



SCALE™-2 for PrimePACK™3+ 2SP0430T2xx

February 2019

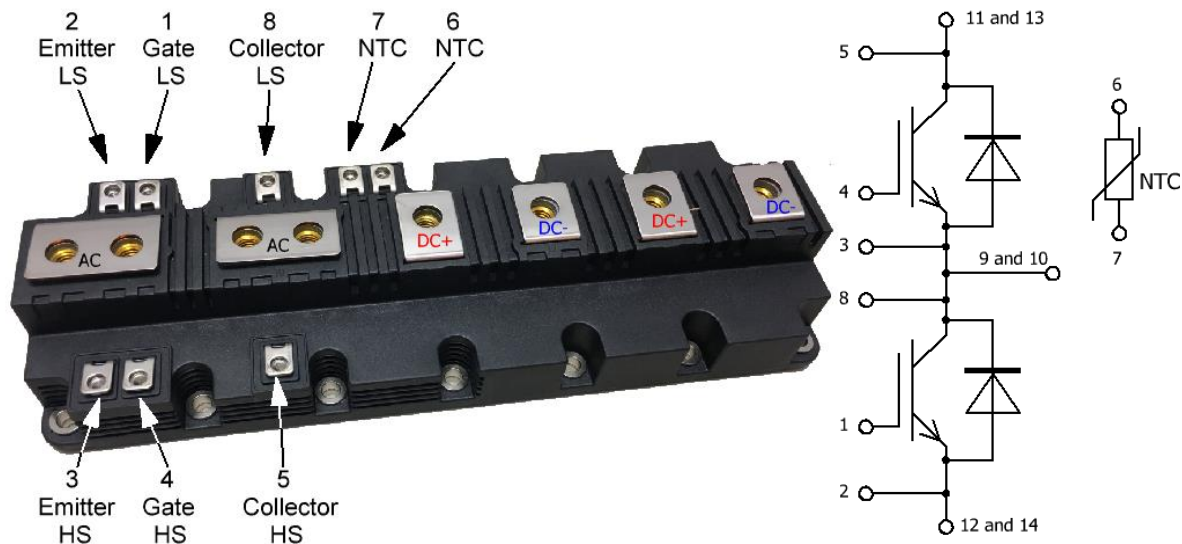
SCALE™-2 for PrimePACK™3+

Step 1 (Infineon):

- FF1800R12IE5 (1200V)
- FF1800R17IP5 (1700V)
- FF1500R12IE5 (1200V)
- FF1500R17IP5 (1700V)

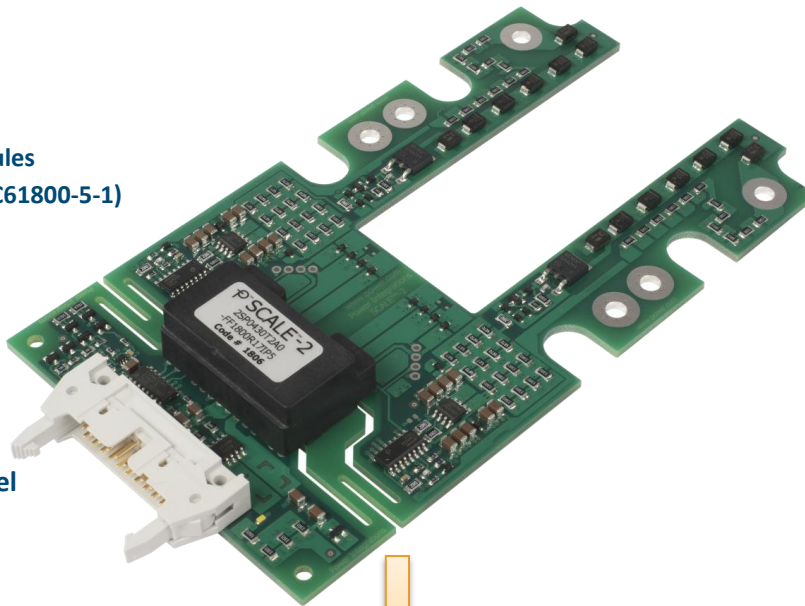
Step 2 (Fuji):

