

GreenFET

Product Selection Guide



GreenFET

超低ON抵抗ロードスイッチセレクションガイド

ルネサスのGreenFETファミリは、高性能なロードスイッチで構成されており、0.25Vから5.5Vの範囲で動作するすべてのハイサイド電源レール制御アプリケーションに最適化されています。対応する負荷電流は1Aから9Aです。

ルネサス独自のMOSFET設計技術を用いることで、すべてのGreenFETロードスイッチは、広い入力電圧および供給電圧範囲にわたって超安定なオン抵抗 (RDS(on)) を実現しています。さらに、ルネサスの独自MOSFET IPと先進的な実装技術を組み合わせることで、これらの最先端製品は、0.56 mm²から4 mm²という超小型の基板フットプリントで提供され、高電流動作に適した低熱抵抗を備えています。

個別のGreenFET回路構成と比較して、ルネサスのGreenFET製品は、高性能なnFETまたはpFET構造、高電流処理能力、チャージポンプ、さらに複数の保護および制御回路を、スペース効率の高いシングルチャネルおよびデュアルチャネル製品に統合しています。

これらの先進機能をすべて組み合わせることで、部品表 (BOM) の部品点数およびコストの削減、システムの信頼性向上、基板サイズの縮小といった効果が直接的にもたらされます。

ルネサスのすべてのGreenFET低電圧ロードスイッチは、商用温度範囲 (0°C~70°C)、拡張商用温度範囲 (-20°C~70°C)、産業用温度範囲 (-40°C~85°C)、および拡張産業用温度範囲 (-40°C~125°C) にわたって設計・完全特性評価されています。

非常に低い熱勾配を実現する設計に基づき、ルネサスの統合型電源制御スイッチは、低熱抵抗のSTDFN/STQFNパッケージ (RoHS準拠) またはウェーハレベル・チップスケールパッケージ (WLCSP) で提供されています。

RenesasのGreenFET高性能ロードスイッチ製品ファミリの特長

- 高機能低ON抵抗nFET & pFET MOSFETs
- 最小で4 mΩから
- 内部保護機能:
 - 電源低電圧ロックアウト保護機能内蔵
 - 電源過電圧保護機能内蔵
 - 高速VOUT放電機能 (VOUT放電機能の無効化オプションあり)
 - 固定式および抵抗による調整可能な電流制限保護機能
 - 短絡電流保護機能内蔵
 - 自動再起動またはラッチオフ機能付きの内蔵サーマルシャットダウン保護
 - バルクスイッチまたはバック・トゥ・バックFETによる逆電流遮断機能
 - 逆電圧検出機能 (特定の品番に搭載)
 - 安全動作領域 (SOA) 保護機能
- アクティブHighのON/OFF制御 (アクティブLowのON/OFF制御も対応可能)
- オープンドレイン出力による「FAULT」信号通知機能 (特定の品番に搭載)
- オープンドレイン出力による「Power Good」信号通知機能 (特定の品番に搭載)
- ウェーハレベル・チップスケール・パッケージ (特定の品番に対応)
- UL2367認証取得済み (特定の品番)

アプリケーション:

- スマートフォンとフィットネスバンド
- ノートブックとタブレットPC
- エンタープライズネットワーク
- マルチファンクションプリンタ
- エンタープライズコンピューティング
- セットトップボックス
- HDD/SSD
- PCIe/PCI アダプタカード
- ポータブル電子機器
- 汎用のハイサイド電源レール制御

Single N-Channel Load Switches

Part Number	Description	Max I _{DS} (A)	RDS _{on} (mΩ)	VD/VIN Min (V)	V _D /V _{IN} Max (V)	Power Supply (V _{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1717V	4 mm ² load switch with charge pump, ramp control, output discharge, protection, and PG signal output	5	4	0	VDD	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 ² load switch with charge pump, ramp control, and protection	4	4	0	VDD	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 ² load switch with charge pump, ramp control, output discharge, and protection	2	4	0	VDD	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 ² load switch with charge pump, ramp control, output discharge, and protection	9	7	1	VDD	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1456V	3 mm ² load switch with charge pump, ramp control, output discharge, and protection	5	8	1	VDD	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-20 to +70	TDFN-8 (1.5 x 2.0)
SLG59M1457V	3 mm ² load switch with charge pump, output discharge, and protection	6	8	0	VDD	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1496V	3 mm ² load switch with charge pump, ramp control, output discharge, and protection	5	8	0	VDD	2.5 - 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1600V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	9	8	0	VDD	2.5 - 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1655V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control and protection	9	8	0	VDD	2.5 - 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)

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Single N-Channel Load Switches (continued)

