

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  $R_{\text{DS(on)}}$  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  $R_{\text{DS(on)}}$  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	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features*	Discharge Circuit	Package Size (mm)
SLG59M1717V	A 4 mm <sup>2</sup> , 5 A nFET integrated power switch with 0.8 V to VDD input range, multiple protection features, fast VOUT discharge, and open-drain Power Good output signaling	5	4	2.5	5.5	0.8	VDD	Capacitor	CL (R), TSD	Yes	1.6 x 2.5 x 0.55
SLG59M1709V	A 4 mm <sup>2</sup> , 4 A nFET power control switch with 0.8 V to VDD input range and multiple protection features	4	4	2.5	5.5	0.8	VDD	Capacitor	Fixed CL, TSD	No	1.6 x 2.5 x 0.55
SLG59M1710V	A 4 mm <sup>2</sup> , 2 A nFET power control switch with 0.8 V to VDD input range and multiple protection features	2	4	2.5	5.5	0.8	VDD	Capacitor	Fixed CL, TSD	No	1.6 x 2.5 x 0.55
SLG59M1713V	A 4 mm <sup>2</sup> , 2 A nFET power control switch with 0.8 V to VDD input range, multiple protection features, and fast VOUT discharge	2	4	2.5	5.5	0.8	VDD	Capacitor	Fixed CL, TSD	Yes	1.6 x 2.5 x 0.55
SLG59M1568V	A 3 mm <sup>2</sup> , 9 A nFET power switch with charge pump, ramp control, output discharge, and protection	9	7.3	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1456V	A 3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	5	7.8	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M1457V	Ultra-small 7.8 mΩ, 6 A 3 mm <sup>2</sup> power switch with 0.85 VD, discharge, and two-level current-limit	6	7.8	2.5	5.5	0.85	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M1496V	A 3 mm <sup>2</sup> integrated power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	5.3	7.8	2.5	5.5	0.85	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M1600V	A 3 mm <sup>2</sup> , 9 A reverse-current blocking nFET power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	9	7.8	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	Yes	1.0 x 3.0 x 0.55
<b>NEW</b> SLG59M1655V	A 3 mm <sup>2</sup> , 9 A reverse-current blocking nFET power switch with charge pump, 0.85 VD, ramp control, and circuit protection	9	7.8	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	No	1.0 x 3.0 x 0.55
SLG59M301V	A 3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	4	7.8	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M307V	A 3 mm <sup>2</sup> integrated power switch with charge pump, 0.85 VD, ramp control, and output discharge	4	7.8	1.5	5.5	0.85	VDD	Capacitor	No	Yes	1.5 x 2.0 x 0.75
SLG59M308V	A 3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, output discharge, and protection	3	7.8	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M309V	A 3 mm <sup>2</sup> integrated power switch with charge pump, ramp control, and protection	4	7.8	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD	No	1.5 x 2.0 x 0.75
SLG59M1657V	A 3 mm <sup>2</sup> , 125 °C-rated, 4 A integrated power switch with 0.9 V to VDD input range, adjustable ramp control, and multiple protection features	4	8.4	2.5	5.5	0.9	VDD	Capacitor	CL, TSD	No	1.5 x 2.0 x 0.75
SLG59M1614V	A 3 mm <sup>2</sup> integrated power switch with charge pump, 0.85 VD, ramp control, and output discharge	4	8.5	2.5	5.5	0.85	VDD	Capacitor	Fixed CL, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M1470V	<b>NanopowerFET™</b> : A 3 mm <sup>2</sup> fast turn on, 0.85 VD nano-power consumption power switch	6	9.8	3.0	5.25	0.85	VDD - 1.5 V	No	No	Yes	1.5 x 2.0 x 0.75
<b>NEW</b> SLG59M1685C	A Low Power, 10 mΩ, 2 A, 0.82 mm <sup>2</sup> WLCSP Integrated Power Switch with Multiple Protection Features	2	10	1.3	3.6	1.3	VDD	Internally Fixed	Fixed CL, TSD	Yes	0.71 x 1.16 x 0.4
SLG59M1735C	A 10.5 mΩ, 4 A nFET IPS with Soft-start and Protection Features in a 1.5 mm <sup>2</sup> WLCSP	4	10.5	2.5	5.5	0.9	VDD	Capacitor	Fixed CL, TSD	No	0.96 x 1.56 x 0.4
SLG59M1707V	A 4 mm <sup>2</sup> , 125 °C-rated, 4 A Integrated Power Switch with Analog Current Monitor Output, and open-drain FAULT signaling output	3.5	13	2.5	5.5	0.8	VDD	Internally Fixed	CL (R), TSD	Yes	1.6 x 2.5 x 0.55