- 2MBI1800XXG170-50

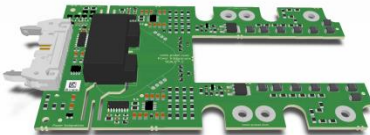
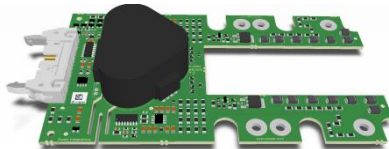
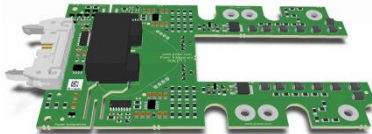
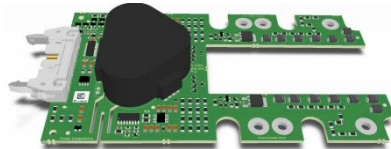


2SP0430T2XX

- Dual channel Plug-and-Play driver for PrimePACK3+ modules
- Reinforced Isolation for 1200V and 1700V application (IEC61800-5-1)
- For 2-Level and 3-Level NPC1
- Two different Isolation Classes
 - 5000 V_{AC} (50Hz/1min)
 - 9150 V_{AC} (50Hz/1min)
- Propagation delay time <100ns, jitter ±4ns
- ±30A peak output gate current
- +15V/-10V regulated gate output voltage
- 4W output power per channel @TA=85°C per channel
- Dynamic Advanced Active Clamping (DAAC)
- Short Circuit protection
- Electrical interface +15V logic level
- Under voltage lockout for primary & secondary side
- **Standard with Conformal Coating**
- UL compliant
- Application:
 - PV (Photo Voltaic) 3L NPC1
 - Traction Main Inverter
 - 2 Level Industrial Application



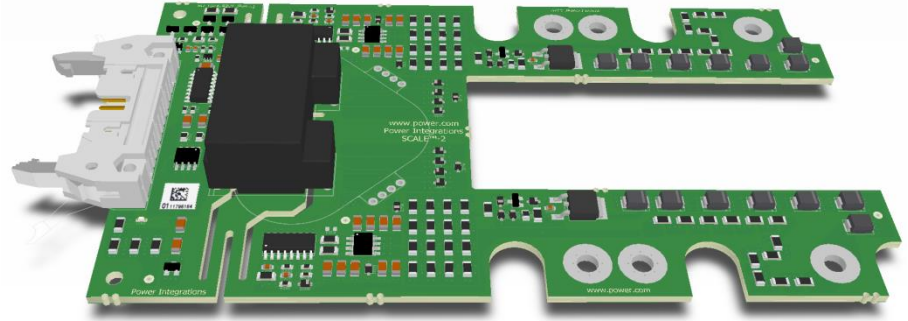
Product Overview – Step 1

Product name	Semiconductor V_{CES}	Interface	Isolation Class (Primary to Secondary Side)	Product Picture
2SP0430T2 A 0C- FF1800R 12 IE5 2SP0430T2 A 0C- FF1500R 12 IE5	1200V	Electric +15V	5000 V _{AC} (50Hz/1min)	
2SP0430T2 B 0C- FF1800R 12 IE5 2SP0430T2 B 0C- FF1500R 12 IE5	1200V	Electric +15V	9150 V _{AC} (50Hz/1min)	
2SP0430T2 A 0C- FF1800R 17 IP5 2SP0430T2 A 0C- FF1500R 17 IP5	1700V	Electric +15V	5000 V _{AC} (50Hz/1min)	
2SP0430T2 B 0C- FF1800R 17 IP5 2SP0430T2 B 0C- FF1800R 17 IP5	1700	Electric +15V	9150 V _{AC} (50Hz/1min)	

Product Details

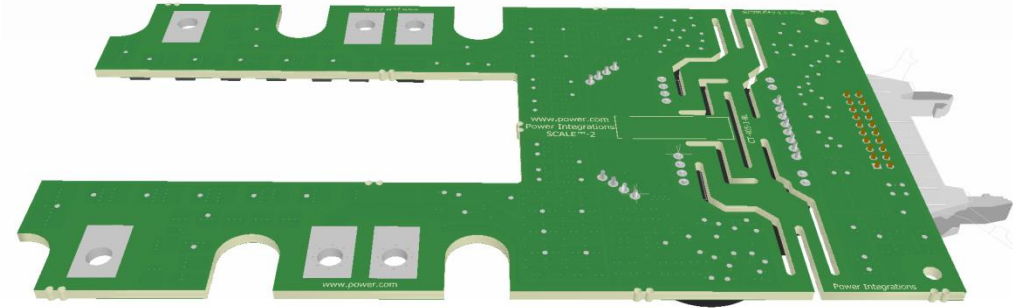
■ Top Side view

- ▶ Minimum count of components
- ▶ Two different Transformers for different isolation voltage



