



**ARK**micro

**方舟  
专注电路保护**

Depletion MOSFET



**成都方舟微电子有限公司**  
ARK Microelectronics Co., Ltd



# COMPANY PROFILE

## 企业简介

(ARK) 成都方舟微电子有限公司成立13年来,是国内唯一专注耗尽型MOSFET设计的公司。专业从事功率器件的研发、制造与销售,并提供电源管理、电路保护解决方案,ARK可根据客户需求,提供高端定制开发。公司专注于以先进技术和特色工艺为基础平台的集成功率器件开发,以集成控制的方式提供卓越的功率处理和电源管理能力,是以应用为导向不断提升技术水平的行业引领者以市场需求带动创新研发,以技术发展引导应用升级,是ARK一贯宗旨。公司开发的系列耗尽型MOSFET及集成功率器件大量用于充电器、LED、工业控制、电动汽车、通信电路、物联网等领域。

公司创始人具有三十多年半导体行业研发与管理经验,团队包括:海归博士、国内顶尖大学硕士,及海外研发合作团队。所有产品均自主研发,相关技术已获发明专利,目前公司具有发明专利及集成电路布图近70项,是以自主研发为核心竞争力的半导体原厂。

ARK产品包括工业类和消费类两条产品线,目前与TE、上汽、一汽、南瑞、许继、星星充电、南京科远、正崧精密、中电集团等有广泛合作,与PI、ON、IWATT、等设计公司有深入合作。是华为、荣耀、三星、小米、Google、VIVO、SONY等客户的长期供应商。

ARK用于工控、汽车电子、物联网等领域的DMX1072/DMS1072、DMX4022E/DMS4022E、DMZ1511E、DMD4523E等系列产品,以更优的特性代替传统电路中的JFET器件,特别适合对高电压、大电流电路的瞬态浪涌抑制、过压过流保护应用。产品满足宽温度范围、高防护等级、高抗振动性等要求,符合AEC-Q101标准,性能完全达到甚至超过国外同类产品,可大量应用在电动汽车、充电桩、光伏、储能、轨道交通等新能源领域。

用于充电器、LED等消费电子产品的DMZ60系列、DMZ(X)10系列、DMZ15系列、DM(X)13系列、DMZ85系列、DME60集成双芯等系列产品,专为PD3.1快充定制开发,为大功率、宽电压输出的PD提供PWM IC、同步整流IC供电并具有电路启动功能;30V~350V全系列增强型MOSFET对标AOS同类产品,海外生产,品质更高、价格更优、供货更有保证。

ARK产品以高品质、高性能、低成本对标国外同类产品,实现国产替代,被国内外客户的认可并广泛采用。

ARK Microelectronics Co., Ltd. has been established for 13 years, and it is the only company in China that focuses on the design of depletion MOSFET. Specializing in R&D, manufacturing and sales of power devices, and providing power management and circuit protection solutions, ARK can provide high-end customized development according to customers' needs. The company focuses on the development of integrated power devices based on advanced technology and characteristic technology, and provides excellent power processing and power management capabilities by means of integrated control. It is the industry leader who constantly improves the technical level by taking application as the guide. It is ARK's consistent aim to drive innovative research and development by market demand and guide application upgrade by technological development. The series of depletion MOSFET and integrated power devices developed by the company are widely used in charger, LED, industrial control, electric vehicle, communication circuit, Internet of Things and other fields.

The founder of the company has more than 30 years of R&D and management experience in the semiconductor industry, and the team includes: Returned doctor from studying abroad, master's degree from top universities in China, and overseas R&D cooperation team. All products are independently researched and developed, and related technologies have been patented. At present, the company has nearly 70 invention patents and integrated circuit layouts, and is a semiconductor factory with independent research and development as its core competitiveness.

ARK products include industrial and consumer product lines. At present, it has extensive cooperation with TE, SAIC, FAW, Nanrui, Xuji, Star Charging, Nanjing Keyuan, Zhengwai Precision, CLP Group, etc., and in-depth cooperation with design companies such as PI, ON, IWATT, etc. It is a long-term supplier to Huawei, Glory, Samsung, Xiaomi, Google, VIVO, SONY and other customers.

ARK is used in DMX1072/DMS1072, DMX4022E/DMS4022E, DMZ1511E, DMD4523E and other products in industrial control, automotive electronics, Internet of Things and other fields. It replaces JFET devices in traditional circuits with better characteristics, and is especially suitable for transient surge suppression and over-voltage and over-current protection of high-voltage and high-current circuits. The products meet the requirements of wide temperature range, high protection level, high vibration resistance, etc., meet AEC-Q101 standard, and their performance completely reaches or even exceeds that of similar foreign products, and can be widely used in new energy fields such as electric vehicles, charging piles, photovoltaics, energy storage, rail transit, etc.

DMZ60 series, DMZ(X)10 series, DMZ15 series, DM(X)13 series, DMZ85 series, DME60 integrated dual-core and other products used in consumer electronic products such as chargers and LEDs are specially developed for PD3.1 fast charging, providing PWM IC and synchronous rectification IC power supply for PD with high power and wide voltage output, and having circuit start-up function; 30V~350V full-series enhanced MOSFET is produced overseas with higher quality, better price and more guaranteed supply compared with similar AOS products.

ARK products are compared with foreign similar products with high quality, high performance and low cost, and realize domestic substitution, which is recognized and widely adopted by domestic and foreign customers.

品质 · 铸就卓越 / 创新 · 筑梦未来

# PRODUCT PARAMETERS

## 工控产品参数

| Part Number | $BV_{DSX}$ (V) | $I_{DSS, min}$ (A) | VTH (V)   | $R_{DS(ON), Typ}$ ( $\Omega$ ) | $R_{DS(ON), Max}$ ( $\Omega$ ) | Configuration               |
|-------------|----------------|--------------------|-----------|--------------------------------|--------------------------------|-----------------------------|
| DMX1072     | 100            | 0.3                | -1.5~-3.3 | /                              | 3                              | Depletion Mode, with ESD    |
| DMS1072     | 100            | 0.3                | -1.5~-3.3 | /                              | 3                              | Depletion Mode, with ESD    |
| DMZ1520E    | 150            | 0.2                | -3.5~-5.5 | 10                             | 15                             | Depletion Mode, with ESD    |
| DMB2014     | 200            | 16                 | -1.5~-3.3 | 0.08                           | 0.1                            | Depletion Mode, with ESD    |
| DMX4022E    | 400            | 0.2                | -1.5~-3.3 | 12                             | 25                             | Depletion Mode, with ESD    |
| DMS4022E    | 400            | 0.24               | -1.5~-3.3 | 12                             | 25                             | Depletion Mode, with ESD    |
| DMD4523E    | 450            | 3.75               | -1.7~-4.0 | /                              | 2                              | Depletion Mode, with ESD    |
| DMX5530E    | 550            | 0.11               | -1.5~-3.3 | 35                             | 60                             | Depletion Mode, with ESD    |
| DMS6014E    | 600            | 0.08               | -1.5~-3.3 | 110                            | 150                            | Depletion Mode, with ESD    |
| DMZ8530E    | 850            | 0.13               | -1.5~-3.3 | /                              | 30                             | Depletion Mode, with ESD    |
| FTS10N15G   | 150            | 0.35               | 2.5~1.5   | 5                              | 10                             | Enhancement Mode , with ESD |
| FTS01N15G   | 150            | 1.3                | 2.5~1.5   | 0.45                           | 1                              | Enhancement Mode , with ESD |
| FTE02P15G   | -150           | -2.3               | -1.8~-4.0 | 0.2                            | 0.3                            | Enhancement Mode , with ESD |
| FTP02P15G   | -150           | -15                | -1.8~-4.0 | 0.2                            | 0.3                            | Enhancement Mode , with ESD |
| FTZ15N35G   | 350            | 0.2                | 3~1       | 8                              | 15                             | Enhancement Mode , with ESD |
| FTX15N35G   | 350            | 0.2                | 3~1       | 8                              | 15                             | Enhancement Mode , with ESD |
| FTZ30P35G   | -350           | -0.2               | -1~-3     | 18                             | 30                             | Enhancement Mode , with ESD |
| FTX30P35G   | -350           | -0.2               | -1~-3     | 18                             | 30                             | Enhancement Mode , with ESD |

