

Dialog's GFET3 family of high-performance integrated power switches are designed and optimized for all high-side power rail control applications from 0.25 V to 5.5 V where the load currents range from 1 A to 9 A. Using Dialog's proprietary MOSFET design, all GFET3 integrated power switches achieve ultra-stable RDS<sub>ON</sub> across wide input and supply voltage ranges. Combining Dialog's proprietary MOSFET IP and advanced assembly techniques, these advanced state-of-the-art products are available in ultra-small pcb footprints from 0.56 mm<sup>2</sup> to 4 mm<sup>2</sup> and exhibit low thermal resistances for high-current operation.

Compared to discrete FET circuit implementations, Dialog's GFET3 products combine high-performance nFET or pFET structures, high-current handling capability, charge pumps, as well as multiple protection and control circuits into space-efficient single-and dual-channel products. The combination of all these advanced features directly results in BOM (bill-of-material) component and cost reductions as well as increasing system reliability and reduced board size.

All of Dialog's GFET3 low-voltage integrated power switches are designed and fully characterized over the commercial (0 °C to 70 °C), extended commercial (-20 °C to 70 °C), industrial (-40 °C to 85 °C), or extended industrial (-40 °C to 125 °C) temperature range. Consistent with generating very low thermal gradients, Dialog integrated power control switches are available in low thermal resistance, STDFN/STQFN RoHS-compliant packaging or wafer-level chip scale packaging (WLCSP).

Key **features** in the GFET3 family of high-performance, integrated power control products include:

- High-performance Low RDS<sub>ON</sub> nFET & pFET MOSFETs
  - From as low as 4 mΩ
- Internal Protection Features:
  - Built-in Supply Undervoltage Lockout Protection
  - Fixed and Capacitor/Resistor-adjustable Inrush Current Control
  - Fixed and Resistor-adjustable Current Limit Protection
  - Built-in Short-circuit Current Protection
  - Built-in Thermal Shutdown Protection with Auto Restart
  - Reverse-current Blocking using Bulk Switch or Back-to-Back FETs
  - Reverse-voltage Detection (selected part numbers)
  - Fast VOUT Discharge (VOUT Discharge delete options available)
- Active HIGH ON-OFF Control (Active-LOW ON-OFF control available)
- Open-drain  $\overline{\text{FAULT}}$  Signaling (selected part numbers)
- Open-drain Power Good Signaling (selected part numbers)
- Wafer-level Chip-scale Packaging (selected part numbers)
- UL2367 Certified (selected part numbers)

#### Applications:

- Smartphones and Fitness Bands
- Notebook and Tablet PCs
- Enterprise Networking
- Enterprise Multifunction Copiers/Printers
- Enterprise Computing
- Set-top Boxes
- HDDs and SSDs
- PCIe/PCI Adapter Cards
- Portable Consumer Electronics
- General-purpose, High-side Power-Rail Switching/Control

## Single N-Channel Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1717V	4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, output discharge, protection, and PG signal output	5	4	0.8	V <sub>DD</sub>	2.5 - 5.5	Capacitor	UVLO, ACL(R), SCL, TSD	No	PG	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1709V	4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, and protection	4	4	0.8	V <sub>DD</sub>	2.5 - 5.5	Capacitor	UVLO, ACL, SCL, TSD	No	No	No	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1710V	4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, and protection	2	4	0.8	V <sub>DD</sub>	2.5 - 5.5	Capacitor	UVLO, ACL, SCL, TSD	No	No	No	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1713V	4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, output discharge, and protection	2	4	0.8	V <sub>DD</sub>	2.5 - 5.5	Capacitor	UVLO, ACL, SCL, TSD	No	No	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1568V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	9	7.3	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1456V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	5	7.8	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-20 to +70	TDFN-8 (1.5 x 2.0)
SLG59M1457V	3 mm <sup>2</sup> integrated power switch with charge pump, output discharge, and protection	6	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1496V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	5.3	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1600V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	9	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1655V	3 mm <sup>2</sup> , integrated power switch with reverse-current blocking, charge pump, ramp control and protection	9	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M301V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	4	8.5	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M307V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and output discharge	4	7.8	0.85	V <sub>DD</sub>	1.5 - 5.5	Capacitor	No	No	No	Yes	-20 to +85	TDFN-8 (1.5 x 2.0)
SLG59M308V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	3	7.8	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +70	TDFN-8 (1.5 x 2.0)
SLG59M309V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and protection	4	7.8	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	No	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1657V	3 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, and protection	4	8.4	0.9	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	No	-40 to +125	TDFN-8 (1.5 x 2.0)
SLG59M1614V	3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and output discharge	4	8.5	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)