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

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	V <sub>DDI</sub> (V)	V <sub>DDH</sub> (V)	V <sub>D/VIN</sub> Min (V)	V <sub>D/VIN</sub> Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1571V	A 1 mm <sup>2</sup> , low-voltage, 0.85 VD, reverse-current blocking power switch with charge pump, output discharge and protection, and 4-pin package	1	14.6	-	-	0.85	1.9	No	RCB, TSD	Yes	1.0 x 1.0 x 0.55
SLG59M1714V	A 4 mm <sup>2</sup> , 4 A back-to-back nFET reverse-current blocking power control switch with Analog current-monitor output, fast V <sub>OUT</sub> discharge, and open-drain FAULT signaling output	4	15	2.5	5.5	0.8	VDD	Internally Fixed	CL (R), TSD, RCB	Yes	1.6 x 2.5 x 0.55
SLG59M1551V	A 1 mm <sup>2</sup> , low voltage power switch with charge pump, 0.85 VD, output discharge, protection, and 4-pin package	2	15.5	-	-	0.85	1.9	No	TSD	Yes	1.0 x 1.0 x 0.55
SLG59M1556V	A 1 mm <sup>2</sup> , low voltage power switch with charge pump, 0.85 VD, protection, and 4-pin package	2	15.5	-	-	0.85	1.9	No	TSD	No	1.0 x 1.0 x 0.55
SLG59M1658V	A 1.6 mm <sup>2</sup> , 125 °C-rated, 2.5 A integrated power switch 0.9 V to VDD input range, adjustable ramp control, fast V <sub>OUT</sub> discharge, and multiple protection features	2.5	17	2.5	5.5	0.9	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 1.6 x 0.55
SLG59M1448V	A 1.6 mm <sup>2</sup> integrated power switch with charge pump, 0.9 VD, ramp control, output discharge, and protection	2.5	17	2.5	5.5	0.9	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 1.6 x 0.55
SLG59M1545V	A 1.6 mm <sup>2</sup> integrated power switch with charge pump, 0.85 VD, ramp control, and protection	2.5	17	2.5	5.5	0.85	VDD	Capacitor	Fixed CL, TSD	No	1.0 x 1.6 x 0.55
SLG59M1598V	A 1.6 mm <sup>2</sup> integrated power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	2.5	17	2.5	5.5	0.85	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 1.6 x 0.55
NEW SLG59M1746C	A 0.82 mm <sup>2</sup> WLCSP, 17.6 mΩ, 1 A Integrated Power Switch with Controlled Inrush Current and Fast V <sub>OUT</sub> Discharge	1	17.6	2.7	3.6	0.25	1.5	Internally Fixed	No	Yes	0.71 x 1.16 x 0.4
SLG59M1742C	A 0.82 mm <sup>2</sup> WLCSP, 18 mΩ, 1 A Integrated Power Switch with 550 μs Total Turn-on Time	1	18	2.7	3.6	0.25	1.5	No	No	Yes	0.71 x 1.16 x 0.4
SLG59M1720V	A 1.4 mm <sup>2</sup> , 18 mΩ, 2 A Integrated Power Switch with VS Slew-rate Control, Current-Limiting, and Thermal Protection	2	18	2.5	3.6	0.85	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 1.4 x 0.55
SLG59M1721V	A 1.4 mm <sup>2</sup> , 18 mΩ, 2 A Integrated Power Switch with VS Slew-rate Control, Current-Limiting, and Thermal Protection	2	18	2.5	3.6	0.85	VDD	Capacitor	Fixed CL, TSD	No	1.0 x 1.4 x 0.55
SLG59M1515V	A 1.6 mm <sup>2</sup> fast turn on power switch with charge pump, 0.85 VD, ramp control, and output discharge	2	20	2.5	5.5	0.85	VDD - 1.5 V	Capacitor	TSD	Yes	1.0 x 1.6 x 0.55
SLG59M610V	Single 3 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD, RCB	Yes	1.5 x 2.0 x 0.75
SLG59M611V	Single 3 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, TSD, RCB	No	1.5 x 2.0 x 0.75
SLG59M1563V	Single 1.6 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, and PG signal output	2.5	22.5	1.5	5.5	1.0	VDD	No	TSD, RCB	No	1.0 x 1.6 x 0.55
SLG59M1460V	<b>NanopowerFET™</b> : A 1.6 mm <sup>2</sup> fast turn on and nano-power consumption power switch	2	30	2.5	5.25	0.85	VDD - 1.5 V	No	No	Yes	1.0 x 1.6 x 0.55
SLG59M1466V	A 1 mm <sup>2</sup> power switch with charge pump, fixed ramp control, output discharge, and 4-pin package	1	40	-	-	2.5	5.5	Internally Fixed	No	Yes	1.0 x 1.0 x 0.55
SLG59M1442V	A 1 mm <sup>2</sup> power switch with charge pump, ramp control, protection, and 4-pin package	1	40	-	-	2.5	5.5	Resistor	TSD	No	1.0 x 1.0 x 0.55