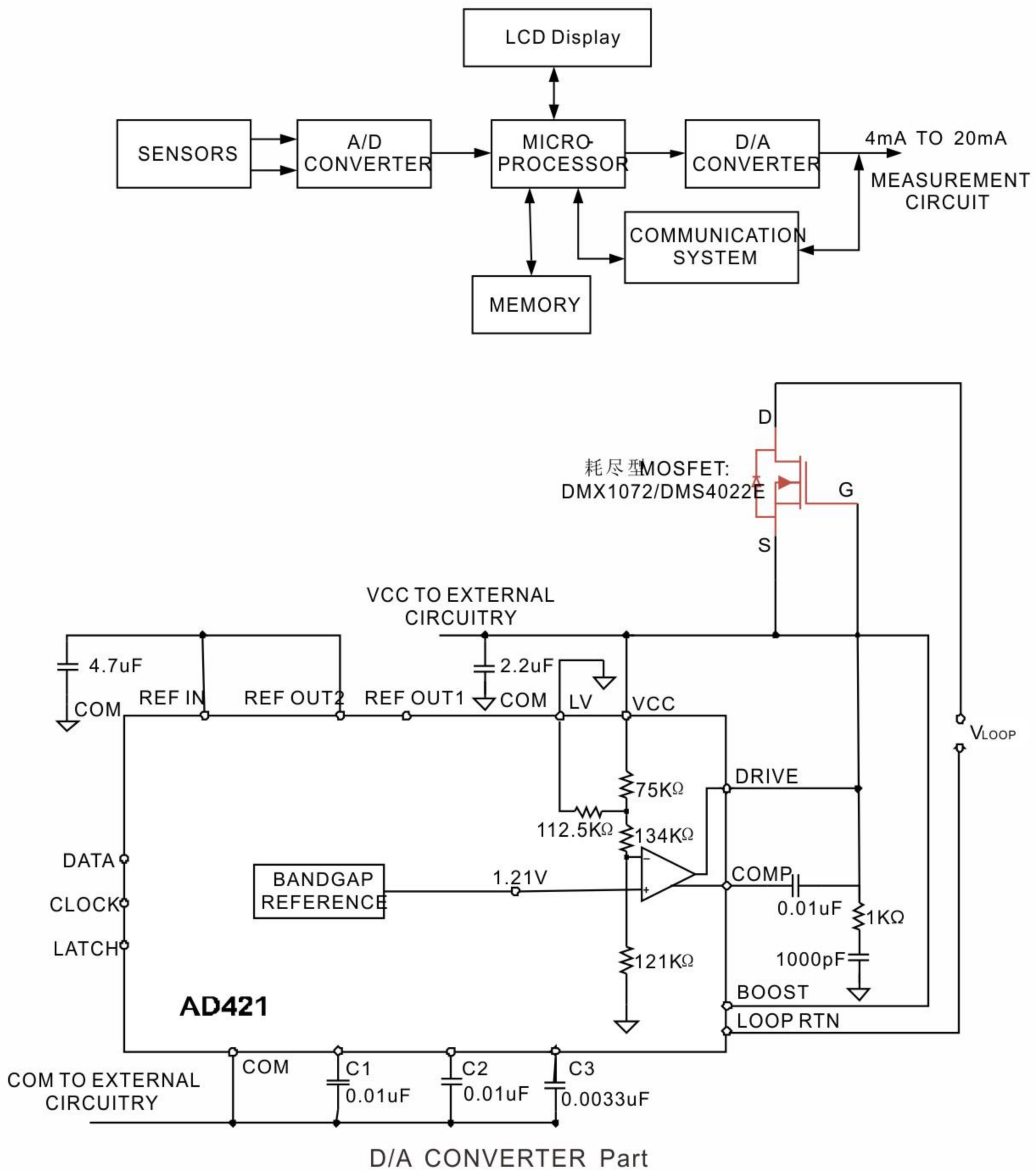
# COOPERATION BRAND

## 合作品牌



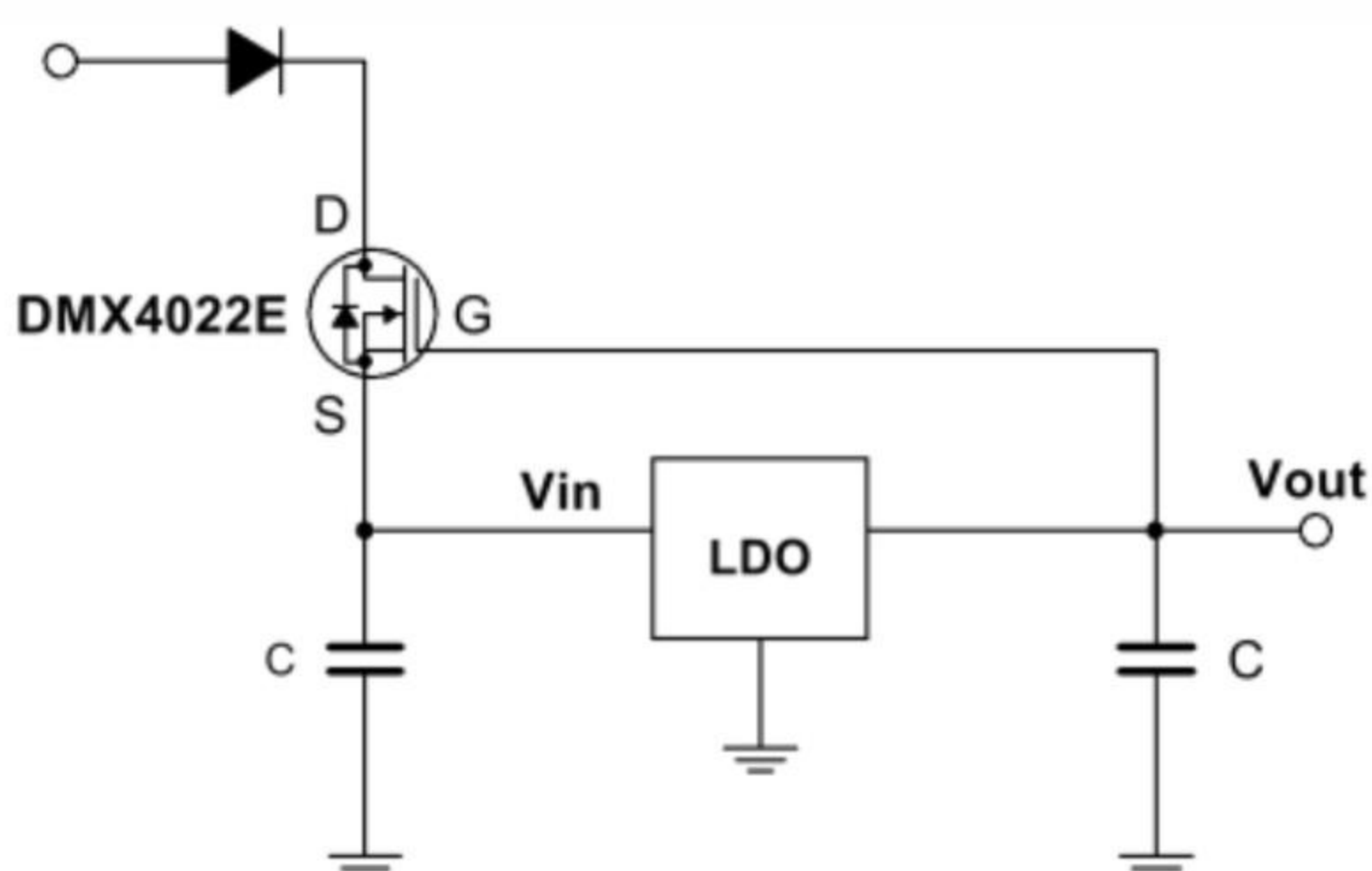
## 产品 / 1072&4022

DMX1072/DMS1072&DMX4022E/DMS4022E系列产品在工业自动化、汽车电子、物联网等领域的传感器、变送器中的应用。下图为具备HART功能的智能变送器电路示意图,1072&4022系列产品用于给AD421的VCC供电,该系列器件支持高电压输入,具有极佳的抑制瞬态浪涌能力,可对复杂电磁环境中的传感器、变送器实现有效的过压过流保护。该系列产品的参数、品质完全达到国外同类产品水平,其性能已达到甚至超过常用的DN2530、DN2535、DN2540、DN3545、LND150等产品,可实现完美替代。