## Single N-Channel Integrated Power Switches (continued)

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/ Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1470V	3 mm <sup>2</sup> fast turn on, nano-power current consumption integrated power switch	6	9.8	0.85	V <sub>DD</sub> - 1.5 V	3.0 - 5.25	No	No	No	No	Yes	-40 to +85	TDFN-9 (1.5 x 2.0)
SLG59M1685C	0.82 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	2	10	1.3	3.6	-	Internally Fixed	UVLO, ACL, SCL, TSD	No	No	Yes	-40 to +85	WLCSP-6L (0.71 x 1.16)
SLG59M1735C	1.5 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and protection	4	10.5	0.9	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	No	-40 to +85	WLCSP-8 (0.96 x 1.56)
SLG59M1707V	4 mm <sup>2</sup> , integrated power switch with charge pump, IDS current monitor output, output discharge, and protection	3.5	13	0.8	V <sub>DD</sub>	2.5 - 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +125	STQFN-16 (1.6 x 2.5)
SLG59M1571V	1 mm <sup>2</sup> , low-voltage integrated power switch with reverse-current blocking, charge pump, output discharge, protection, and 4-pin package	1	14.6	0.85	1.9	-	No	TSD, RCB	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1714V	4 mm <sup>2</sup> , integrated power switch with reverse-current blocking, charge pump, IDS current monitor output, output discharge, and protection	4	15	0.8	V <sub>DD</sub>	2.5 - 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD, RCB	Current	FAULT	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1551V	1 mm <sup>2</sup> , low voltage integrated power switch with charge pump, output discharge, protection, and 4-pin package	2	15.5	0.85	1.9	-	No	TSD	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1556V	1 mm <sup>2</sup> , low voltage integrated power switch with charge pump, protection, and 4-pin package	2	15.5	0.85	1.9	-	No	TSD	No	No	No	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1658V	1.6 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, output discharge, and protection	2.5	17	0.9	V <sub>DD</sub>	2.5 - 5.5	Capacitor	UVLO, ACL, SCL, TSD	No	No	Yes	-40 to +125	STDFN-8 (1.0 x 1.6)
SLG59M1448V	1.6 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	2.5	17	0.9	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M1545V	1.6 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and protection	2.5	17	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	No	-20 to +70	STDFN-8 (1.0 x 1.6)
SLG59M1598V	1.6 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	2.5	17	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M1746C	0.82 mm <sup>2</sup> integrated power switch with output discharge	1	17.6	0.25	1.5	2.7 - 3.6	Internally Fixed	No	No	No	Yes	-40 to +85	WLCSP-6L (0.71 x 1.16)
SLG59M1742C	0.82 mm <sup>2</sup> integrated power switch with 550 us total on time, and output discharge	1	18	0.25	1.5	2.7 - 3.6	Internally Fixed	No	No	No	Yes	-40 to +85	WLCSP-6L (0.71 x 1.16)
SLG59M1720V	1.4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, output discharge and protection	2	18	0.85	V <sub>DD</sub>	2.5 - 3.6	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-6 (1.0 x 1.4)

