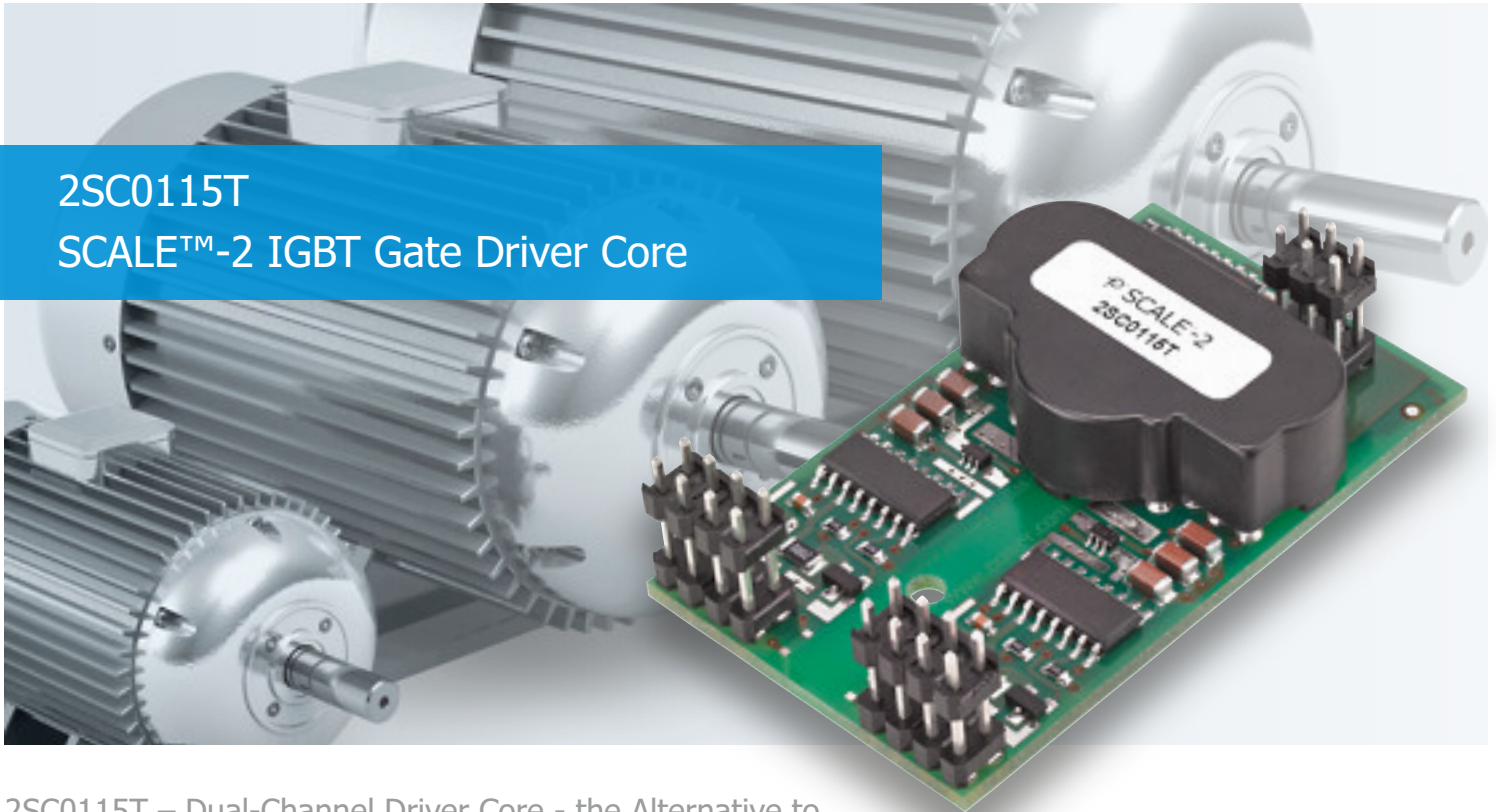


2SC0115T SCALE™-2 IGBT Gate Driver Core



2SC0115T – Dual-Channel Driver Core - the Alternative to Opto-Coupler Driver Solutions for Inverter Designs in the 90 - 500 kVA Power Range.

PRODUCT DESCRIPTION

Dual-channel gate driver core is dedicated to inverter designs in the power range of 90-500 kVA. It drives 1200 V IGBTs with collector currents up to 2400 A and switches at frequencies up to 50 kHz.

The new cost-effective SCALE™-2 dual-driver core 2SC0115T combines unrivalled compactness with broad applicability. The driver was designed for universal applications requiring high reliability. The 2SC0115T drives all standard IGBT modules up to 2400 A /1200 V. The driver core targets applications such as general purpose drives, UPS, solar converters and medical applications. The driver supports switching up to 50 kHz. It comprises all functionality for an advanced dual-channel IGBT gate driver including an reinforced isolated DC/DC converter, short-circuit protection, Soft Shut Down (SSD) or Advanced Active Clamping (AAC) and supply-voltage monitoring.

The 2SC0115T is the most compact driver core available for industrial applications, with a footprint of only 53.2 mm x 31 mm and an insertion height of 13 mm. It allows even the most restricted insertion spaces to be efficiently used. Compared with conventional drivers, the highly integrated SCALE™-2

chipset allows about 85 % of components to be dispensed with. This advantage is impressively reflected in increased reliability at simultaneously minimized cost.