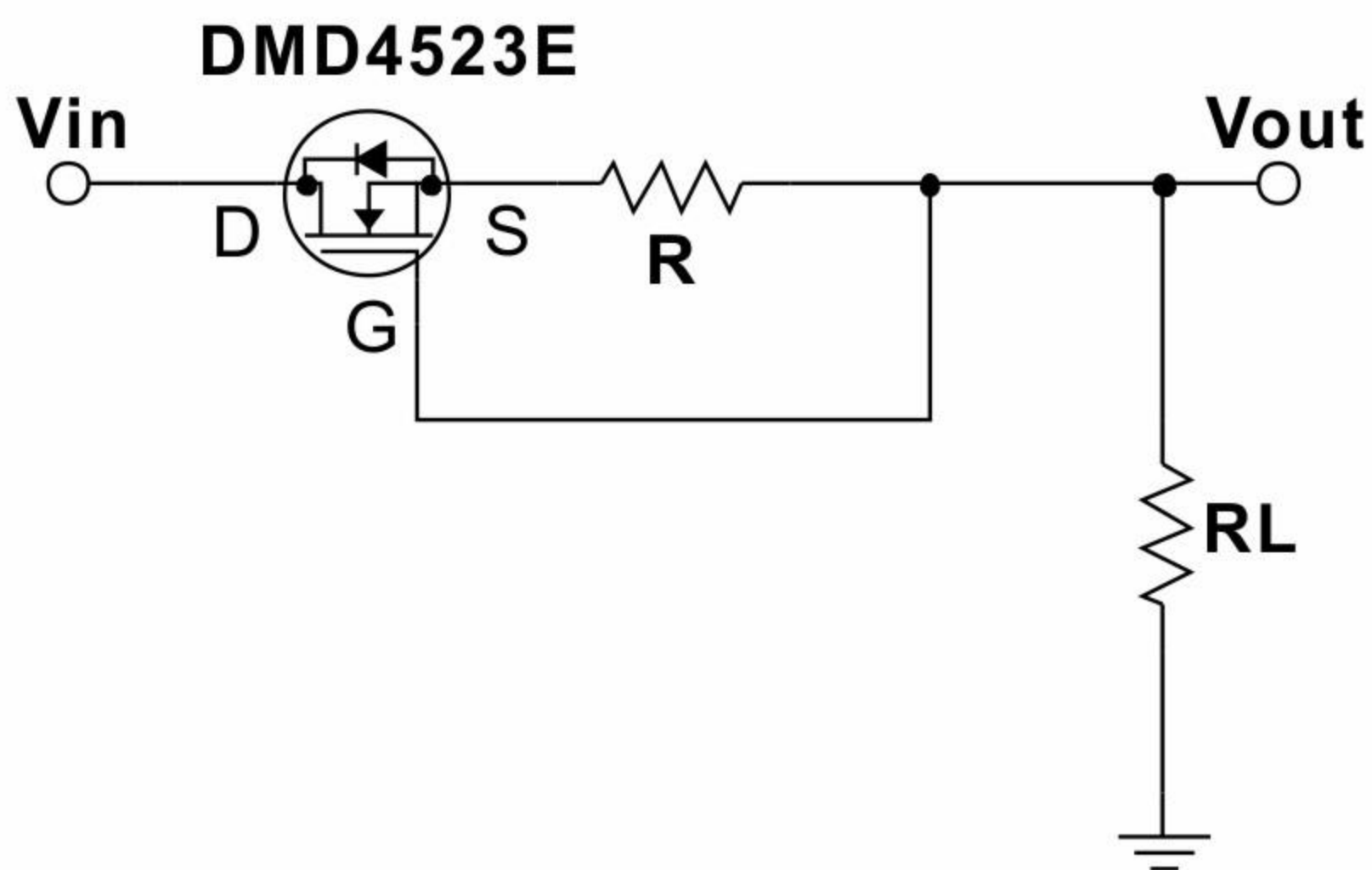
## 产品 / 4022

DMX4022E系列产品在工业自动化、汽车电子、新能源等领域的非隔离式电源电路中的应用。该电路无需使用其它DC-DC元件,仅使用一颗耗尽型MOSFET器件,即可将较高电压转换为稳定的低电压提供给LDO电路输入端,具有良好的瞬态浪涌抑制能力,电路结构简单,可节约成本。



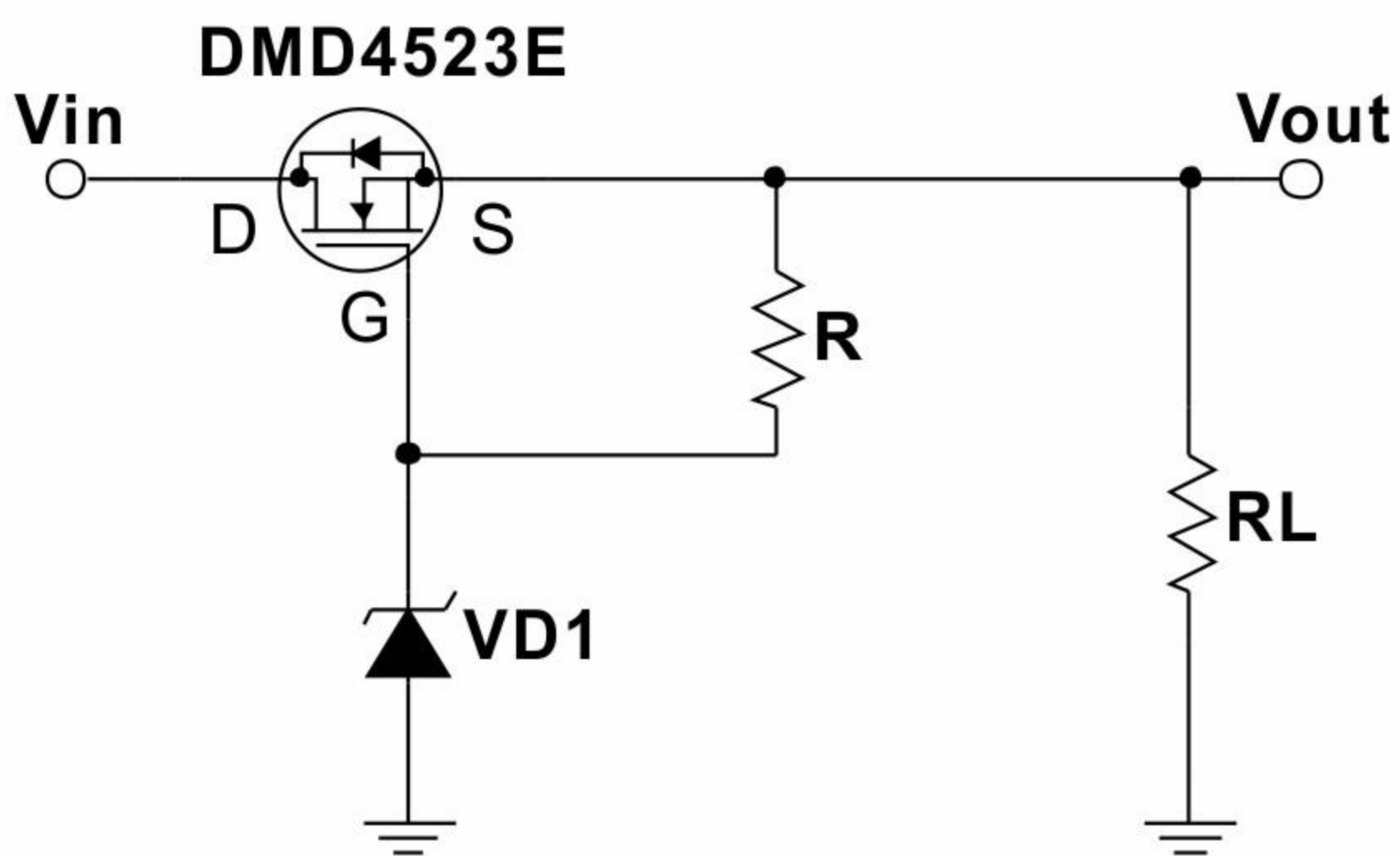
## 产品 / 4523

DMD4523E系列产品在容性负载、仪表、通讯设备中用于瞬态浪涌抑制、过流、过压保护的应用。该电路中仅使用一颗耗尽型MOSFET+电阻R,就能限制流过负载回路的电流大小,为负载回路提供过流保护。该系列MOSFET响应速度快,电路结构简单,成本低。



## 产品 / 4523

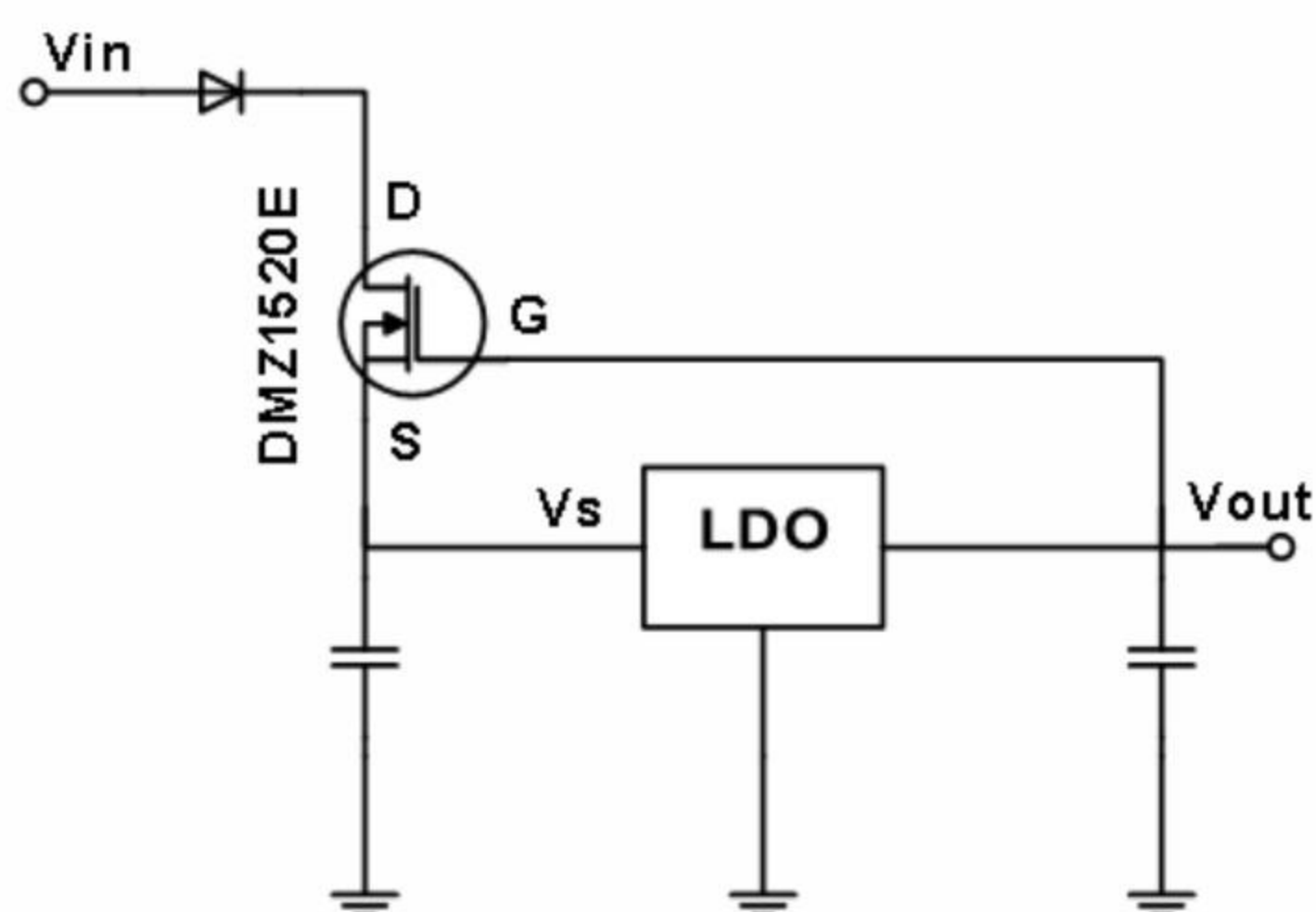
DMD4523E系列产品在容性负载、仪表、通讯设备中用于过压过流保护的应用。该电路通过选择合适的稳压二极管VD1,即可得到稳定的输出电压 $V_{out}$ 。该系列产品可工作在较高电压下,能为负载回路提供过压保护及瞬态浪涌抑制。当负载出现短路时,为负载提供过流保护。该系列MOSFET响应速度快,电路结构简单,成本低。