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M301V	3 mm ² load switch with charge pump, ramp control, output discharge, and protection	4	9	0	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M307V	3 mm ² load switch with charge pump, ramp control, and output discharge	4	8	0	VDD	1.5 – 5.5	Capacitor	No	No	No	Yes	-20 to +85	TDFN-8 (1.5 x 2.0)
SLG59M308V	3 mm ² load switch with charge pump, ramp control, output discharge, and protection	3	8	1	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +70	TDFN-8 (1.5 x 2.0)
SLG59M309V	3 mm ² load switch with charge pump, ramp control, and protection	4	8	1	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD	No	No	No	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1614V	3 mm ² load switch with charge pump, ramp control, and output discharge	4	9	0	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59M1470V	3 mm ² fast turn on, nano-power current consumption load switch	6	10	0	VDD – 1.5 V	3.0 – 5.25	No	No	No	No	Yes	-40 to +85	TDFN-9 (1.5 x 2.0)
SLG59M1707V	4 mm ² load switch with charge pump, I_{DS} current monitor output, output discharge, and protection	4	13	0	VDD	2.5 – 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +125	STQFN-16 (1.6 x 2.5)
SLG59M1571V	1 mm ² low-voltage load switch with reverse-current blocking, charge pump, output discharge, protection, and 4-pin package	1	15	0	2	–	No	TSD, RCB	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1714V	4 mm ² load switch with reverse-current blocking, charge pump, I_{DS} current monitor output, output discharge, and protection	4	15	0	VDD	2.5 – 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD, RCB	Yes	FAULT	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1551V	1 mm ² low voltage load switch with charge pump, output discharge, protection, and 4-pin package	2	16	0	2	–	No	TSD	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1658V	1.6 mm ² load switch with charge pump, ramp control, output discharge, and protection	3	17	0	VDD	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 ² load switch with charge pump, ramp control, output discharge, and protection	3	17	0	VDD	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 ² load switch with charge pump, ramp control, and protection	3	17	0	VDD	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 ² load switch with charge pump, ramp control, output discharge, and protection	3	17	0	VDD	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 ² load switch with output discharge	1	18	0	2	2.7 – 3.6	Internally Fixed	No	No	No	Yes	-40 to +85	WLCSP-6L (0.71 x 1.16)
SLG59M1515V	1.6 mm ² fast turn on load switch with ramp control, and output discharge	2	20	0	VDD – 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 ² load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	1	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD, RCB	No	No	Yes	-40 to +85	TDFN-8 (1.5 x 2.0)
SLG59H1132V	4.8 mm ² load switch with pin-selectable V_{IN} overvoltage protection, internal 25W nFET SOA protection, I_{DS} current monitor output, fault, and PG signaling	6	13	4.5	22	–	Capacitor	OVLO, UVLO, ACL(R) SCL, TSD	Yes	PG, FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)

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Single N-Channel Load Switches (continued)

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M611V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	1	V_{DD}	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 ² load switch with reverse-current blocking, charge pump, and PG signal output	3	23	1	V_{DD}	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 ² fast turn on and nano-power current consumption load switch	2	30	0	$V_{DD} - 1.5$ V	2.5 – 5.25	No	No	No	No	Yes	-20 to +70	STDFN-8 (1.0 x 1.6)
SLG59M1440V	1 mm ² load switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	40	3	6	–	Resistor	TSD	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1495V	1 mm ² load switch with charge pump, ramp control, output discharge, protection, and 4-pin package	1	80	3	6	–	Resistor	TSD	No	No	Yes	-20 to +70	STDFN-4 (1.0 x 1.0)
SLG59M1780V	4 mm ² load switch with charge pump, ramp control, output discharge, and protection	4	4	0	VDD	2.5 – 5.5	Capacitor	UVLO, ACL, SCL, TSD	No	No	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)

Single P-Channel Load Switches

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1649V	1.6 mm ² load switch with reverse-current blocking, reverse-voltage detection, and output discharge	4	23	2	6	–	No	UVLO, RCB, RVD	No	FAULT	Yes	-40 to +85	STDFN-8 (1.0 x 1.6)
SLG59M1557V	1 mm ² load switch with output discharge	1	29	2	6	–	Internally Fixed	No	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1558V	1 mm ² load switch without output discharge	1	29	2	6	–	Internally Fixed	No	No	No	No	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1736C	0.64 mm ² load switch with controlled inrush current, and output discharge	2	33	3	6	–	No	Fixed ICL	No	No	Yes	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1730C	0.64 mm ² load switch with controlled inrush current, and output discharge	1	33	3	6	–	No	Fixed ICL	No	No	Yes	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1748C	0.64 mm ² load switch with reverse-current blocking, reverse-voltage detection, and ramp control	2	36	2	5	–	Internally Fixed	RCB, RVD	No	No	No	-40 to +85	WLCSP-4 (0.8 x 0.8)