APPLICATIONS

- Industrial motor drives
- Industrial motor drives
- Premium Drives
- Uninterruptible power supplies (UPS)
- Solar converters
- Electro/hybrid drive vehicles
- Switched mode power supplies (SMPS)
- Medical (MRT, CT, X-Ray)
- Welding and Plasma cutters

KEY BENEFITS

Reinforce Isolation. Flexible use with Soft Shut Down (SSD) or Advanced Active Clamping (AAC). Optimized for 1200 V IGBT Modules

KEY FEATURES

- Dual-channel driver core for up to 1200 V
- Driver core for modules up to $V_{ces} \leq 1200$ V
- ± 15 A peak output gate current
- +15 V/-6 V gate output current
- 1 W @ 85 degC output power per channel or 1.2 W @ = 70 degC
- On-board power supply
- High reliability (reduced component count)
- First-class isolation technology
- Direct paralleling capability
- Short-circuit protection, under-voltage lockout
- Delay time <100 ns, up to 50 kHz
- Reinforced insulation acc. to Vde/en and IeC
- UL recognized
- Safe Torque off (STO) prepared
- Soft Shut Down (SSD) or Advanced Active Clamping (AAC)

PRODUCT DESCRIPTION

The 2SC0115T combines a complete two-channel driver core with all components required for driving, such as an isolated DC/DC converter, short-circuit protection as well as supply voltage monitoring. Each of the two output channels is electrically isolated from the primary side and the other secondary channel.

An output current of ± 15 A and 1.2 W drive power is available per channel, making the 2SC0115T an ideal driver platform for universal usage in small and medium power applications. The driver provides a gate voltage swing of +15 V/-6 V. The turn-on voltage is regulated to maintain a stable 15 V regardless of the output power level. Its outstanding EMC allows safe and reliable operation in even hard industrial applications.

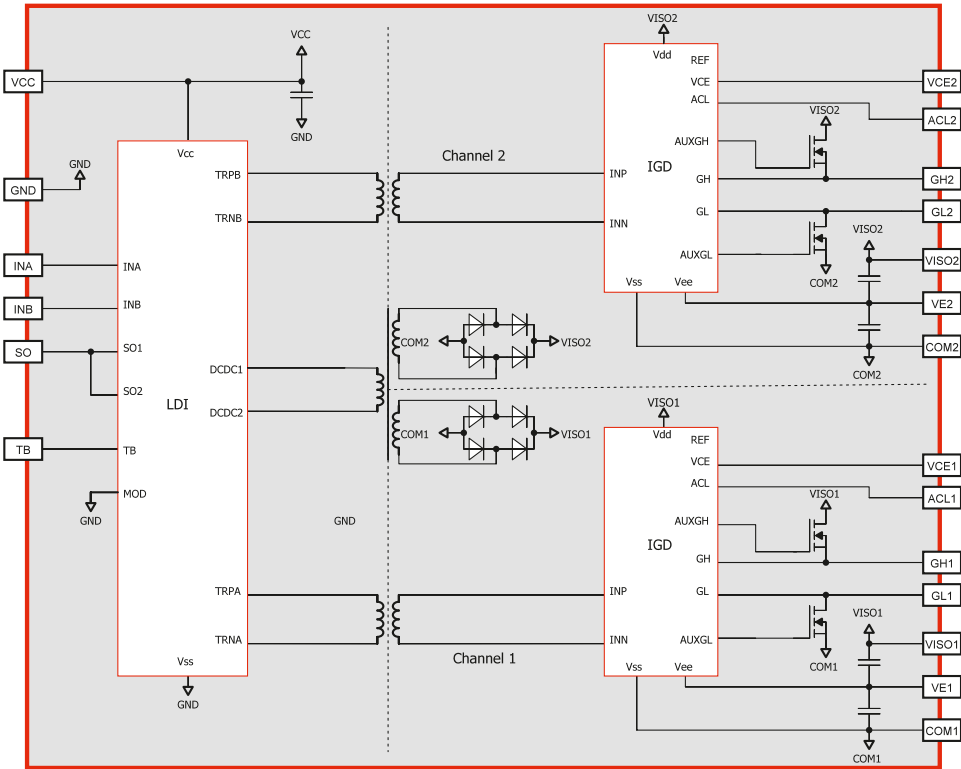
KEY DATA OVERVIEW

Parameter	Min	Typical	Max	Unit
Nominal supply voltage		15		V
Supply current @ $f_{IN}=0$ Hz		TBD		mA
Supply current, full load		TBD		mA
Output power per channel		1	1.2	W
Gate voltage		+15/-6		V
Peak output current (gate current)	-15		+15	A
Switching frequency $f_{IN}^{1)}$	0		40	kHz
Duty cycle	0		100	%
Creepage distance primary-secondary	9			mm
Creepage distance secondary-secondary	5.5			mm
Clearance distance primary-secondary	9			mm
Clearance distance secondary-secondary	5.5			mm
Dielectric test voltage	2500			V _{AC}
Partial discharge extinction voltage	1800			V _{peak}
dv/dt immunity, input to output		50		kV/us
Operating temperature	-40		+105	degC

¹⁾ Maximum switching frequency depends on the IGBT gate charge. See data sheet for actual value of specific driver.

BASIC SCHEMATIC OF THE 2SC0115T

The 2SC0115T is a cost-effective driver core equipped with Power Integrations' latest SCALE™-2 chipset. The SCALE™-2 chipset consists of two application-specific integrated circuits (ASICs) that cover the main range of functions needed to design intelligent gate drivers. It comprises all functionality for an advanced dual-channel IGBT gate driver including an isolated DC/DC converter, short-circuit protection, Soft Shut Down (SSD) and supply-voltage monitoring.



ORDERING INFORMATION 2SCO106T DUAL-CHANNEL SCALE™-2 GATE DRIVER CORE

	Type Designation	Description	Pin length	Availability
2SC0115T	2SC0115T2A0-12	-40...105 degC, lead free, SSD, AAC	3.00 mm	06.2015