## 产品 / 1520

DMZ1520E系列产品在工业自动化、汽车电子、新能源等应用电路中,可用于LDO供电。如下图所示,电路中只使用了一个DMZ1520E,它可以将高输入电压转换为稳定的低电压为LDO供电,同时为LDO提供瞬态浪涌抑制。LDO的输入输出电压满足关系式:  $V_s = V_{out} + |V_{GS(OFF)}|$ 。该系列MOSFET响应速度快,电路结构简单。

DMZ1520E系列产品不仅能提供稳定的电源,而且能在复杂的电子、磁环境中抵抗较大的瞬变电压,特别适用于智能变送器IC的应用,如AD421、SD2421A、JHM1101等,对标 BSS169、MMBF4393。



## MAIN PRODUCTS

### PD主要产品



## MAIN PRODUCT PARAMETERS

### PD主要产品参数

| Part Number         | $BV_{DSX}$ (V) | $I_D$ (A) | $V_{TH}$ (V) | $R_{DS(ON),Typ}$ ( $\Omega$ ) | $R_{DS(ON),Max}$ ( $\Omega$ ) | Configuration            |
|---------------------|----------------|-----------|--------------|-------------------------------|-------------------------------|--------------------------|
| DMZ1015E/DMX1015E   | 100            | 0.1       | -27          | /                             | 10                            | Depletion Mode, with ESD |
| DMZ1315E/DMX1315E   | 130            | 0.1       | -27~-17      | 11                            | 30                            | Depletion Mode, with ESD |
| DMZ1315EL/DMX1315EL | 130            | 0.1       | -20~-13      | 15                            | 30                            | Depletion Mode, with ESD |
| DMZ1521E            | 150            | 0.2       | -5.0~-7.0    | 10                            | 15                            | Depletion Mode, with ESD |
| DMZ6005E            | 600            | 0.02      | -1.5~-3.3    | 500                           | 700                           | Depletion Mode, with ESD |
| DMZ6012E            | 600            | 0.04      | -1.5~-3.3    | 110                           | 150                           | Depletion Mode, with ESD |
| DME6010D            | 600            | 0.02      | -1.5~-3.3    | 500                           | 700                           | Depletion Mode, with ESD |
|                     | 100            | 0.1       | -27          | /                             | 30                            |                          |
| DMZ8530E            | 850            | 0.13      | -1.5~-3.3    | /                             | 30                            | Depletion Mode, with ESD |
| AKF30N5P0SX         | 30             | 59        | 2.0~1.0      | 0.0039                        | 0.0052                        | Enhancement Mode MOSFET  |
| FTZ15N35G           | 350            | 0.2       | 3.0~1.0      | 8                             | 15                            | Enhancement Mode MOSFET  |