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

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1440V	A 1 mm <sup>2</sup> power switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	40	-	-	2.5	5.5	Resistor	TSD	Yes	1.0 x 1.0 x 0.55
SLG59M1495V	A 1 mm <sup>2</sup> power switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	80	-	-	2.5	5.5	Resistor	TSD	Yes	1.0 x 1.0 x 0.55

## Single P-Channel Integrated Power Switches

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
 SLG59M1693C	An ultra-low power, 2 V, 15.8 mΩ, 1.0 A pFET Integrated Power Switch with Discharge in a 0.56 mm <sup>2</sup> WLCSP	1.0	17.4	-	-	0.8	2.0	Internally Fixed	-	Yes	0.75 x 0.75 x 0.4
SLG59M1649V	A 1.6 mm <sup>2</sup> , 23 mΩ, 4 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active HIGH ON-OFF Control	4	23	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55
SLG59M1557V	A 1 mm <sup>2</sup> power switch with output discharge	1	28.5	-	-	1.5	5.5	Internally Fixed	No	Yes	1.0 x 1.0 x 0.55
SLG59M1558V	A 1 mm <sup>2</sup> power switch without output discharge	1	28.5	-	-	1.5	5.5	Internally Fixed	No	No	1.0 x 1.0 x 0.55
SLG59M1736C	A 33 mΩ, 2.2 A pFET IPS with Controlled Inrush Current in a 0.64 mm <sup>2</sup> WLCSP	2.2	33	-	-	2.5	5.5	No	Fixed IIN	Yes	0.8 x 0.8 x 0.4
 SLG59M1730C	A 33 mΩ, 1 A pFET IPS with Controlled Inrush Current in a 0.64 mm <sup>2</sup> WLCSP	1	33	-	-	2.5	5.5	No	Fixed IIN	Yes	0.8 x 0.8 x 0.4
SLG59M1748C	A reverse-current blocking, reverse-voltage detection, 35-mΩ, 2.2-A pFET IPS in a 0.64 mm <sup>2</sup> WLCSP	2.2	36	-	-	1.6	5	Internally Fixed	RCB, RVD	Yes	0.8 x 0.8 x 0.4

## Dual N-Channel Integrated Power Switches

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1804V	A single 3 mm <sup>2</sup> , 8.5 mΩ A dual-channel power switch with charge pump, ramp control, output discharge, and protection, <b>UL2367 Certified</b>	4.5	14.5	2.5	5.0	0.9	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1527V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel power switch with charge pump, ramp control, output discharge, and protection	4.5	14.5	2.5	5.5	0.9	VDD	Capacitor	Fixed CL, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1603V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	4.5	16	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1606V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, ramp control, and protection	4.5	16	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	No	1.0 x 3.0 x 0.55

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

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1612V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, ramp control, one-channel output discharge, and protection	4.5	16	2.5	5.5	1.0	VDD	Capacitor	RCB, TSD	CH1: Yes CH2: No	1.0 x 3.0 x 0.55
SLG59M1446V	In a single 1.6 mm <sup>2</sup> package, a 2 A dual-channel power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	1	40	2.5	5.5	0.85	VDD	Resistor	TSD	Yes	1.0 x 1.6 x 0.55
SLG59M1599V	In a single 1.6 mm <sup>2</sup> package, a 2 A dual-channel power switch with charge pump, ramp control, and protection	1	40	2.5	5.5	0.85	VDD	Resistor	TSD	No	1.0 x 1.6 x 0.55
SLG59M1512V	In a single 1.6 mm <sup>2</sup> package, a 2 A dual-channel power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	1	80	2.5	5.5	0.85	VDD	Resistor	TSD	Yes	1.0 x 1.6 x 0.55

## Dual P-Channel Integrated Power Switches

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1638V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active HIGH ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55
SLG59M1639V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection and Active HIGH ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	No	1.0 x 1.6 x 0.55
SLG59M1640V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active LOW ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55
SLG59M1641V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection and Active LOW ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	No	1.0 x 1.6 x 0.55


## Reverse-Current Blocking Integrated Power Switches

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1600V	A 3 mm <sup>2</sup> , 9 A reverse-current blocking nFET power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	9	7.8	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1655V	A 3 mm <sup>2</sup> , 9 A reverse-current blocking nFET power switch with charge pump, 0.85 VD, ramp control, and circuit protection	9	7.8	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	No	1.0 x 3.0 x 0.55