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Dual N-Channel Load Switches

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1804V	3 mm ² UL2367-certified, dual-channel load switch with charge pump, ramp control, output discharge, and protection	5	15	0	VDD	2.5 – 5.0	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1527V	3 mm ² dual-channel load switch with charge pump, ramp control, output discharge, and protection	5	15	0	VDD	2.5 – 5.5	Capacitor	ACL, SCL, TSD	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1603V	3 mm ² dual-channel load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	5	16	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1606V	3 mm ² dual-channel load switch with reverse-current blocking, charge pump, ramp control, and protection	5	16	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1446V	1 mm ² load switch with charge pump, ramp control, output discharge, and 4-pin package	1	40	0	VDD	2.5 – 5.5	Resistor	TSD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1599V	1.6 mm ² dual-channel load switch with charge pump, ramp control, and protection	1	40	0	VDD	2.5 – 5.5	Resistor	TSD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1512V	1.6 mm ² dual-channel load switch with charge pump, ramp control, output discharge, and protection	1	80	0	VDD	2.5 – 5.5	Resistor	TSD	No	No	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)

Dual P-Channel Load Switches

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1639V	1.6 mm ² dual-channel load switch with reverse-current blocking, reverse-voltage detection, and active high ON-OFF control	2	45	2	6	–	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1641V	1.6 mm ² dual-channel load switch with reverse-current blocking, reverse-voltage detection, and active low ON-OFF control	2	45	2	6	–	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)

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Reverse-Current Blocking Load Switches

Part Number	Description	Max I _{DS} (A)	RDS _{ON} (mΩ)	V _D /V _{IN} Min (V)	V _D /V _{IN} Max (V)	Power Supply (V _{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59M1600V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	9	8	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1655V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control and protection	9	8	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1571V	1 mm ² low-voltage load switch with reverse-current blocking, charge pump, output discharge, protection, and 4-pin package	1	15	0	2	–	No	TSD, RCB	No	No	Yes	-40 to +85	STDFN-4 (1.0 x 1.0)
SLG59M1714V	4 mm ² load switch with reverse-current blocking, charge pump, I _{DS} current monitor output, output discharge, and protection	4	15	0	VDD	2.5 – 5.5	Internally Fixed	UVLO, ACL(R), SCL, TSD, RCB	Yes	FAULT	Yes	-40 to +85	STQFN-16 (1.6 x 2.5)
SLG59M1603V	3 mm ² dual-channel load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	5	16	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	Yes	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M1606V	3 mm ² dual-channel load switch with reverse-current blocking, charge pump, ramp control, and protection	5	16	0	VDD	2.5 – 5.5	Capacitor	TSD, RCB	No	No	No	-40 to +85	STDFN-14 (1.0 x 3.0)
SLG59M610V	3 mm ² load switch with reverse-current blocking, charge pump, ramp control, output discharge, and protection	4	22	1	VDD	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 ² load switch with reverse-current blocking, charge pump, ramp control, and protection	4	22	1	VDD	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 ² load switch with reverse-current blocking, charge pump, and PG signal output	3	23	1	VDD	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 ² load switch with reverse-current blocking, reverse-voltage detection, and output discharge	4	23	2	6	–	No	UVLO, RCB, RVD	No	FAULT	Yes	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1748C	0.64 mm ² load switch with reverse-current blocking, reverse-voltage detection, and ramp control	2	36	2	5	–	Internally Fixed	RCB, RVD	No	No	No	-40 to +85	WLCSP-4 (0.8 x 0.8)
SLG59M1639V	1.6 mm ² dual-channel load switch with reverse-current blocking, reverse-voltage detection, and active high ON-OFF control	2	45	2	6	–	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)
SLG59M1641V	1.6 mm ² dual-channel load switch with reverse-current blocking, reverse-voltage detection, and active low ON-OFF control	2	45	2	6	–	No	UVLO, RCB, RVD	No	No	No	-40 to +85	STDFN 8 (1.0 x 1.6)

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

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

高耐圧GreenFET

高耐圧, 大電流, 超低ON抵抗ロードスイッチセレクションガイド

ルネサスの高性能ロードスイッチ製品ファミリには、4.5V~25.2Vのハイサイド電源レールアプリケーション(最大6A)に対応する高電圧対応製品が含まれています。

ルネサス独自のMOSFET設計技術を活用することで、この新しい電源制御スイッチファミリは、広い入力電圧範囲にわたって超安定かつ低オン抵抗(RDS(on))を実現しています。さらに、ルネサスの独自MOSFET IPと先進的な実装技術を組み合わせることで、基板スペース効率に優れたフットプリントと、高電流動作に適した低熱抵抗を備えた製品が提供されています。