40V、60V、85V、100V、150V、200V、350V Enhancement Mode MOSFET, With ESD

## COOPERATION BRAND

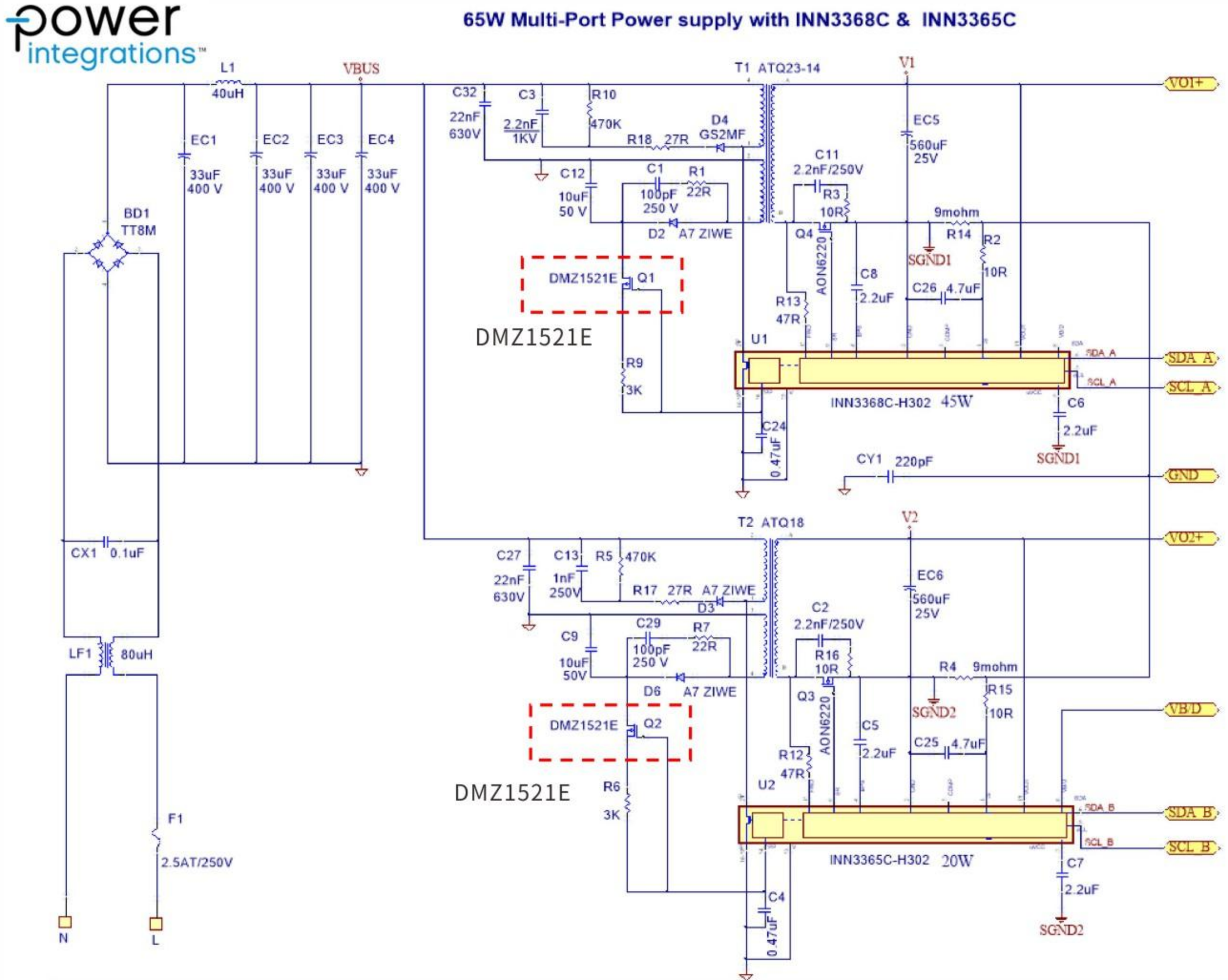
### 合作品牌



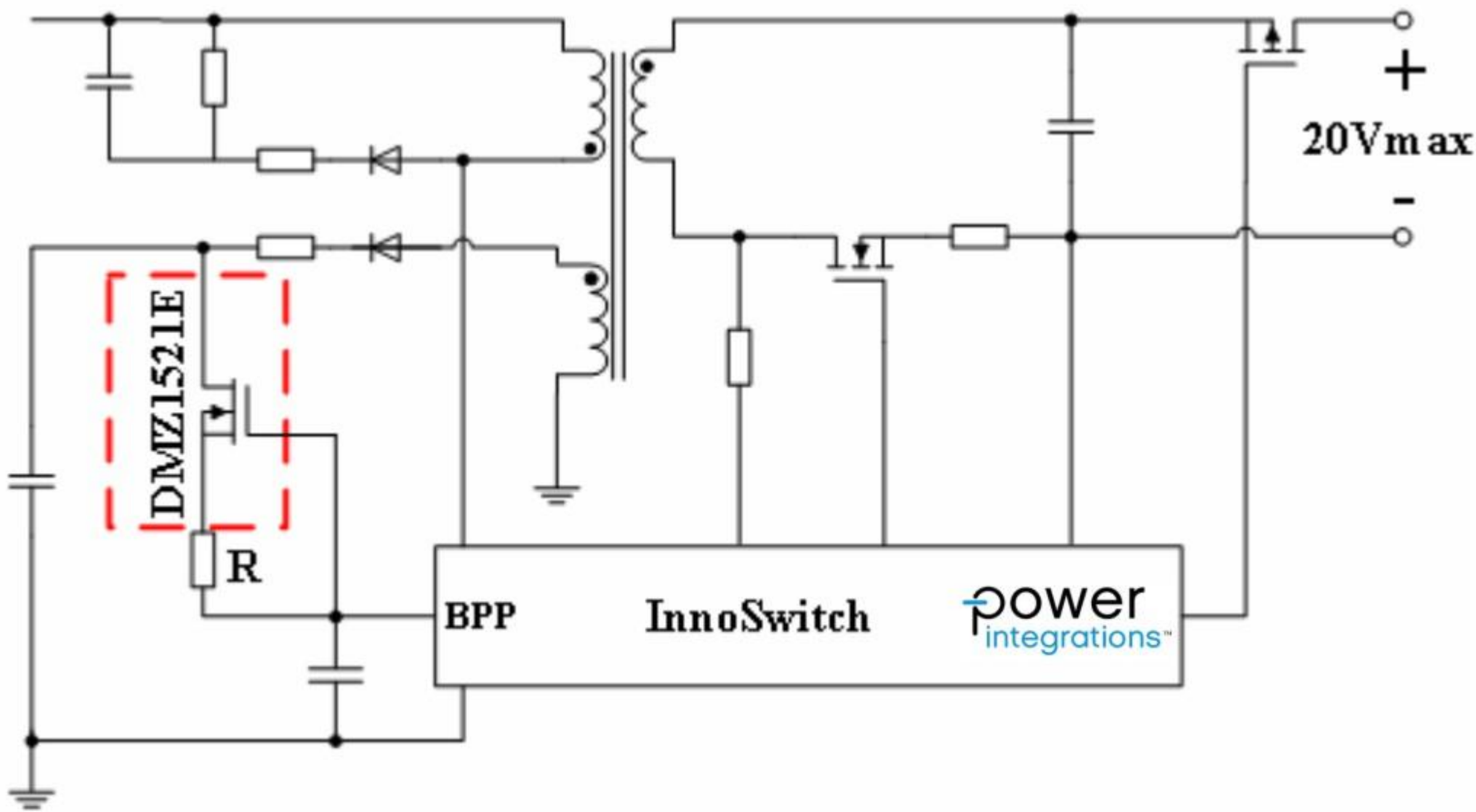
# 产品/DMZ1521E

PI 40W~100WPD充电器系列方案均选用ARK (方舟微) DMZ1521E。方案利用其亚阈值特性,与电阻组成恒流源给InnoSwitch供电。DMZ1521E的使用能减少电路元器件数量,节省空间,同时降低充电器的待机功耗并具有更好的瞬态浪涌抑制功能。

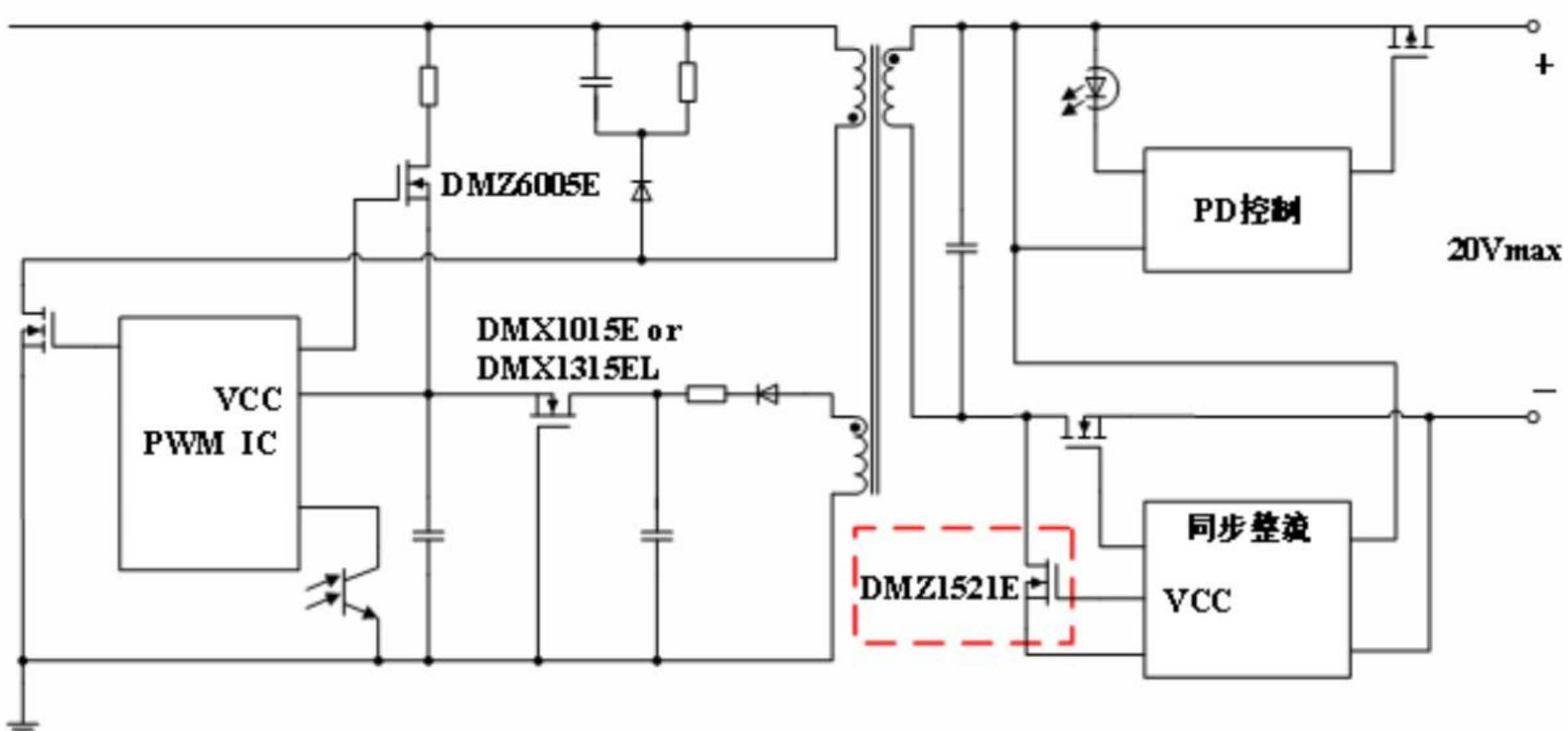
PI 65W多端口充电器方案详见下图:



在PI充电器方案中,DMZ1521E与电阻组成恒流源给InnoSwitch供电,其应用原理见下图:

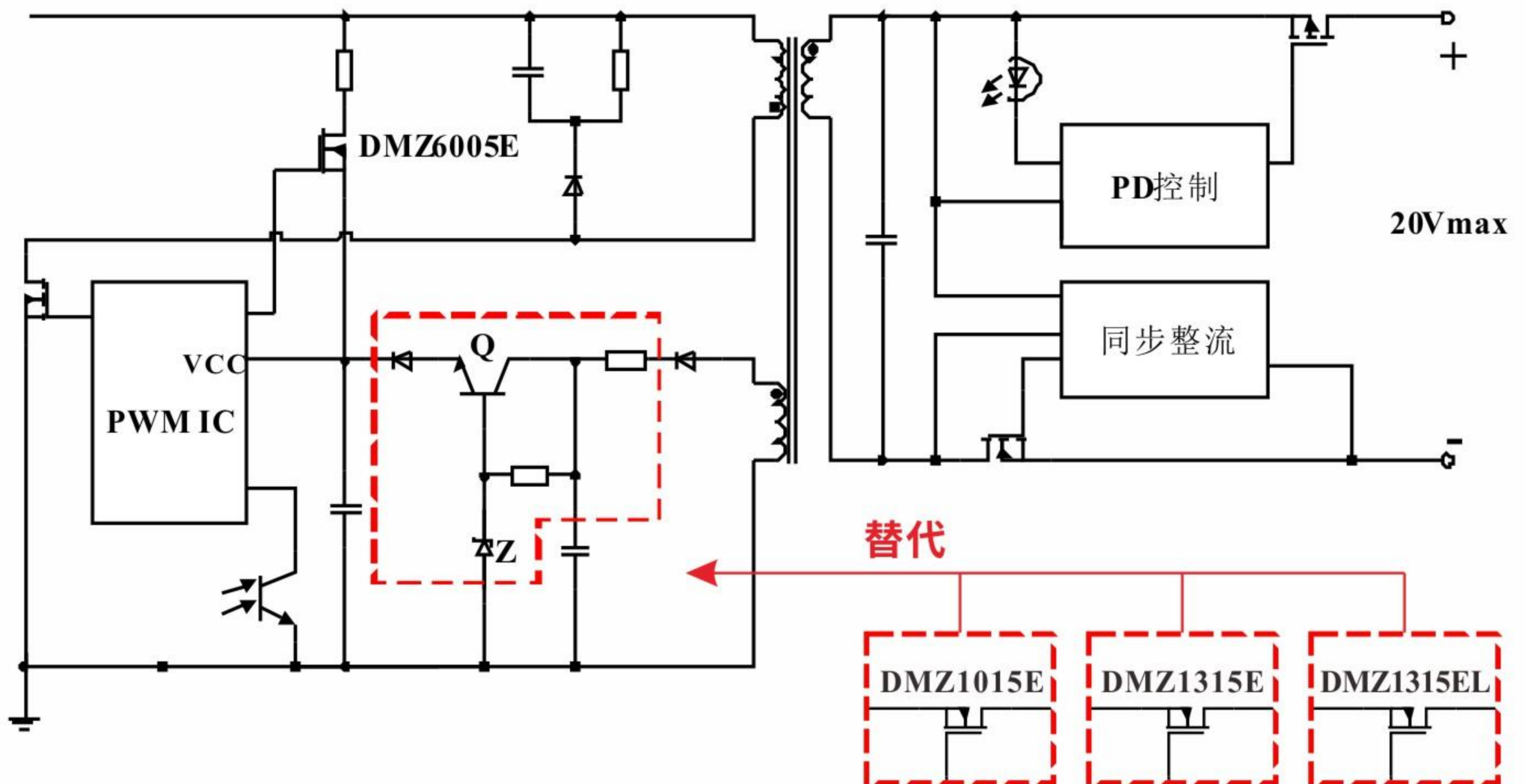


在Type-C/PD充电器中,ARK (方舟微) 为快充定制研发的DMZ1521E,采用SOT-23紧凑型封装,耐压达150V,具有较高阈值电压(5V~7V),可用于同步整流MOSFET漏极电压检测、为同步整流IC供电并提供电压钳位保护。