## Single N-Channel Integrated Power Switches (continued)

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/ Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1721V	1.4 mm <sup>2</sup> , integrated power switch with charge pump, ramp control, and protection	2	18	0.85	V <sub>DD</sub>	2.5 - 3.6	Capacitor	ACL, SCL, TSD	No	No	No	-40 to +85	STDFN-6 (1.0 x 1.4)
SLG59M1515V	1.6 mm <sup>2</sup> fast turn on integrated power switch with ramp control, and output discharge	2	20	0.85	V <sub>DD</sub> - 1.5 V	2.5 - 5.5	Capacitor	TSD	No	No	Yes	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M610V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD, RCB	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M611V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	1.0	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD, RCB	No	No	No	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1563V	1.6 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, and PG signal output	2.5	22.5	1.0	V <sub>DD</sub>	1.5 - 5.5	Internally Fixed	TSD, RCB	No	PG	No	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M1460V	1.6 mm <sup>2</sup> fast turn on and nano-power current consumption integrated power switch	2	30	0.85	V <sub>DD</sub> - 1.5 V	2.5 - 5.25	No	No	No	No	Yes	-20 to +70	STDFN-8 (1.0 x 1.6)
SLG59M1466V	1 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and 4-pin package	1	40	2.5	5.5	-	Internally Fixed	No	No	No	Yes	-20 to +70	STDFN-4 (1.0 x 1.0)
SLG59M1442V	1 mm <sup>2</sup> integrated power switch with charge pump, ramp control, protection, and 4-pin package	1	40	2.5	5.5	-	Resistor	TSD	No	No	No	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1440V	1 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	40	2.5	5.5	-	Resistor	TSD	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1495V	1 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	80	2.5	5.5	-	Resistor	TSD	No	No	Yes	-20 to +70	STDFN-4 (1.0 x 1.0)

## Single P-Channel Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1693C	0.56 mm <sup>2</sup> ultra-low power integrated power switch with charge pump, and output discharge	1	17.4	0.8	2	-	No	No	No	No	Yes	-40 to +85	WLCSP-4 (0.75 x 0.75)
SLG59M1649V	1.6 mm <sup>2</sup> , integrated power switch with reverse-current blocking, reverse-voltage detection, and output discharge	4	23	1.5	5.5	-	No	UVLO, RCB, RVD	No	FAULT	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1557V	1 mm <sup>2</sup> integrated power switch with output discharge	1	28.5	1.5	5.5	-	Internally Fixed	No	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1558V	1 mm <sup>2</sup> integrated power switch without output discharge	1	28.5	1.5	5.5	-	Internally Fixed	No	No	No	No	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1736C	0.64 mm <sup>2</sup> integrated power switch with controlled inrush current, and output discharge	2.2	33	2.5	5.5	-	No	Fixed ICL	No	No	Yes	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1730C	0.64 mm <sup>2</sup> integrated power switch with controlled inrush current, and output discharge	1	33	2.5	5.5	-	No	Fixed ICL	No	No	Yes	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1748C	0.64 mm <sup>2</sup> integrated power switch with reverse-current blocking, reverse-voltage detection, and ramp control	2.2	36	1.6	5	-	Internally Fixed	RCB, RVD	No	No	No	-40 to +85	WLCSP-4 (0.8 x 0.8)

## Dual N-Channel Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1804V	3 mm <sup>2</sup> , UL2367-certified, dual-channel integrated power switch with charge pump, ramp control, output discharge, and protection	4.5	14.5	0.9	V <sub>DD</sub>	2.5 - 5.0	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1527V	3 mm <sup>2</sup> , dual-channel integrated power switch with charge pump, ramp control, output discharge, and protection	4.5	14.5	0.9	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1603V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4.5	16	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1606V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, and protection	4.5	16	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)

## Dual N-Channel Integrated Power Switches (continued)

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1612V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, protection, and one-channel output discharge	4.5	16	1	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	CH1: Yes; CH2: No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1446V	1 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and 4-pin package	1	40	0.85	V <sub>DD</sub>	2.5 - 5.5	Resistor	TSD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1599V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with charge pump, ramp control, and protection	1	40	0.85	V <sub>DD</sub>	2.5 - 5.5	Resistor	TSD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1512V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with charge pump, ramp control, output discharge, and protection	1	80	0.85	V <sub>DD</sub>	2.5 - 5.5	Resistor	TSD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)

## Dual P-Channel Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1638V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, output discharge, and active high ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1639V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, and active high ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1640V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, output discharge, and active low ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1641V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, and active low ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)