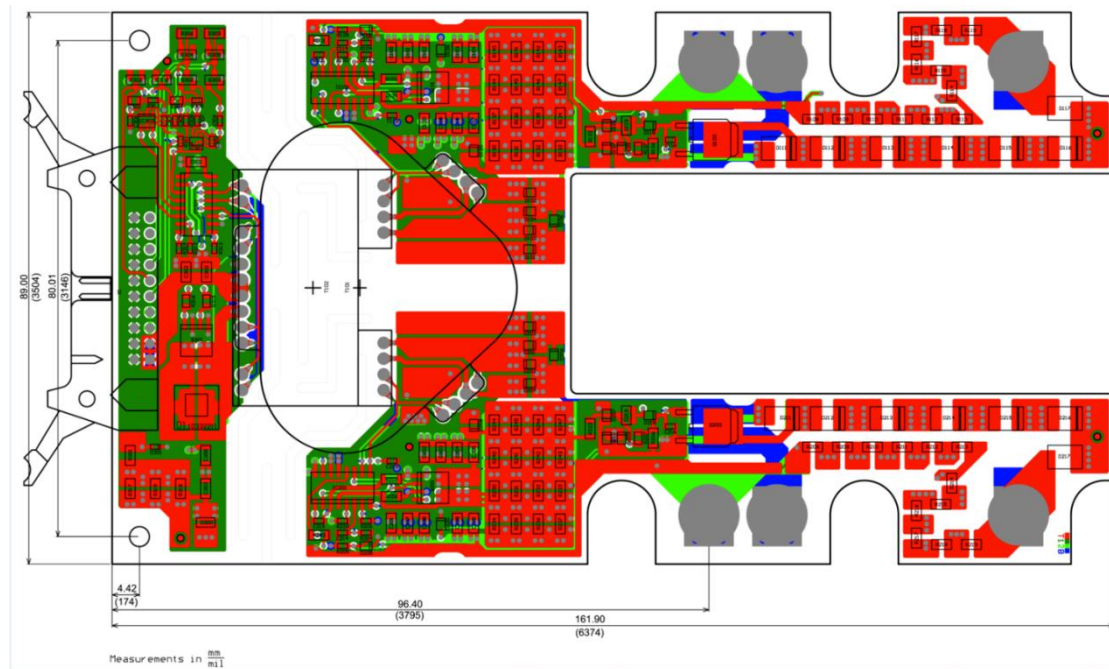
■ Back side view

- ▶ No back side Components



Product Details Dimension

Product name	Height (max over all)	Length	Width
2SP0430T2A0C -FF1800R12IE5	18mm	161.9mm	89mm
2SP0430T2B0C -FF1800R12IE5	24mm	161.9mm	89mm
2SP0430T2A0C -FF1800R17IP5	18mm	161.9mm	89mm
2SP0430T2B0C -FF1800R17IP5	24mm	161.9mm	89mm