現在、高電圧アプリケーションで使用されている個別FETと比較して、ルネサスの高電圧GreenFET製品は、高性能nFET構造、チャージポンプ、複数の保護および制御回路を統合した多機能な製品です。

また、産業用(-40°C~85°C)および拡張産業用(-40°C~125°C)の温度範囲で動作する製品については、低熱抵抗かつRoHS準拠のパッケージ、またはウェーハレベル・チップスケールパッケージ(WLCSP)で提供されています。

Featured Products

Part Number	Description	Max I _{DS} (A)	RDS _{ON} (mΩ)	V _D /V _{IN} Min (V)	V _D /V _{IN} Max (V)	Power Supply (V _{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1302C	5.04 mm ² 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	3	13	–	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 ² surge-protected, 29V tolerant nFET load switch with Internal 100V TVS and Adjustable OVP in WLCSP	5	23	3	20	–	No	OVLO, ACL, SCL, TSD, TVS	No	PG	No	-40 to +85	WLCSP-12 (1.3 x 1.8)
SLG59H1341C	1.46 mm ² load switch with V _{IN} undervoltage protection, V _{OUT} overvoltage protection, reverse-current blocking, reverse-voltage detection, and FLT Output	1.3	70	2.5	5.5	–	No	OVLO, UVLO, RCB, RVD, ACL(R), TSD	No	FLT	No	-40 to +85	WLCSP-9 (1.21 x 1.21)
SLG59H1342C	1.46 mm ² load switch with V _{IN} undervoltage and overvoltage protection, reverse-current blocking, reverse-voltage detection, and FLT Output	1.5	70	2.7	5.5	–	No	OVLO, UVLO, RCB, RVD, ACL(R), TSD	No	FLT	No	-40 to +85	WLCSP-9 (1.21 x 1.21)
SLG59H1401C	3.15 mm ² power multiplexer with V _{IN(1,2)} undervoltage protection, resistor-adjustable overvoltage protection, true reverse-current blocking, and channel status indication	3	52	3	6	–	Capacitor	OVLO, UVLO, RCB, RVD, ACL(R), SCL, TSD	No	No	No	-40 to +85	WLCSP-20 (1.585 x 1.985)
SLG59H1403C	3.15 mm ² power multiplexer with V _{IN(1,2)} undervoltage protection, resistor-adjustable overvoltage protection, true reverse-current blocking, and channel status indication	3	52	3	22	–	Capacitor	OVLO, UVLO, RCB, RVD, ACL(R), SCL, TSD	No	No	No	-40 to +85	WLCSP-20 (1.585 x 1.985)
SLG59H1405V	5 mm ² power multiplexer with V _{IN(1,2)} undervoltage and overvoltage protection, Channel 1 true reverse-current blocking, and FLAG Output	Channel 1: 3 Channel 2: 1.25	Channel 1: 40 Channel 2: 67	4	Channel 1: 5.5 Channel 2: 13.2	–	Internally Fixed	OVLO, UVLO, RCB, RVD, ACL(R), SCL, TSD	No	FLAG	Yes	-20 to +85	FC-QFN-12 (2.0 x 2.5)

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

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

For Applications up to 13.2 V

Part Number	Description	Max I _{DS} (A)	RDS _{ON} (mΩ)	V _D /V _{IN} Min (V)	V _D /V _{IN} Max (V)	Power Supply (V _{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1127V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and Power Good Output	4	15	5	13	–	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 ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and DS current monitor output	5	18	5	13	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1126V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I _{DS} current monitor output	6	18	5	13	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)

