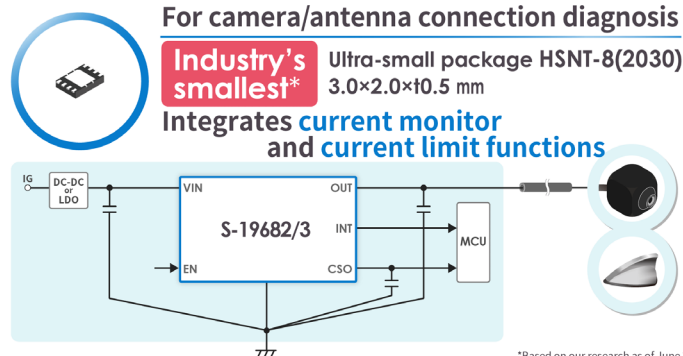


## Delivers "Small, Simple, High-accuracy" connection diagnosis.



HSNT-8(2030)

3.0 x 2.0  
x 10.5 mm

<Conventional 4ch product>

Actual ratio

<S-19682/3>

**Industry's smallest\***

- ✓ Small
- ✓ Space
- ✓ Flexible

### ● The industry's smallest\* ultra-small package

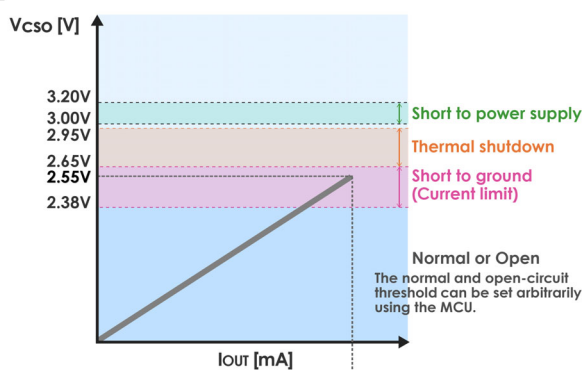
**Small:** The 1-channel high side switch with 36V input, 600mA output, a current monitor function, is housed in **the industry's smallest\* package, HSNT-8(2030).**

**Space:** Unlike conventional multi-channel products, S-19682/3 Series allows a higher degree of board design freedom to simplify board layout design.

**Flexible:** S-19682/3 Series can flexibly accommodate any number of cameras such as driver status monitors or drive recorders.

With the increasing multi-functionality of automotive cameras, antennas and sensors, S-19682/3 Series with its capability to offer connection diagnosis of a variety of applications is a "Small, Space, Flexible" solution that makes it all work.

### Current monitor and connection diagnosis



### ● Simplifies connection diagnosis

S-19682/3 Series is equipped with a CSO pin to output a voltage proportional to the load current.

Since the CSO pin doubles as a status output pin, an MCU can easily monitor the current of cameras, sensors, antennas and other devices as well as diagnose their connection status (open, normal, short to ground and short to power supply) simply by monitoring the CSO pin voltage.

S-19682/3 Series contributes to the safety of the automotive devices with a simple circuit configuration.

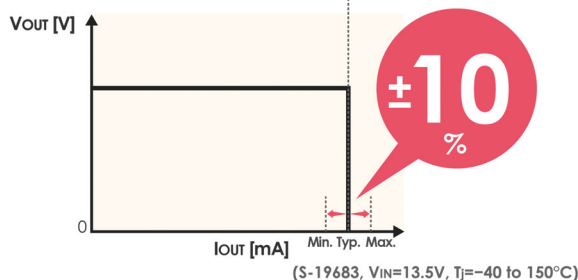
### ● High-accuracy current limit

S-19683 Series limits current with a high accuracy of **±10%** to ensure that load current does not exceed the set value.

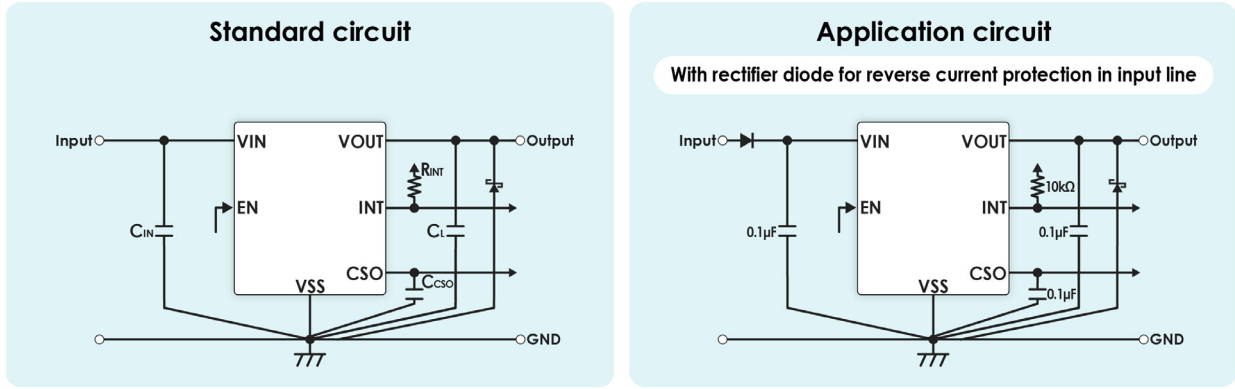
Since the limit current value can be set in the IC, peripheral components do not cause dispersion. Moreover, as the limit current value can be selected in 10mA steps, limits can be closely tailored to the connected load.

As a result, there is no need to set an excessive margin for the DC-DC/LDO stage prior to the high side switch, which reduces the size of the entire ECU and its cost.

### Limit current accuracy



# Circuit Example



## Application Examples

ECUs that require connection diagnosis of external cameras, antennas and sensors

- ADAS ECU
- Camera ECU
- Telematics control unit
- IVI (In-vehicle infotainment system)
- Car navigation system
- Car audio system

Cameras: Sensing camera, view camera, DSM camera

Antennas: 5G, DAB, GNSS, AM/FM, TV, etc.

Various sensors: USS, etc.

Check application examples in the block diagram.



## Automotive Connection Diagnosis IC Product Lineup

Function	Operation temperature range	Output current	Input voltage	Absolute maximum rating	Series	Package
LDO+ Antenna diagnosis*	Ta = -40°C ~ +125°C	400mA	4.5V to 36V	45V	S-19700 Series	HSOP-8A
		600mA	4.5V to 36V	45V	S-19701 Series	TMSOP-8
High side switch+ Camera/Antenna diagnosis	Ta = -40°C ~ +125°C	300mA	4.5V to 36V	45V	S-19682 Series <b>New</b>	HSNT-8(2030)
		600mA	4.5V to 36V	45V	S-19683 Series <b>New</b>	HSNT-8(2030)
High side switch+ Antenna diagnosis	Ta = -40°C ~ +105°C	100mA	2.7V to 10V	12V	S-19680 Series	HSNT-8(2030)

\*Applicable to a high side switch.

## Specifications

Product name	S-19682	S-19683
	<b>Automotive</b>	
Output current	300mA	600mA
Input voltage	4.5V to 36.0V	
Current consumption	During operation: 55µA typ., 95µA max. (Tj = -40°C to +150°C) During power-off: 0.6µA typ., 2.0µA max. (Tj = -40°C to +125°C)	
Limit current	100mA to 300mA, selectable in 10mA step	300mA to 600mA, selectable in 10mA step
Limit current accuracy	±10% (I_LIM(S) = 200mA to 300mA)	±10%
Operation temperature range	Ta = -40°C to +125°C	
AEC-Q100	Qualified	

As of 1/19, 2023. All the information described herein is subject to change without notice.

