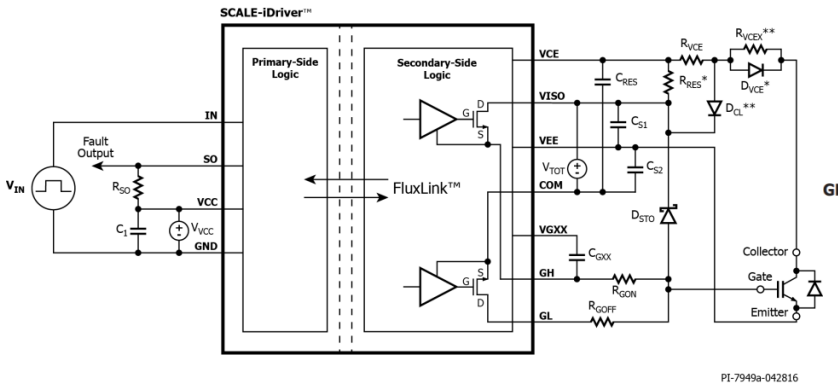
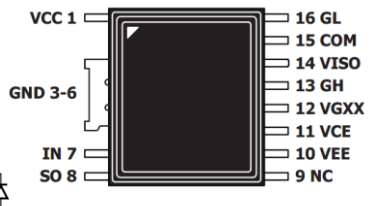
SCALE-iDriver™ Notes

Revision 1.0





eSOP-R16B K Package
MSL-3 CTI = 600

Product Part Number	Peak Output Current (A)	Semiconductor Current (A)
SID1132K	2.5	≤ 100
SID1152K	5.0	≤ 200
SID1182K	8.0	≤ 450

Increase power with external booster > 1000 A Ic

- **Industry highest 8.0 A peak output current**
  - Drives switches with up to 450 A collector current
  - Higher current with external boost
- **Up to 250 kHz switching frequency**
  - Low propagation delay < 260 nS
- **Greatly reduced component count**
  - Operate from a single-rail secondary supply
    - SCALE™ rail-to-rail stabilized output drive
    - DSAT (short circuit) sensing via resistor or diode networks
    - 2 layer PCBs reduce board complexity and cost
- **Comprehensive protection features**
  - Short circuit protection using $V_{CE(SAT)}$ monitoring
  - Advanced soft shutdown (ASSD)
  - Primary and secondary under voltage lock-out
  - Primary side fault notification

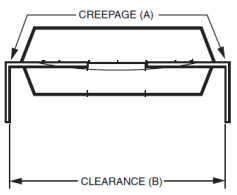
Key features

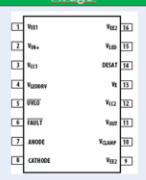
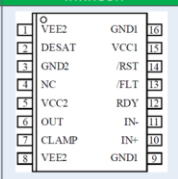
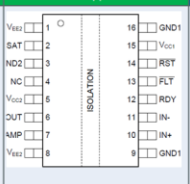
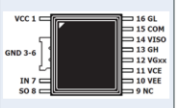
Supports 600-1200 V IGBT, MOSFET and SiC

SiC will require additional bias circuitry – contact Applications for more information

Gate Driver Technologies Supported

Benefit	PI	Competitor
High voltage, reliable Isolation	✓	?
Extended Creepage and clearance	✓	?
Single Secondary winding	✓	?
Integrated Rail-to-rail voltage regulation	✓	?
Resistive short-circuit detection	✓	?
Reduced stress in short-circuit (ASSD)	✓	?
Separate source and sink pins	✓	?
High Driver current without boost	✓	?
Reduced BOM allows 2 sided PCB	✓	?
High Level of Integrations eBOM Cost	✓	?



	ACPL-337-352 Avago	1ED020I12-B2 Infineon	ISO5851-2S TI	SID1182K PI
Package Type				
Creepage (mm)	8.3	8.2	8	**9.5**
CTI	175	175	600	**600**
Implied $V_{(PEAK)}$*	585	581	1125	**1330**
Implied V_{RMS}/V_{DC}*	415	412	798	**948**

* Assumes Pollution degree 2, Overvoltage category II, PCB Material group II

K Package is Clear winner over Competition

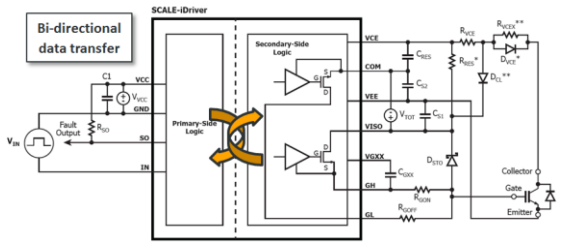
FluxLink™ provides isolation without optocouplers