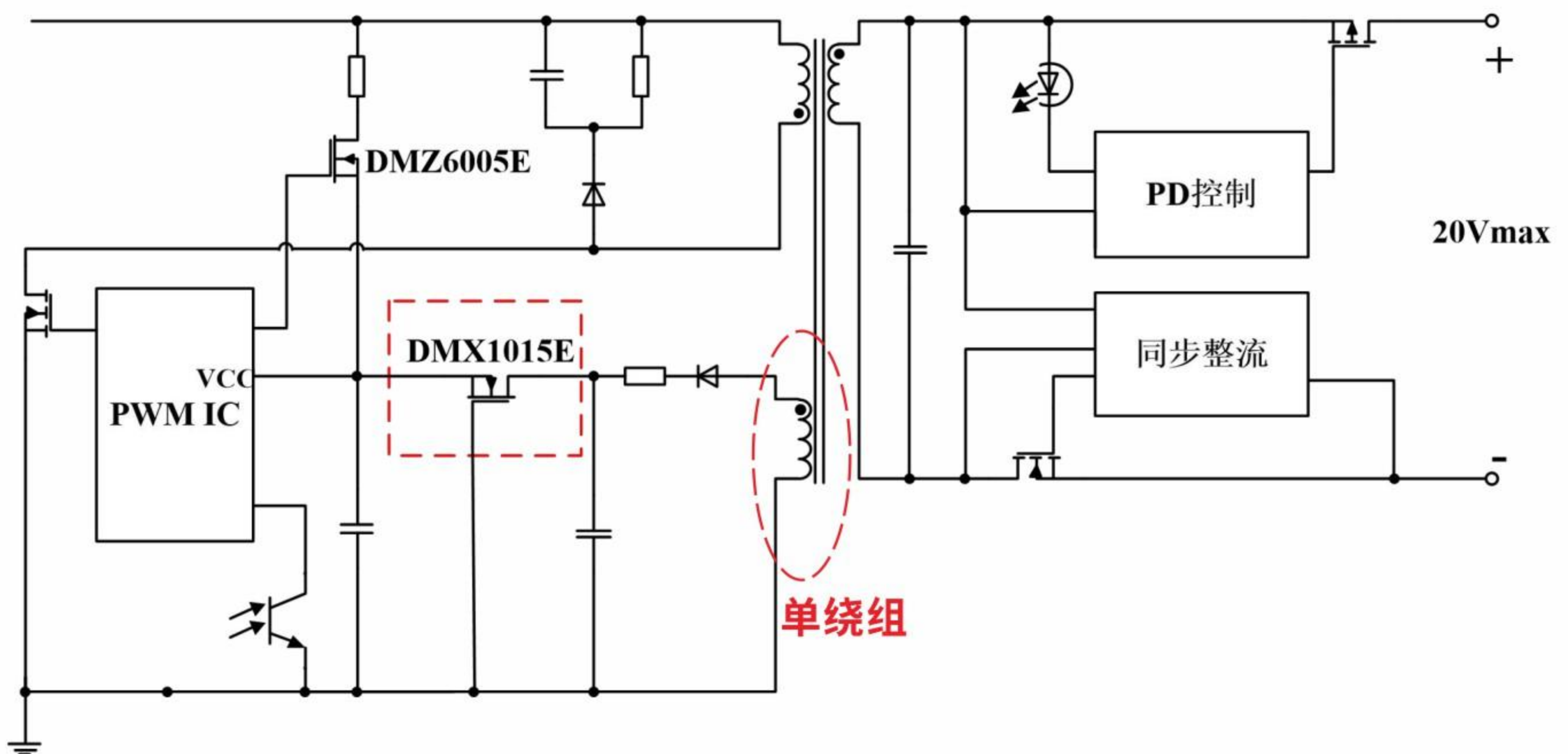


产品DMZ1015E/DMX1015E

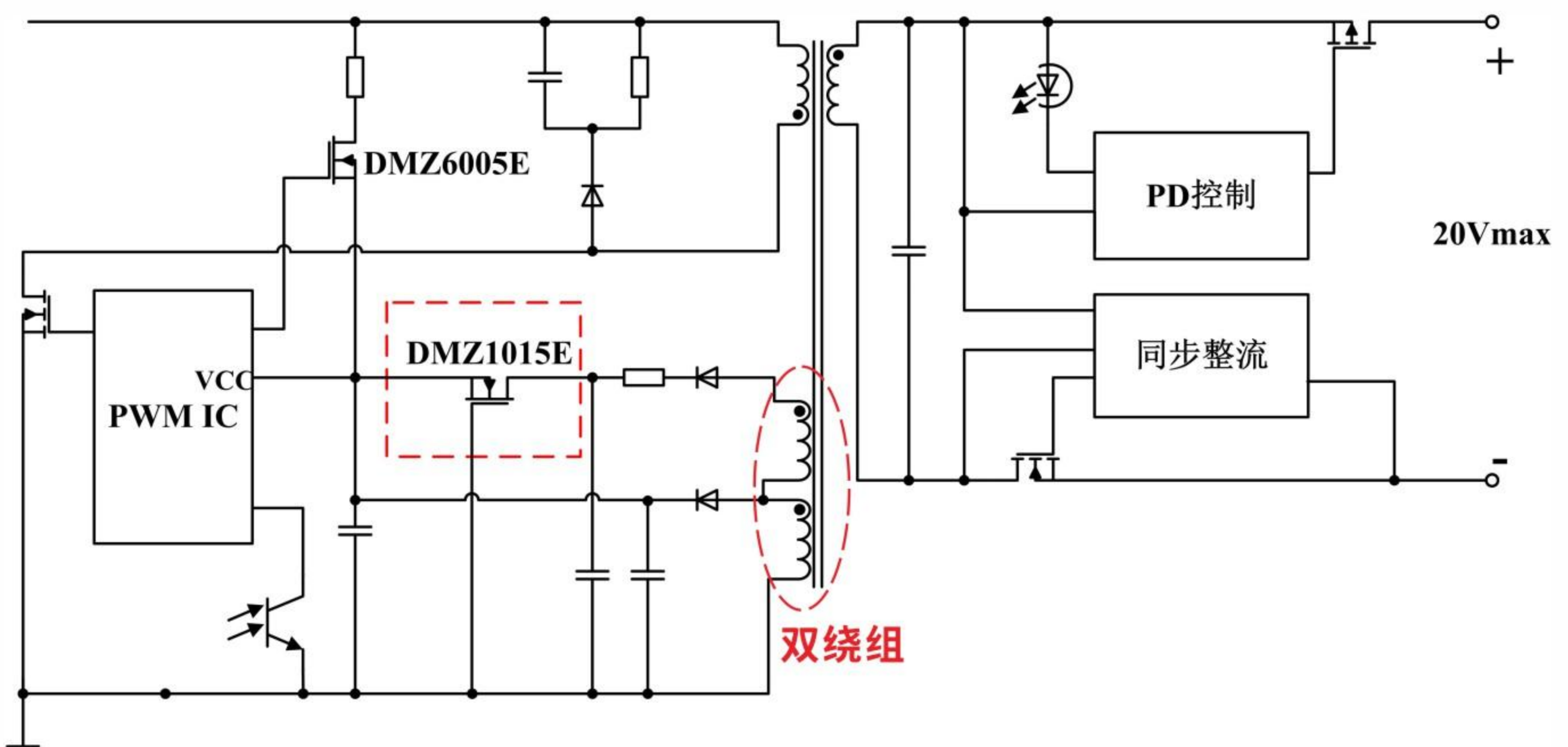
采用传统三极管调节器,实现PWM IC的VCC供电,需数颗器件,占用空间、增加功耗、降低可靠性。



ARK (方舟微) 为快充定制研发的DMZ1015E/DMX1015E作为高压线性稳压器,特有的高阈值“UltraVt<sup>®</sup>”技术,可为PWM IC提供更稳定的电压或电流,同时使PWM IC电源电路更加简化。