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

Part Number	Description	Cont. IDS (A)	R <sub>DS(on)</sub> (mΩ)	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG59M1571V	A 1 mm <sup>2</sup> , low-voltage, 0.85 VD, reverse-current blocking power switch with charge pump, output discharge, protection, and 4-pin package	1	14.6	-	-	0.85	1.9	No	RCB, TSD	Yes	1.0 x 1.0 x 0.55
SLG59M1714V	A 4 mm <sup>2</sup> , 4 A back-to-back nFET reverse-current blocking power control switch with Analog current-monitor output, fast VOUT discharge, and open-drain FAULT signaling output	4	15	2.5	5.5	0.8	VDD	Internally Fixed	CL (R), RCB, TSD	Yes	1.6 x 2.5 x 0.55
SLG59M1603V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, 0.85 VD, ramp control, output discharge, and protection	4.5	16	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	Yes	1.0 x 3.0 x 0.55
SLG59M1606V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, ramp control, and protection	4.5	16	2.5	5.5	0.85	VDD	Capacitor	RCB, TSD	No	1.0 x 3.0 x 0.55
SLG59M1612V	In a single 3 mm <sup>2</sup> package, a 9 A dual-channel reverse-current blocking power switch with charge pump, ramp control, one-channel output discharge, and protection	4.5	16	2.5	5.5	1.0	VDD	Capacitor	RCB, TSD	CH1: Yes CH2: No	1.0 x 3.0 x 0.55
SLG59M610V	Single 3 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, RCB, TSD	Yes	1.5 x 2.0 x 0.75
SLG59M611V	Single 3 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	2.5	5.5	1.0	VDD	Capacitor	Fixed CL, RCB, TSD	No	1.5 x 2.0 x 0.75
SLG59M1563V	Single 1.6 mm <sup>2</sup> power switch with reverse-current blocking, charge pump, and PG signal output	2.5	22.5	1.5	5.5	1.0	VDD	No	RCB, TSD	No	1.0 x 1.6 x 0.55
SLG59M1649V	A 1.6 mm <sup>2</sup> , 23 mΩ, 4 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active HIGH ON-OFF Control	4	23	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55
 SLG59M1748C	A reverse-current blocking, reverse-voltage detection, 35-mΩ, 2.2-A pFET IPS in a 0.64 mm <sup>2</sup> WLCSP	2.2	35	-	-	1.6	5	Internally Fixed	RCB, RVD	Yes	0.8 x 0.8 x 0.4
SLG59M1639V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection and Active HIGH ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	No	1.0 x 1.6 x 0.55
SLG59M1641V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection and Active LOW ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	No	1.0 x 1.6 x 0.55
SLG59M1638V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active HIGH ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55
SLG59M1640V	A 1.6 mm <sup>2</sup> , Dual-channel 45 mΩ, 2 A Power Switch with reverse-current blocking, reverse-voltage detection, VOUT discharge, and Active LOW ON-OFF Control	2	45	-	-	1.5	5.5	No	RCB, RVD	Yes	1.0 x 1.6 x 0.55

## Notebook PC Reference Design Integrated Power Switches

Part Number	Description	Cont. IDS (A)	$R_{DS(on)}$ (m $\Omega$ )	VDDI (V)	VDDh (V)	VD/VIN Min (V)	VD/VIN Max (V)	External Ramp Control	Protection Features	Discharge Circuit	Package Size (mm)
SLG5NT1533V	A 1.6 mm <sup>2</sup> fast turn on power switch with charge pump, 0.85 VD, ramp control, and output discharge for 1 V processor power control	2	20	2.5	5.25	0.85	VDD - 1.5V	Capacitor	No	Yes	1.0 x 1.6 x 0.55
SLG5NT1477V	NanopowerFET™: A 3 mm <sup>2</sup> fast turn on, 0.85 VD nano-power consumption power switch	6	9.8	3.0	5.25	0.85	VDD - 1.5V	No	No	Yes	1.5 x 2.0 x 0.75

## \* Notes:

1 Fixed CL – Two-stage Current-limit:

- a) Internally Fixed Active Current Limit and
- b) Internally Fixed Short-circuit Current Protection

2. CL(R)-Two-stage Current-limit:

- a) External resistor-adjustable Active Current Limit and
- b) Internally Fixed Short-circuit Current Protection

 3. Fixed  $I_{IN}$  – Fixed  $V_{IN}$  Inrush Current

4. RVD – Reverse-voltage Detection

5. RCB – Reverse-current Blocking

6. TSD – For those 85 °C-rated products with thermal shutdown protection, the threshold is set at 125 °C with 25 °C hysteresis. For 125 °C-rated products, thermal shutdown threshold is set at 150 °C with 20 °C hysteresis. All products automatically attempt a restart operation when die temperature cools.