Magneto-inductive coupling

Reinforced isolation, safe operation at high temperatures

Meets VDE UL and CSA requirements

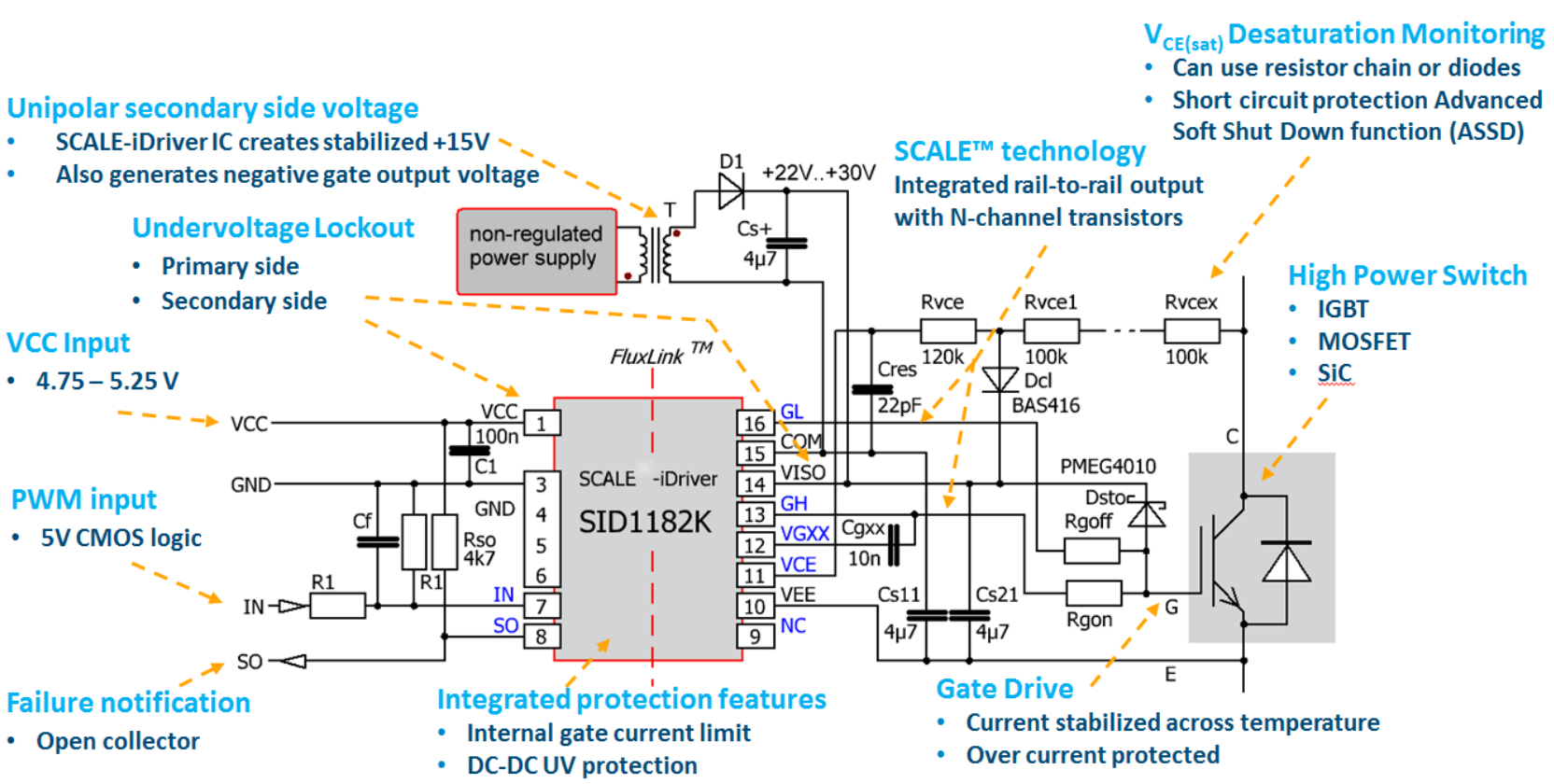
100 % production testing - HIPOT and partial discharge



Fluxlink™

	RDHP-1608	RDHP-1526
Class of semiconductor (Current rating)	I_C < 300 A	I_C > 300 A
$V_{DC(MAX)}$	900 V	800 V
Maximum Gate peak-current	8 A	15 A
Short-circuit detection	Resistor network Optional diode network	Resistor network
Components	Minimum component count	Additional booster stage
Overvoltage protection	None	Basic active-clamping (BAC)

Reference Design Boards



12 W Low-Side Design