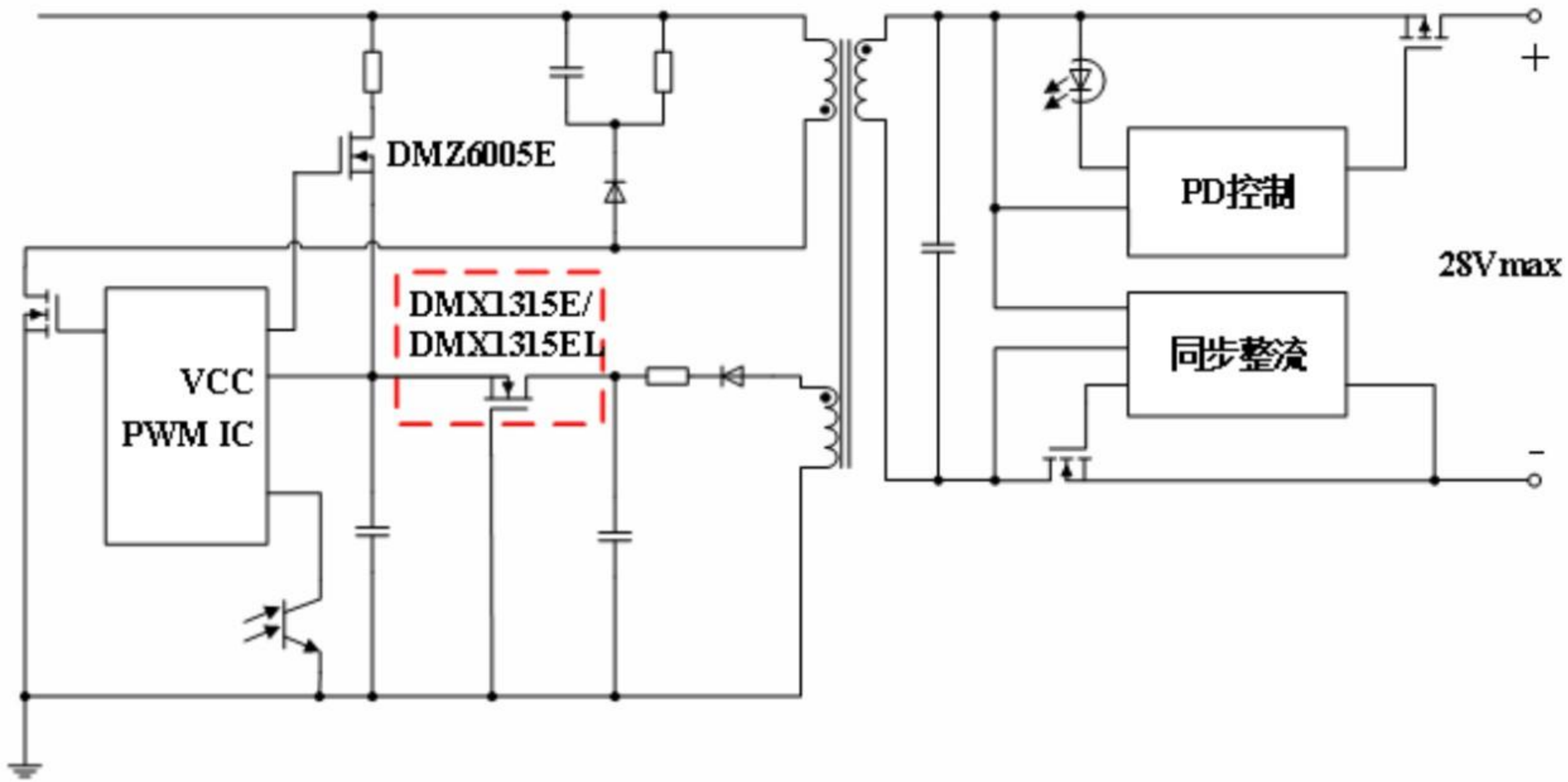
DMX1015E (SOT-89封装), 耗散功率1W, 能承受更宽的输入电压, 适合单绕组的VCC供电。DMZ1015E (SOT-23封装) 耗散功率0.5W, 适合双绕组的VCC供电。



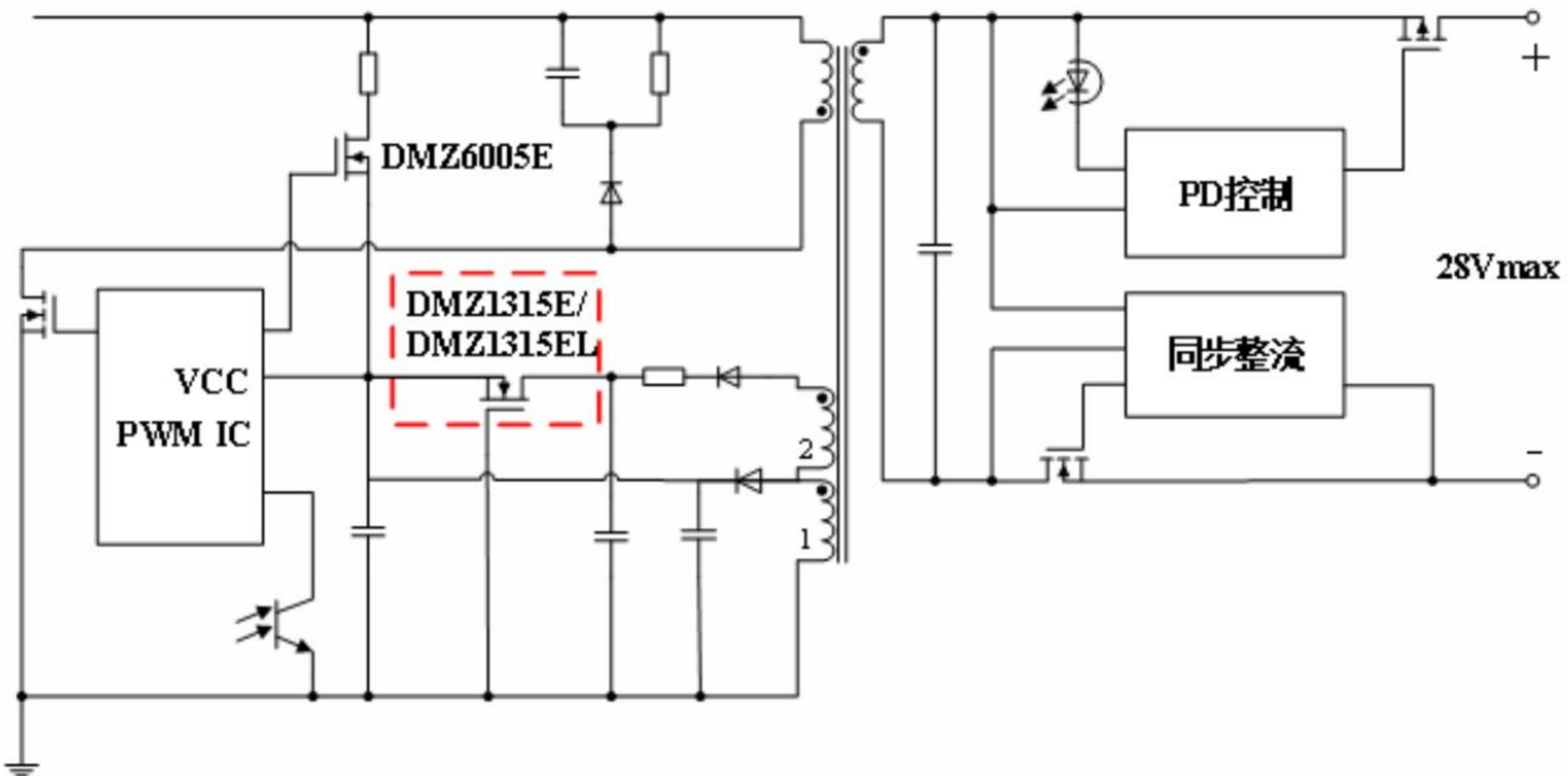


## 产品/DMZ1315E(L)/DMX1315E(L)

在Type-C/PD充电器中, ARK(方舟微)研发的DMZ1315E(L)/DMX1315E(L)可作为高压线性稳压源, 特有的高阈值“ UltraVt<sup>®</sup> ”技术, 利用其亚阈值特性实现稳定的电压或电流输出, PWM IC电源电路更加简化。该系列属于DMZ1015E的升级版, 耐压提高至130V, 不仅适用于原DMZ1015E的所有应用方案, 还可用于对电压有更高要求的方案(如PD3.1中新增的28V/5A输出)。

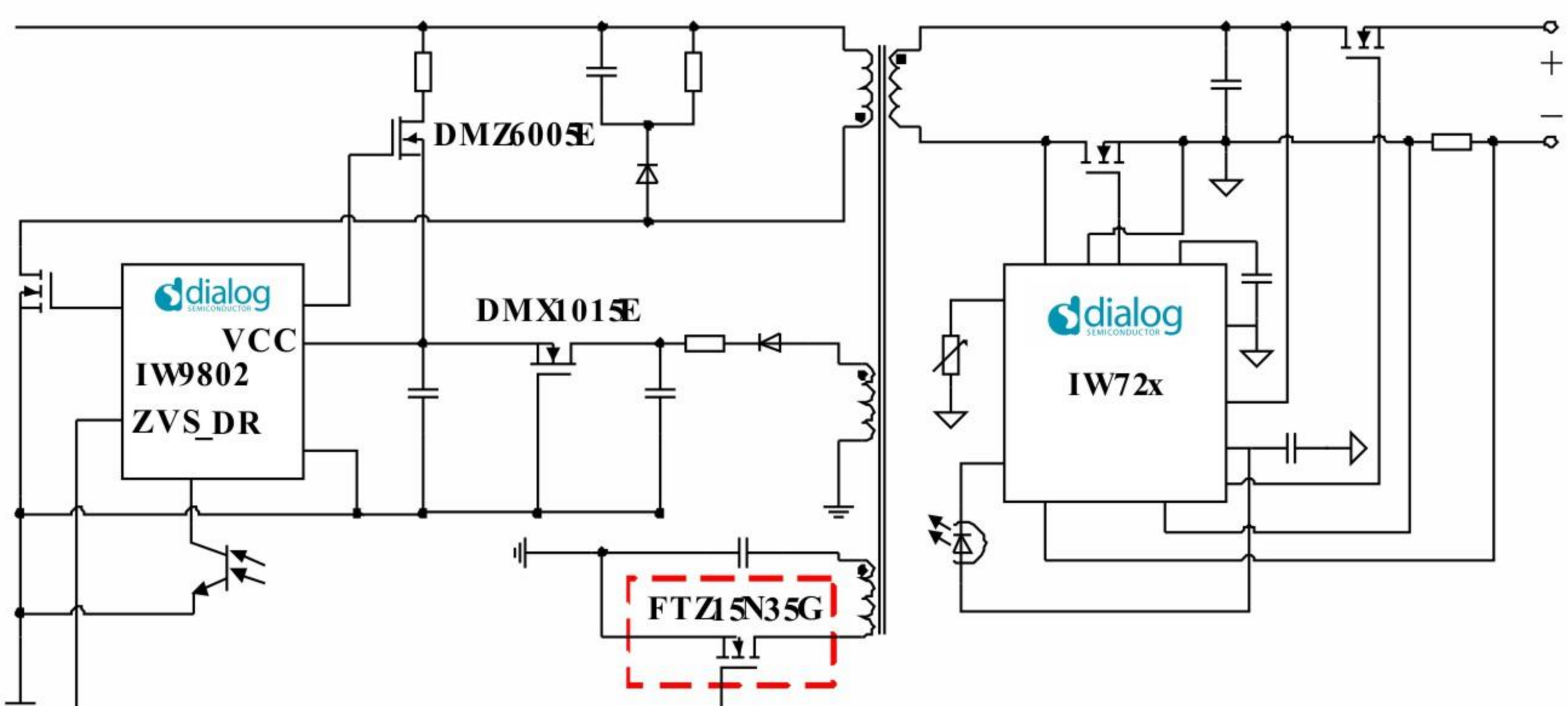


DMX1315E(L) (SOT-89封装) 耗散功率1W, 能承受更宽的输入电压, 适合单绕组的VCC供电, DMZ1315E(L) (SOT-23封装) 耗散功率为0.5W, 适合双绕组的VCC供电。



