Product Overview

NCS5651: Power Line Communcation (PLC) Driver, 2 Amp

For complete documentation, see the data sheet.

The NCS5651 is a high efficiency, class A/B, low distortion power line driver. It is optimized to accept a signal from a power line carrier (PLC) modem. The device consists of two operational amplifiers (opamps). The output opamp is designed to drive up to 2 A peak into an isolation transformer or simple coil coupling to the mains. At an output current of 1.5 A, the output voltage is guaranteed to swing within 1 V or less of either rail giving the user improved SNR.
In addition to the output amplifier, a small-signal opamp is provided which can be configured as a unity gain follower buffer or can provide the first stage of a 4-pole low pass filter.
The NCS5651 offers a current limit, programmable with a single resistor, R-Limit, together with a current limit flag. The device provides two independant thermal flags with hysteresis : a thermal warning flag to let the user know the internal junction temperature has reached a user programmable thermal warning threshold and a thermal error flag that indicates the internal junction temperature has exceeded 150 °C.
The NCS5651 has a power supply voltage range of 6-12 V. It can be shut down, leaving the outputs highly-impedant. The NCS5651 comes in a 20-lead QFN package (4x4x1 mm3) with an exposed thermal pad for enhanced thermal reliability.

Features

- Rail-to-rail : drop of only +/-1 V with Iout = 1.5A
- VBB supply voltage 6-12 V
- Flexible 4th-order filtering
- Current-limit set with one resistor
- Diagnostic flags level shitfted to VCC to simplify interface with external MCU - thermal warning flag with flexible threshold setting - thermal error flag and hutdown - overcurrent flag
- Enable/shutdown control
- Extended junction temperature range : -40 °C to +125 °C
- Small package : 20-pin 4x4x1 mm3 NQFP with exposed thermal pad
- Optimized for operation in the Cenelec A to D frequency band
- This is a Pb-free device

  For more features, see the data sheet

Applications

- Smart and renewable energy controls
- Solar panel control
- Smart street lighting control
- In-home display for split metering
- Home and building automation

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Rail to Rail	Channels	V_S Min (V)	V_S Max (V)	I_q Typ (mA)	V_{OS} Max (mV)	GBW Typ (MHz)	SR Typ (V/µs)	I_O Typ (mA)	$\Delta V_{OS}/\Delta T$ (µV/C)	e_N (nV/√Hz)	I_{bias} Typ (pA)	CMRR Typ (dB)	Architecture	Temperature Range (°C)	Package Type
NCS5651MNTXG		Pb-free Halide free non AEC-Q and PPAP	Active	No	2	6	12	0.021	10	60	70	1500	-	250	<1000	85	Bipolar	-40 to 125	QFN-20

For more information please contact your local sales support at www.onsemi.com.

Created on: 1/27/2021