高耐压 GreenFET

高耐压, 大電流, 超低ON抵抗ロードスイッチセレクションガイド

For Applications up to 25.2 V

Part Number	Description	Max I_{DS} (A)	RDS_{ON} (m Ω)	V_D/V_{IN} Min (V)	V_D/V_{IN} Max (V)	Power Supply (V_{DD}) Voltage Range (V)	Output Voltage Slew Rate set by	Protection Features*	Current Monitor Output	Power Good, FAULT indicator	Output Discharge Circuit	Operating Temperature Range, (°C)	Package Size (mm)
SLG59H1013V	4.8 mm ² load switch with pin-selectable VIN lockout protection, internal 5W nFET SOA protection, and I_{DS} current monitor output for enterprise printer/copier applications	4	13	11	25	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +125	STQFN-18 (1.6 x 3.0)
SLG59H1017V	4.8 mm ² load switch with pin-selectable VIN lockout protection, internal 10W nFET SOA protection, and I_{DS} current monitor output for enterprise printer/copier applications	4	13	11	25	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1008V	4.8 mm ² load switch with pin-selectable VIN lockout protection, internal 5W nFET SOA protection, and I_{DS} current monitor output for enterprise printer/copier applications	4	13	11	25	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1010V	4.8 mm ² load switch with pin-selectable VIN lockout protection, internal 5W nFET SOA protection, and I_{DS} current monitor output for enterprise printer/copier applications	5	13	11	25	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1019V	4.8 mm ² load switch with VIN OVLO disabled, internal 10W nFET SOA protection, and I_{DS} current monitor output	5	13	5	25	–	Capacitor	UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1016V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	4	13	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +125	STQFN-18 (1.6 x 3.0)
SLG59H1009V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	4	13	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1128V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 10W nFET SOA protection, and I_{DS} current monitor output	5	13	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1006V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	5	13	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1012V	4.8 mm ² load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	6	13	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD	Yes	FAULT	Yes	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1005V	4.8 mm ² back-to-back reverse-current blocking load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	3	50	5	22	–	Capacitor	OVLO, UVLO, ACL(R), SCL, TSD, RCB	Yes	FAULT	No	-40 to +85	STQFN-18 (1.6 x 3.0)
SLG59H1020V	4.8 mm ² back-to-back reverse-current blocking load switch with pin-selectable VIN overvoltage protection, internal 5W nFET SOA protection, and I_{DS} current monitor output	3	50	5	20	–	Capacitor	OVLO, ACL(R), SCL, TSD, RCB	Yes	FAULT	No	-40 to +85	STQFN-18 (1.6 x 3.0)

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

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

GreenFET セレクションガイド

renesas.com/load-switchesから製品の詳細な情報を入手できます。セレクションガイドや評価ボード、サンプルの情報も含まれます。

GreenFET
Robust Load Switches

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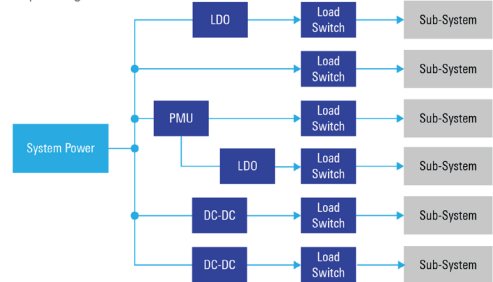
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GreenFET LOAD SWITCH USAGE EXAMPLES

04-05

Power Distribution Application

Load Switch Example Usage



Power Control Application

02-03

GreenFET Load Switch Portfolio

GreenFET

- Single-channel nFET & pFET in STDFN & STDFN (1 mm² to 4 mm²)
- Single-channel in WLCSF (1 A to 4 A, 0.66 mm² to 1.5 mm²)
- Dual-channel nFET and pFET in STDFNs (3 mm²)

Operating input voltage range

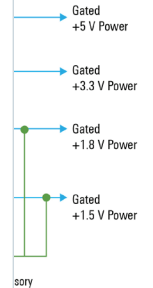
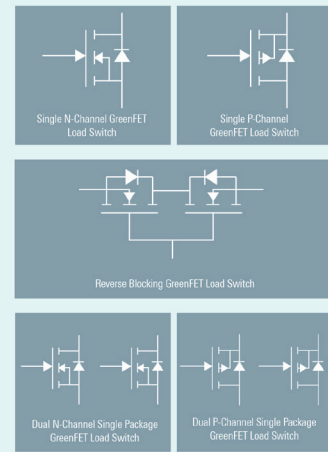
- Maximum V_{in} Voltage Ranges: 2 V, 3.6 V & 5.5 V
- FET V_{th} Range: 0.25 V to V_{DD}
- $R_{DS(on)}$ Range: 4 mΩ to 45 mΩ
- I_{OS} Current Range: 1 A to 9 A
- UL2367 Current-Limiter Certified (select parts)

High voltage GreenFET

- Single-channel (2.3 mm² to 5 mm²)
- Power-supply/FET Input Voltage Ranges: 4.5 V to 25.2 V
- $R_{DS(on)}$ Range: 13.3 mΩ to 50 mΩ
- IDS Current Range: 3 A to 6 A
- WLCSF for Space-Constrained Applications
- UL2367 Current-Limiter Certified (select parts)

High Side Gate Drivers

- N-Channel MOSFET Drivers



GreenFET 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.

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