## Reverse-Current Blocking Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1600V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	9	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1655V	3 mm <sup>2</sup> , integrated power switch with reverse-current blocking, charge pump, ramp control and protection	9	7.8	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1571V	1 mm <sup>2</sup> , low-voltage integrated power switch with reverse-current blocking, charge pump, output discharge, protection, and 4-pin package	1	14.6	0.85	1.9	-	No	TSD, RCB	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1714V	4 mm <sup>2</sup> , integrated power switch with reverse-current blocking, charge pump, IDS current monitor output, output discharge, and protection	4	15	0.8	V <sub>DD</sub>	2.5 - 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD, RCB	Current	FAULT	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1603V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4.5	16	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1606V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, and protection	4.5	16	0.85	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1612V	3 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, charge pump, ramp control, protection, and one-channel output discharge	4.5	16	1	V <sub>DD</sub>	2.5 - 5.5	Capacitor	TSD, RCB	No	No	CH1: Yes; CH2: No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M610V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	1	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD, RCB	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M611V	3 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	1	V <sub>DD</sub>	2.5 - 5.5	Capacitor	ACL, SCL, TSD, RCB	No	No	No	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1563V	1.6 mm <sup>2</sup> integrated power switch with reverse-current blocking, charge pump, and PG signal output	2.5	22.5	1	V <sub>DD</sub>	1.5 - 5.5	Internally Fixed	TSD, RCB	No	PG	No	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M1649V	1.6 mm <sup>2</sup> , integrated power switch with reverse-current blocking, reverse-voltage detection, and output discharge	4	23	1.5	5.5	-	No	UVLO, RCB, RVD	No	FAULT	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1748C	0.64 mm <sup>2</sup> integrated power switch with reverse-current blocking, reverse-voltage detection, and ramp control	2.2	36	1.6	5.0	-	Internally Fixed	RCB, RVD	No	No	No	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1639V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, and active high ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)

## Reverse-Current Blocking Integrated Power Switches (continued)

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1641V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, and active low ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1638V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, output discharge, and active high ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1640V	1.6 mm <sup>2</sup> , dual-channel integrated power switch with reverse-current blocking, reverse-voltage detection, output discharge, and active low ON-OFF control	2	45	1.5	5.5	-	No	UVLO, RCB, RVD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)

## Notebook PC Reference Design Integrated Power Switches

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG5NT1533V	1.6 mm <sup>2</sup> fast turn on integrated power switch with ramp control, and output discharge for 1 V processor power control	2.5	20	0.85	V <sub>DD</sub> - 1.5V	2.5 - 5.5	Capacitor	TSD	No	No	Yes	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG5NT1477V	3 mm <sup>2</sup> fast turn on, nano-power current consumption integrated power switch for 1 V processor power control	6	9.8	0.85	V <sub>DD</sub> - 1.5V	3.0 - 5.25	No	No	No	No	Yes	-40 to +85	TDFN-9 (1.5 x 2.0)

## \* Notes:

1. ACL - Internally Fixed Active Current Limit
2. ACL(R) - External resistor-adjustable Active Current Limit
3. SCL - Internally Fixed Short-circuit Current Limit
4. Fixed ICL – Internally Fixed Inrush Current Limit
5. RVD – Reverse-voltage Detection
6. RCB – Reverse-current Blocking
7. TSD – Overtemperature protection (Thermal Shutdown)
8. UVLO – Undervoltage Protection
9. OVLO – Overvoltage protection
10. TVS – Internal Transient Voltage Suppressor





## High-voltage, High-current, Ultra Low RDS<sub>ON</sub> Integrated Power Control Switches Selector Guide

Dialog’s family of high-performance integrated power switches include high-voltage capability for all high-side, 4.5 V to 24 V power rail applications up to 6 A. Using Dialog’s proprietary MOSFET design, this new family of power control switches achieves ultra-stable and low RDS<sub>ON</sub> across a wide input voltage range. Combining Dialog’s proprietary MOSFET IP and advanced assembly techniques, these products are available in very pcb space-efficient footprints and exhibit low thermal resistance for high-current operation. Compared to discrete FETs currently used in high-voltage applications, Dialog’s HFET1 products combine high-performance nFET structures, charge pumps, multiple protection, and control circuits into feature-rich products.

For products rated to operate over the industrial (-40 °C to 85 °C) or extended industrial temperature (-40 °C to 125 °C) range, these high-voltage integrated power control switches are available in low thermal resistance, RoHS-compliant packaging or wafer level chip scale packaging (WLCSP).