Step file by request available

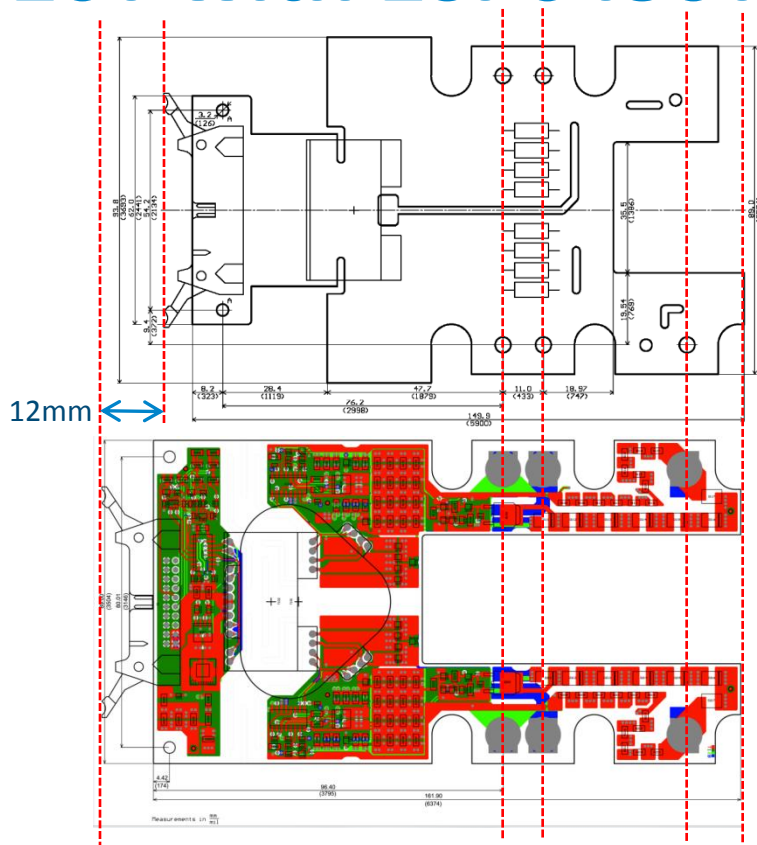
Comparison 2SP0320T with 2SP0430T

- **PrimePack 3 2SP0320T**

- ▶ Length 149.9mm

- **PrimePACK 3+ 2SP0430T**

- ▶ Length 161.9mm



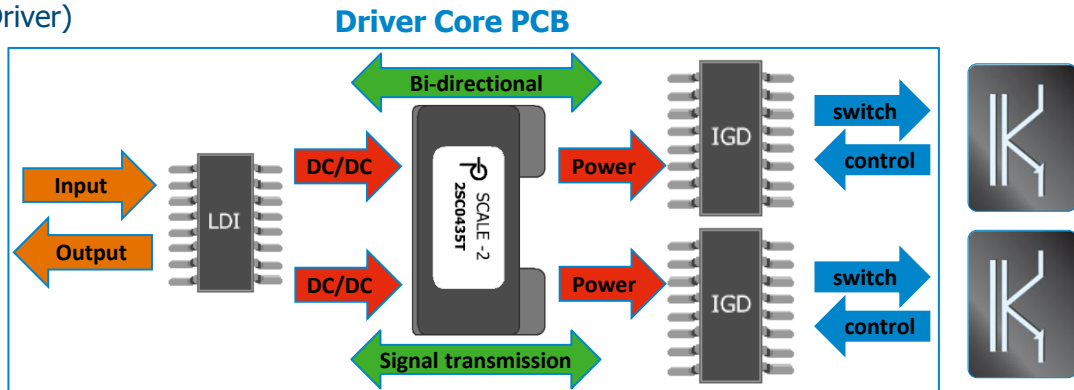
SCALE™-2+ Chip Set Philosophy

Driver Core is equipped with a SCALE™-2+ chip set. Hence, a small number of discrete components assembled onto PCB has been achieved:

- LDI (Logic to Driver Interface)
- IGD (Intelligent Gate Driver)

LDI IC functions:

- Controller to drive bi-directional signal conditioning
- Bi-directional communication with secondary side
- Fault status management
- DC/DC controller



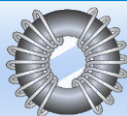
IGD IC functions:

- Drives power module and controls status
- Secures power module against SC and overvoltage
- Bi-directional communication with primary side
- DAAC (Dynamic Advanced Active Clamping)

Galvanic insulation is provided through following technologies:



Planar: high power, low profile

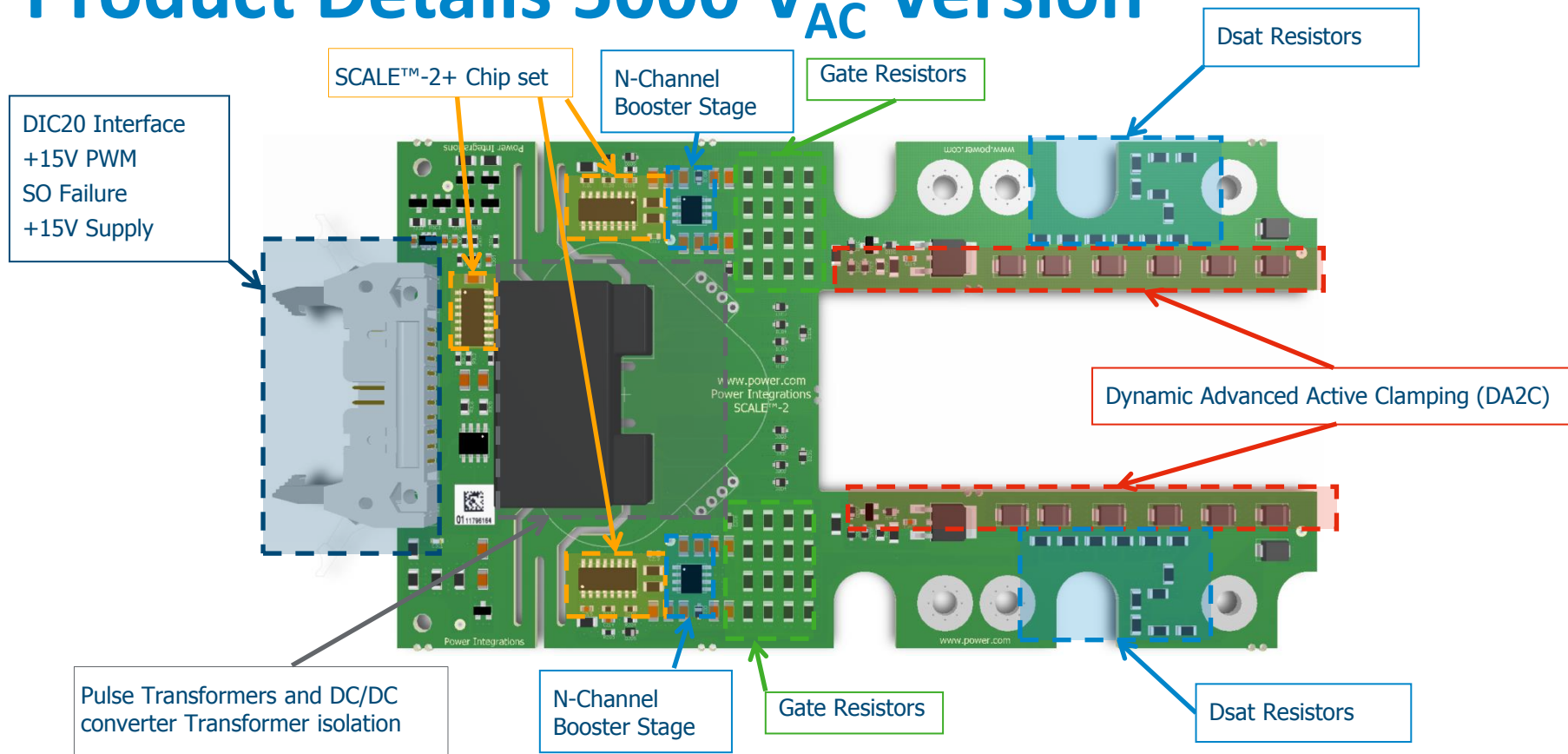


Ring core: Rugged, flexible form factor

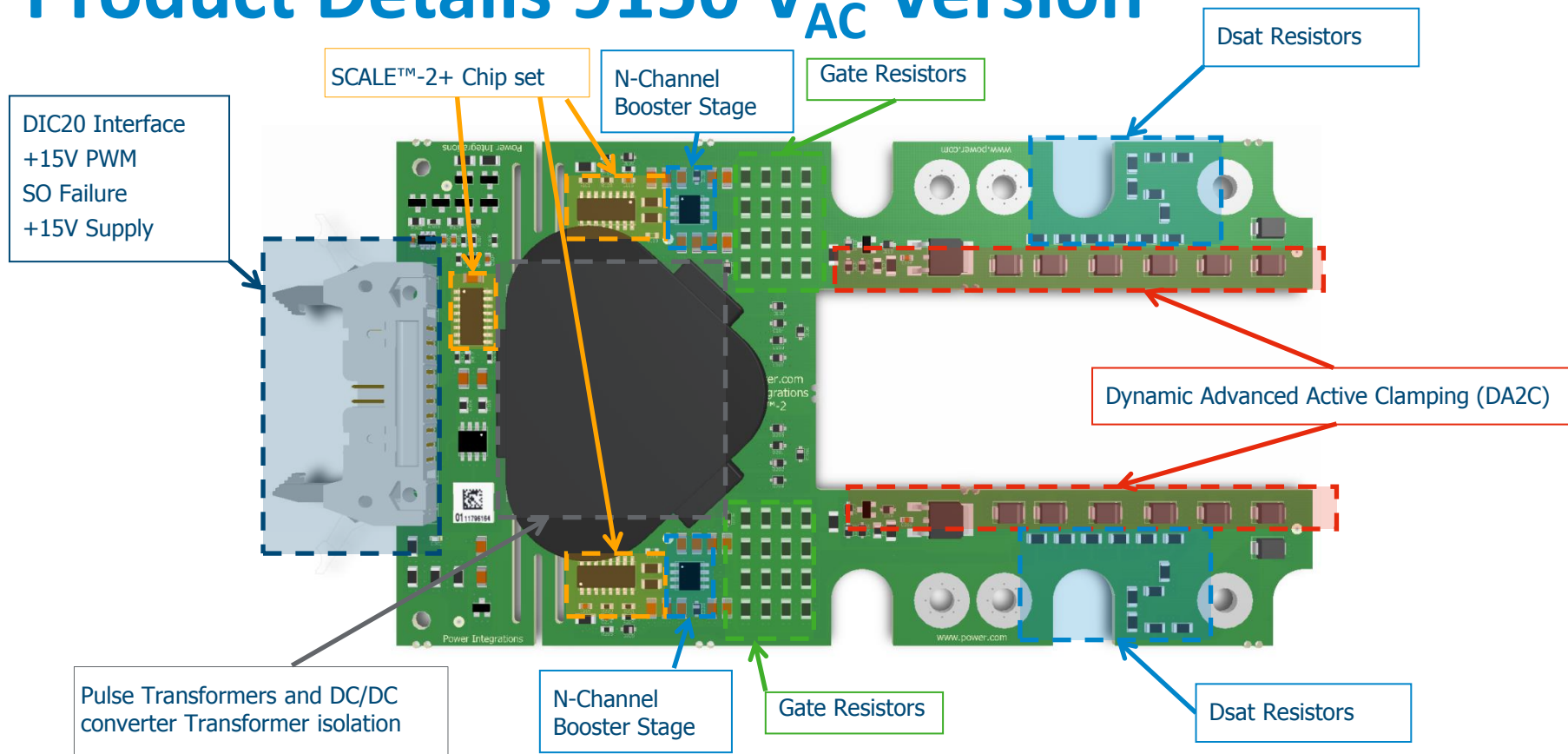


Coreless: low power, ultra flat

Product Details 5000 V_{AC} Version



Product Details 9150 V_{AC} Version



DIC-20 Interface Description

Pin Number	Function
1	VDC +15V
2	GND
3	VDC +15V
4	GND
5	VCC +15V
6	GND
7	VCC +15V
8	GND
9	SO2 Failure High Side
10	GND
11	INB High Side Switch
12	GND
13	SO1 Failure Low Side
14	GND
15	INA Low Side Switch
16	GND
17	Not connected
18	GND
19	Not Connected
20	GND

