STEVAL-VP26K03F

Data brief

Double output isolated PSR flyback converter for smart meter and PLC systems using VIPER267KDTR

Features

- Double output voltage: 12 V at 0.7 A_{rms} (1 A peak) and 6 V at 200 mA
- Primary side regulation (PSR)
- Extended AC mains input voltage range: 85 to 498 V_{AC}
- EMC with EN55022, EN61000, EN61000-4-4, EN61000-4-5, EN61000-4-6
- WEEE compliant
- RoHS compliant

Description

The STEVAL-VP26K03F evaluation board implements a double output isolated flyback with primary side regulation (PSR), specifically designed to supply smart meter and PLC systems.

The evaluation board has been developed using the VIPER267KDTR offline high-voltage converter, which features a 1050 V avalanche-rugged power section, PWM operation at 60 kHz with frequency jittering for lower EMI, current limiting with 700 mA fixed set point, on-board soft-start, safe auto-restart after fault and low standby power.

The power supply provides 12 V at 700 mA_{rms} (1 A peak) to the power line modem (PLM) and the analog circuitry, and 6 V at 200 mA to supply digital circuitry and other low voltage parts.

The power supply is designed to operate across a three-phase input mains from 50 to 290 V_{AC}, but can also be connected to a single phase mains from 85 to 500 V_{AC}.

Product summary	
double output isolated PSR flyback converter for smart meter and PLC systems using VIPER267KDTR	STEVAL-VP26K03F
1050 V high voltage converter	VIPER267KDTR

1 Electrical specifications

Table 1. STEVAL-VP26K03F electrical specifications

Parameter	Min.	Typ.	Max.
Operative AC main input voltage (3-phase connection)	50 V_{AC}	-	290 V_{AC}
Operative AC main input voltage (2-phase connection)	85 V_{AC}	-	498 V_{AC}
Mains frequency	47 Hz	-	63 Hz
Output voltage 1 – V_{OUT1}	11 V	12 V	16 V
Output current 1 – I_{OUT1}	10 mA	-	700 mA (rms)
	-	-	1000 mA (peak)
Output voltage 2 – V_{OUT2}	5.5 V	6 V	7 V
Output current 2 – I_{OUT2}	10 mA	-	200 mA
Maximum peak power	-	-	13.2 W
Maximum rms power	-	-	9.6 W
Efficiency at full load	-	78%	-
Ambient operating temperature	-40 °C	-	85 °C