### Featured Products

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/ Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1302C	5.04 mm <sup>2</sup> surge-protected, 28V tolerant USB Type C Power Splitter/Switch with charge pump, LDO and PG signal output	OUT: 6 SYS: 6	OUT: 12 SYS: 24	2.7	13.3	-	No	OVLO, UVLO, TVS, SYS: RCB	No	OUT: no SYS: PG	No	-40 to +85	WLCSP-28 (2.98 x 1.69)
SLG59H1313C	2.34 mm <sup>2</sup> surge-protected, 29V tolerant nFET integrated power switch with Internal 100V TVS and Adjustable OVP in WLCSP	4.5	23	2.5	20	-	No	OVLO, ACL, SCL, TSD, TVS	No	PG	No	-40 to +85	WLCSP-12 (1.3 x 1.8)

\* Notes (Please consult product specifications for additional information):

1. ACL - Internally Fixed Active Current Limit
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3. SCL - Internally Fixed Short-circuit Current Limit
4. Fixed ICL – Internally Fixed Inrush Current Limit
5. RVD – Reverse-voltage Detection
6. RCB – Reverse-current Blocking
7. TSD – Overtemperature protection (Thermal Shutdown)
8. UVLO – Undervoltage Protection
9. OVLO – Overvoltage protection
10. TVS – Internal Transient Voltage Suppressor



High-voltage, High-current, Ultra Low RDS<sub>ON</sub>  
Integrated Power Control Switches Selector Guide

For Applications up to 13.2 V

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1127V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and Power Good Output	4	15	4.5	13.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	No	PG, FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1120V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	5	18	4.5	13.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1126V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	6	18	4.5	13.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)

For Applications up to 25.2 V

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1013V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> lockout protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output for enterprise printer/copier applications	3.5	13.3	10.8	25.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +125	STQFN-18 (1.6 x 3.0)
SLG59H1017V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> lockout protection, internal 10W nFET SOA protection, and I <sub>DS</sub> current monitor output for enterprise printer/copier applications	4	13.3	10.8	25.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1008V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> lockout protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output for enterprise printer/copier applications	4	13.3	10.8	25.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1010V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> lockout protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output for enterprise printer/copier applications	5	13.3	10.8	25.2	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1019V	4.8 mm <sup>2</sup> integrated power switch with V <sub>IN</sub> OVLO disabled, internal 10W nFET SOA protection, and I <sub>DS</sub> current monitor output	5	13	4.5	25.2	-	Capacitor	UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)



High-voltage, High-current, Ultra Low RDS<sub>ON</sub>  
Integrated Power Control Switches Selector Guide

For Applications up to 25.2 V (continued)

Part Number	Description	Max I <sub>DS</sub> (A)	RDS <sub>ON</sub> (mΩ)	V <sub>D</sub> /V <sub>IN</sub> Min (V)	V <sub>D</sub> /V <sub>IN</sub> Max (V)	Power Supply (V <sub>DD</sub> ) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current/Power Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1016V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	3.5	13.1	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +125	STQFN-18 (1.6 x 3.0)
SLG59H1009V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	4	13.1	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1128V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 10W nFET SOA protection, and I <sub>DS</sub> current monitor output	5	13.1	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1006V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	5	13.1	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1007V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and load-power monitor output	5	13.3	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Power	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1012V	4.8 mm <sup>2</sup> integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	6	13.1	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Current	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1005V	4.8 mm <sup>2</sup> back-to-back reverse-current blocking integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	3	50	4.5	22	-	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD, RCB	Current	FAULT	No	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1020V	4.8 mm <sup>2</sup> back-to-back reverse-current blocking integrated power switch with pin-selectable V <sub>IN</sub> overvoltage protection, internal 5W nFET SOA protection, and I <sub>DS</sub> current monitor output	3	50	4.5	20	-	Capacitor	OVLO, ACL(R), SCL, TSD, RCB	Current	FAULT	No	-40 to +85	STQFN-18 (1.6 x 3.0)

\* Notes:

1. ACL - Internally Fixed Active Current Limit
2. ACL(R) - External resistor-adjustable Active Current Limit
3. SCL - Internally Fixed Short-circuit Current Limit
4. Fixed ICL – Internally Fixed Inrush Current Limit
5. RVD – Reverse-voltage Detection
6. RCB – Reverse-current Blocking

7. TSD – Overtemperature protection (Thermal Shutdown)
8. UVLO – Undervoltage Protection
9. OVLO – Overvoltage protection
10. TVS – Internal Transient Voltage Suppressor

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