SMART HIGH-SIDE SWITCHES ROBUST, RELIABLE ANALOG SOLUTIONS

eXtreme Switch: N-channel MOSFET switches with embedded protection and diagnostics and low on-resistance ranging from 2 to 100 milliohms per channel.

TARGET APPLICATIONS

- 12 and 24 volt automotive lighting
- 12 and 24 volt automotive DC motor control
- Low-voltage industrial lighting
- Low-voltage factory automation
- Actuator controls
- Off-road equipment
- DC motors
- Fuse and Relay replacement
- Valve control

OVERVIEW

The eXtreme switch portfolio contains a wide breadth of products for automotive and industrial applications, offering low on-resistance, SPI, control and diagnostics for 12, 24 and 32 V applications.

These smart high-side switches combine flexibility through programmable SPI, and robust designs through embedded protection and extended digital and analog feedback.

FEATURES AND BENEFITS

- Programming, control and diagnostics through a SPI communication interface with daisy chain capability
- Fail-safe operation mode
- Optimized fault protection
- PWM module with programmable outputs, shape and delay management
- Very low standby current
- Embedded reverse battery protection
- Functional and electrical compatibility between family members
- Excellent thermal efficiency, low on-resistance switching
- Bill of material (BOM) component and cost savings
- Software simplification in case of multiple load managemet
- Analog diagnostics with high precision for advanced monitoring

AUTOMOTIVE

FAMILY	PART NUMBER	OUTPUTS # AND ON-RESISTANCE	TOTAL OUTPUTS #	OPERATING VOLTAGE (V)	MAX. CONTINUOUS CURRENT (A)	MAX. PWM FREQUENCY	PIN-TO-PIN COMPATIBILITY	SOFTWARE COMPATIBILITY	PACKAGE
12 V FAMILY DEVICES									
12XS6	MC07XS6517	Triple 7 mΩ, Dual 17 mΩ	5	7-18	18-9	400 Hz	✓	✓	54-pin SOICEP
	MC17XS6500	Penta 17 mΩ	5	7-18	9	400 Hz			32-pin SOICEP
	MC08XS6421	Dual 08 mΩ, Dual 21 mΩ	4	7-18	9	400 Hz			32-pin SOICEP
	MC17XS6400	Quad 17 mΩ	4	7-18	9	400 Hz			32-pin SOICEP
	MC40XS6500	Penta 40mOhms	5	7-18	6	400 Hz			32-pin SOICEP
24 V FAMILY DEVICES									
24XS4	MC06XS4200	Dual 6 mΩ	2	8-36	15	1 kHz	✓	✓	23-pin PQFN
	MC10XS4200	Dual 10 mΩ	2	8-36	15	1 kHz			23-pin PQFN
	MC20XS4200	Dual 20 mΩ	2	8-36	4.5	1 kHz			23-pin PQFN
	MC22XS4200	Dual 22 mΩ	2	8-36	4.3	1 kHz	✓	✓	32-pin SOICEP
	MC50XS4200	Dual 50 mΩ	2	8-36	1.7	1 kHz			32-pin SOICEP
MAIN SWITCH DEVICES									
12XS2	MC33981	Single 4 mΩ	1	6-27	75	60 kHz	–	–	16-pin PQFN
	MC33982	Single 2 mΩ	1	6-27	41	1 kHz	✓	✓	16-pin PQFN
	MC33984	Dual 4 mΩ	2	6-27	21	1 kHz			16-pin PQFN
60 V FAMILY DEVICE									
XS2410	MC33XS2410	Quad 100mohms	4	3-60	1.8	2kHz	✓	✓	28-pin TSSOP

INDUSTRIAL

FAMILY	PART NUMBER	OUTPUTS # AND ON-RESISTANCE	TOTAL OUTPUTS #	OPERATING VOLTAGE (V)	MAX. CONTINUOUS CURRENT (A)	MAX. PWM FREQUENCY	PIN-TO-PIN COMPATIBILITY	SOFTWARE COMPATIBILITY	PACKAGE
32 VOLT FAMILY DEVICES									
32XSG	MC07XSG517	Triple 7 mΩ, Dual 17 mΩ	5	7-30	18-9	400 Hz	✓	✓	54-pin SOICEP
	MC17XSG500	Penta 17 mΩ	5	7-30	9	400 Hz			32-pin SOICEP