

GENERATION II XS™ DrMOS FAMILY

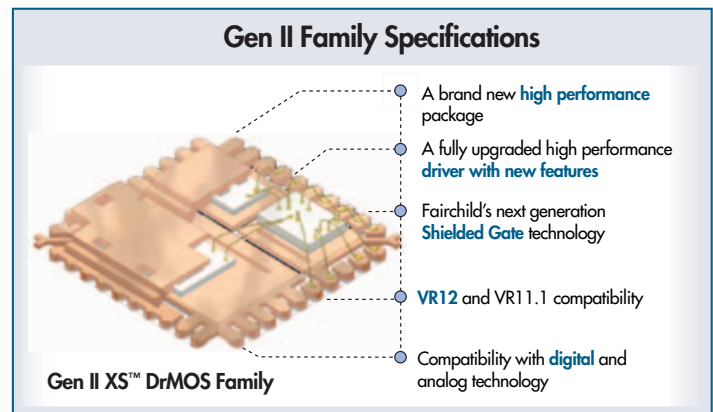
Fairchild's Offering

As power supply designers face the challenge of reduction in PCB area, increased power requirements and the need for higher performance, they need a solution that addresses all three problems in a single form factor. Fairchild offers its GEN II XS™ DrMOS family of products to address this challenge. The Gen II XS DrMOS family with clip bonding is Fairchild's second generation, fully-optimized, ultra-compact integrated MOSFET plus driver power stage solution for high current, high frequency synchronous-Buck DC-DC applications.

Gen II XS DrMOS family integrates a driver, control MOSFET (high side), synchronous MOSFET (SyncFET™ low side), a bootstrap diode and a Schottky diode in a thermally enhanced, ultra-compact 6mm x 6mm PQFN clip package. The copper clip packaging ensures low package resistance improving the current handling capability and performance of the part. With an integrated approach, the complete switching power stage is optimized with regards to driver and MOSFET dynamic performance, system inductance and Power MOSFET $R_{DS(ON)}$. A new driver IC with reduced dead times and propagation delays further enhances the performance of the part. A thermal warning function has been included to warn customers of a potential over temperature situation.

Features

- 94% peak efficiency
- Portfolio of products from 40A to 50A (current handling)
- High performance PQFN copper clip package
- Tri-state PWM input 3.3V and 5V
- Skip mode SMOD# (low side gate turn off) input
- Over-temperature protection – over-temperature warning (all parts)
- Fairchild Shielded Gate technology MOSFETs for clean voltage waveforms and reduced ringing
- Fairchild SyncFET™ (integrated Schottky diode) technology in the low side MOSFET
- Integrated bootstrap Schottky diode
- Adaptive gate drive timing for shootthrough protection
- Under-voltage lockout (UVLO)
- Optimized for high switching frequencies up to 1MHz
- Based on the Intel® 4.0 DrMOS Standard



Applications

- Compact blade servers (V-core and non V-core DC-DC converters)
- High performance gaming motherboards
- Desktop computers (V-core and non V-core DC-DC converters)
- Workstations
- High-current DC-DC Point of Load (POL) converters
- Networking and telecom microprocessor voltage regulators
- Small form factor voltage regulator modules

For data sheets, application notes, samples and more, please visit: www.fairchildsemi.com

Device Family	Part Number	Efficiency at 12Vin, 1Vout, 25A	Current (A)	Internal Regulator	PWM Input	Thermal Protection	Gate Drive Voltage	Applications
05 Family	FDMF6705	>89%	40	No	5V Tri-state	Warning	5V	Gaming, Desktops, and Notebooks
05 Family	FDMF6705V	>89%	40	Yes	5V Tri-state	Warning	5V	Gaming and Desktops
06 Family	FDMF6706C	>91%	45	No	5V Tri-state	Warning	5V	Servers and Telecom
07 Family	FDMF6707B	>91.5%	50	No	3.3V Tri-state	Warning	5V	Servers and Telecom

* In Development

