calculation the bootstrap capacitor in a bootstrap circuit. The goal of this tool is to simplify design and offer designers flexibility in choosing the right product for the design.

Features and Benefits

- Design Aid - bootstrap capacitor, PCB design, heat sink requirements, loss calculations
- Product Selection - helps choose the right module for you
- Education - motor and basic magnetic overview



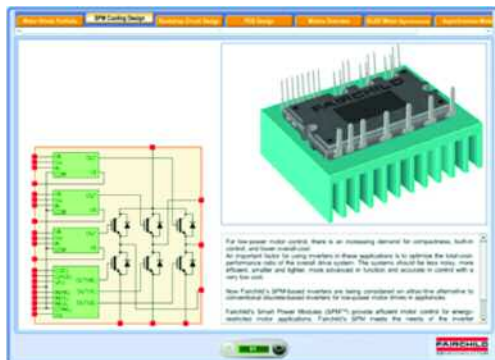
Motor Drive Solution Tool Overview



Motor Drives
Portfolio



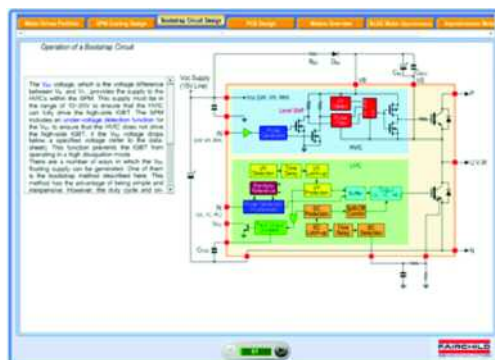
Motors
Overview



SPM Cooling
Design



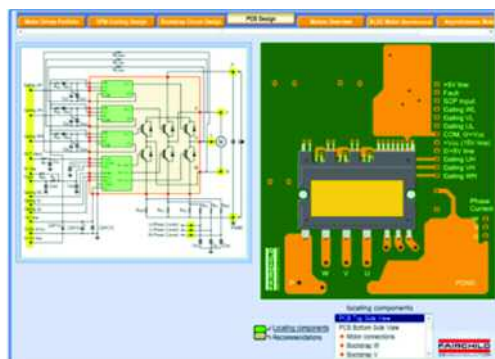
BLDC Motor
(Synchronous)



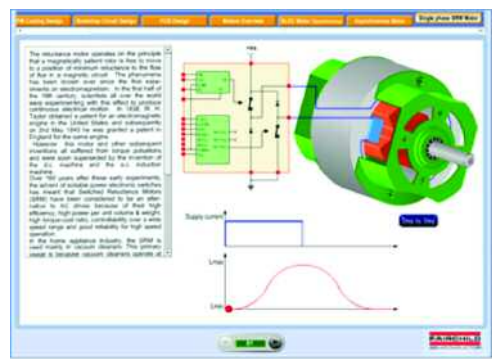
Bootstrap Circuit
Design



Asynchronous
Motor



PCB Design



Single Phase
SRM Motor

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