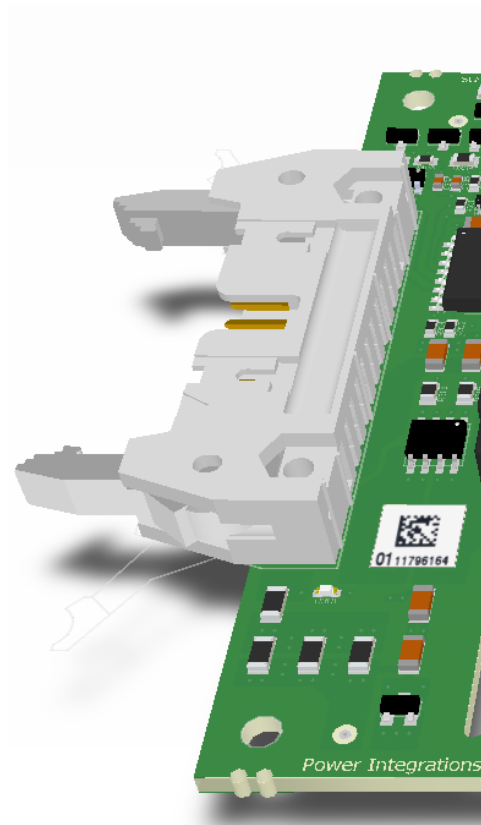
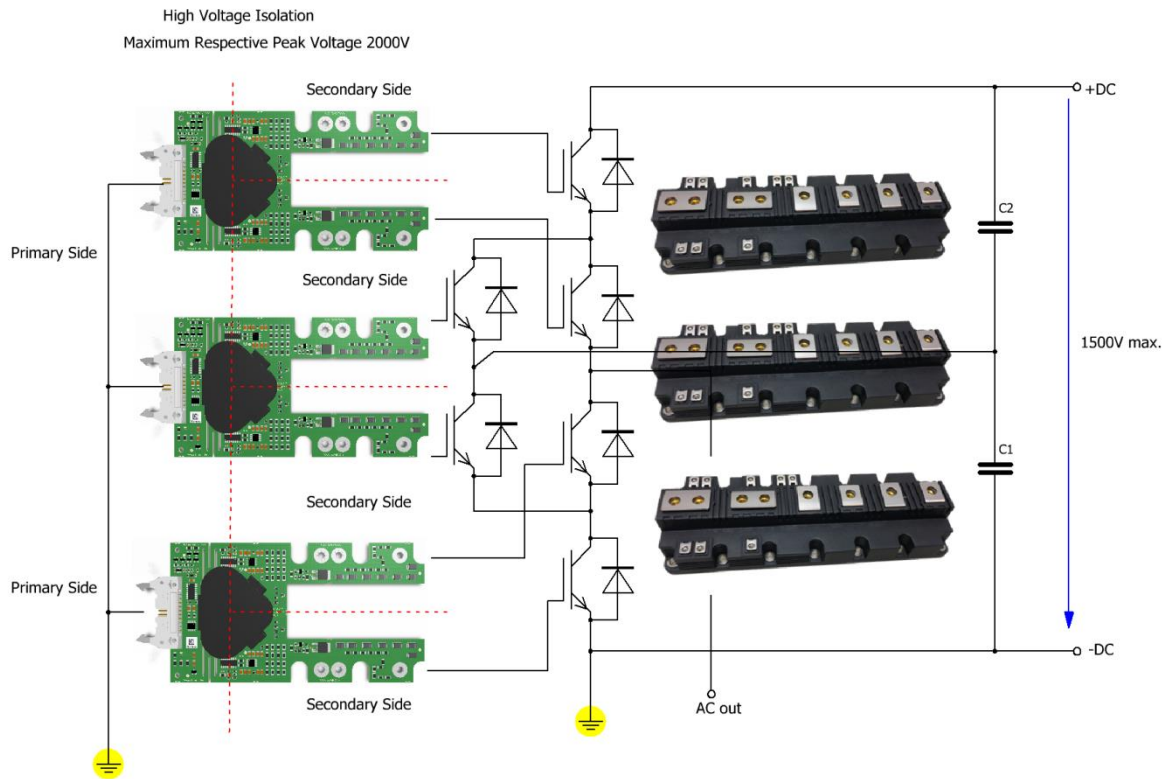


Photo Voltaic 3L NPC1 with Grounded DC-



Samples and Datasheet

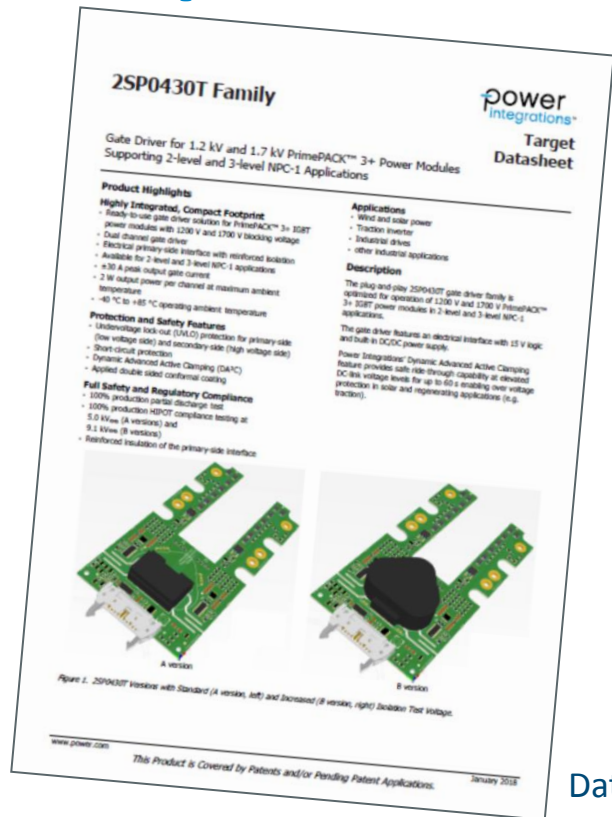


Figure: PRT Sample of 2SP0430T2B0-FF1800R12IE5

Datasheet available



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