2 Schematic diagrams

Figure 1. **STEVAL-VP26K03F schematic - input section**

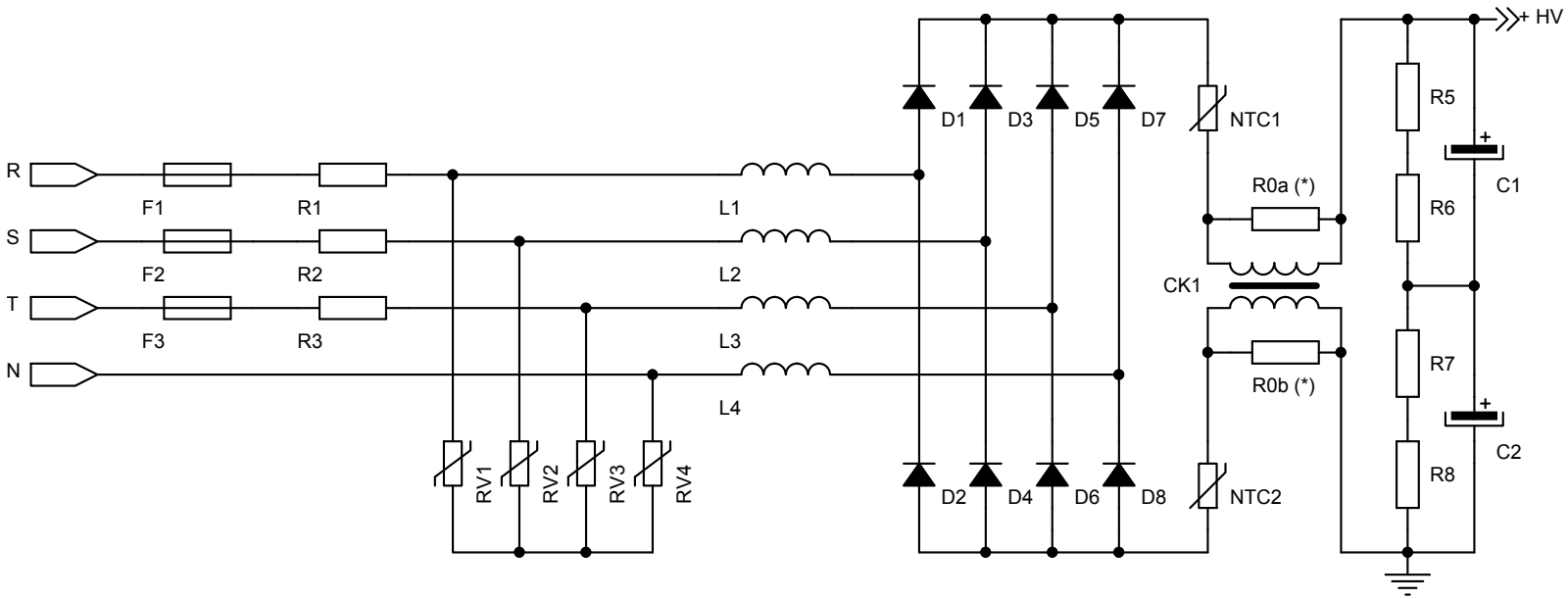
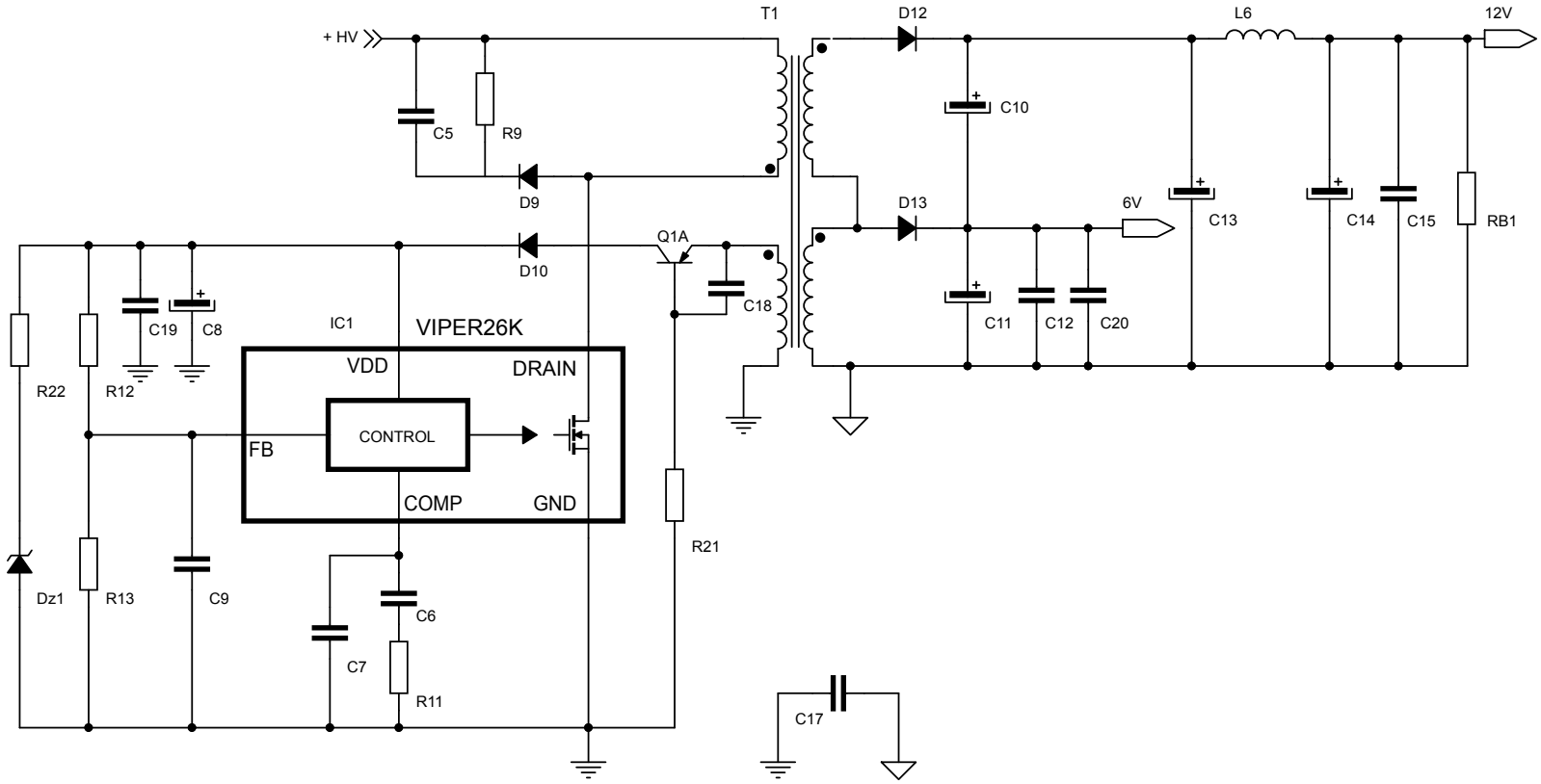


Figure 2. **STEVAL-VP26K03F schematic - converter section**



Revision history

Table 2. **Document revision history**

Date	Version	Changes
10-Sep-2019	1	Initial release.
17-Sep-2019	2	Updated Section 2 Schematic diagrams.

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