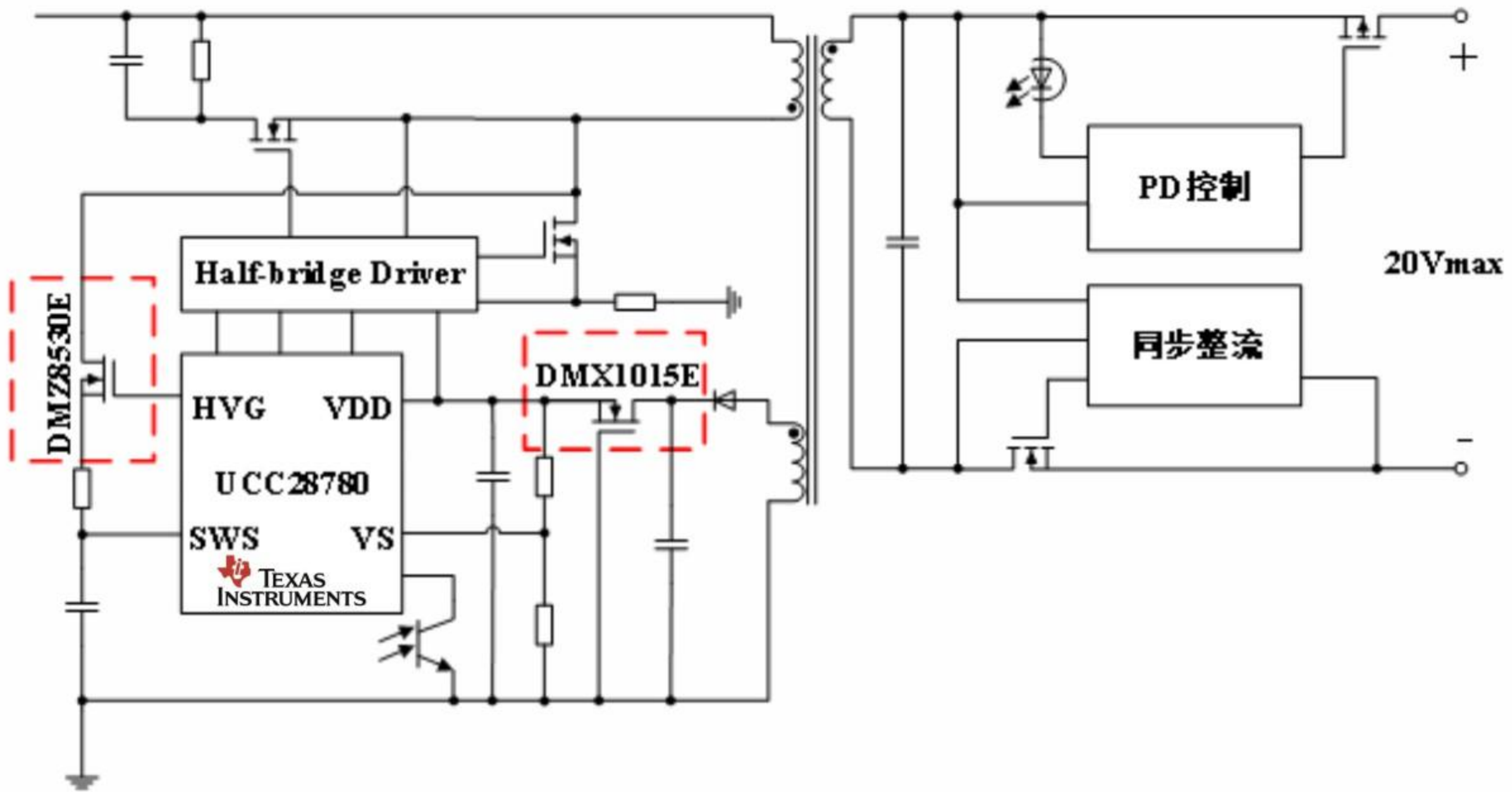
## 产品/FTZ15N35G

ARK(方舟微)研发的FTZ15N35G, 耐压350V, SOT-23封装。Dialog利用其特有电特性, 作为ZVS辅助开关MOSFET使用, 为主MOSFET创造ZVS条件。



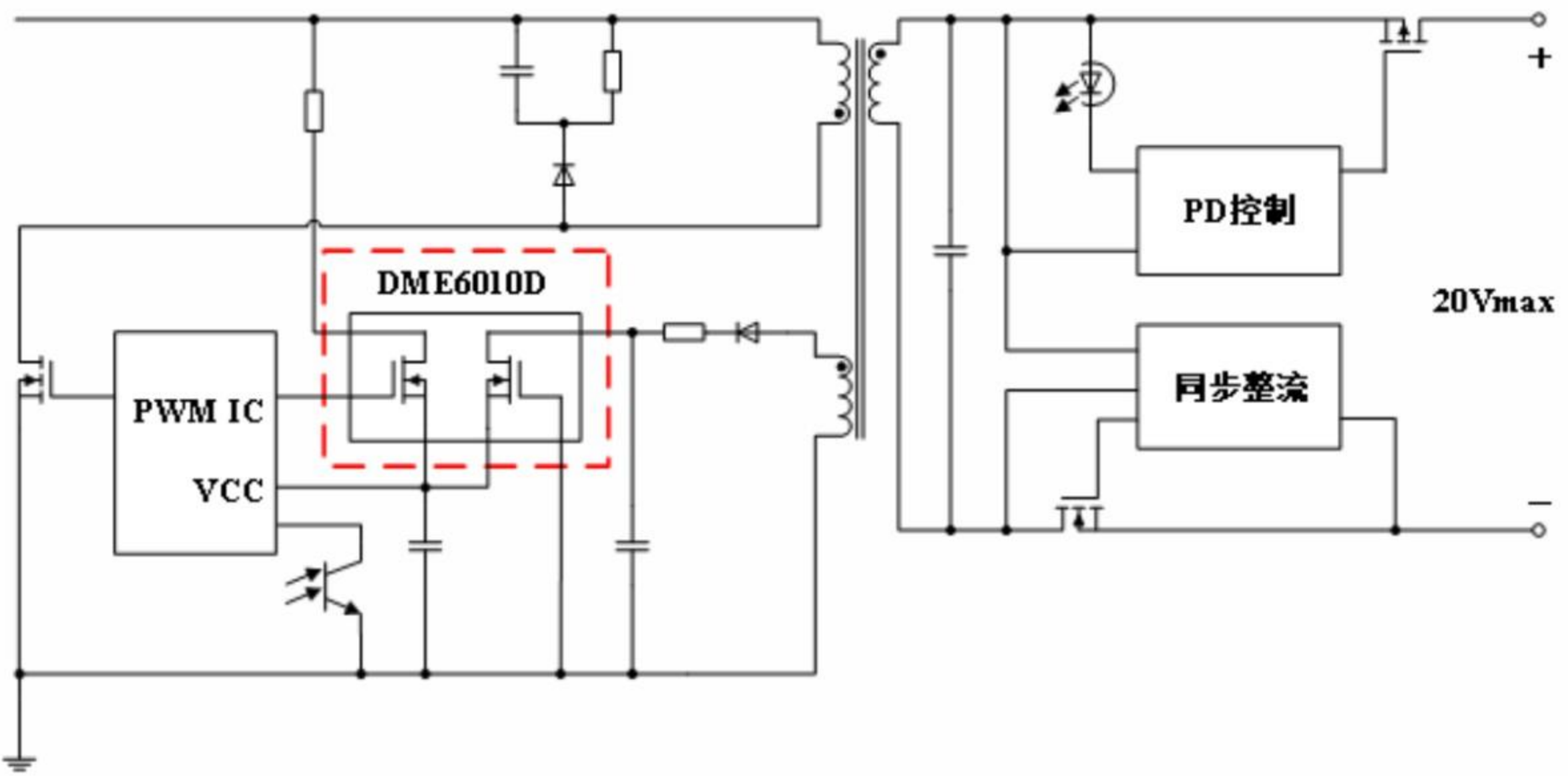
## 产品/DMZ8530E

ARK (方舟微) 研发的DMZ8530E, 耐压850V, 在TI的高频有源箝位交直流反激变换器应用电路中, 可用于ZVS过零电压检测。Type-C/PD充电器启动阶段, 通过DMZ8530E给电源IC供电, 启动完成后, 电源IC由附加绕组通过DMX1015E供电, 此时, DMZ8530E用于高压开关节点的ZVS过零电压检测。



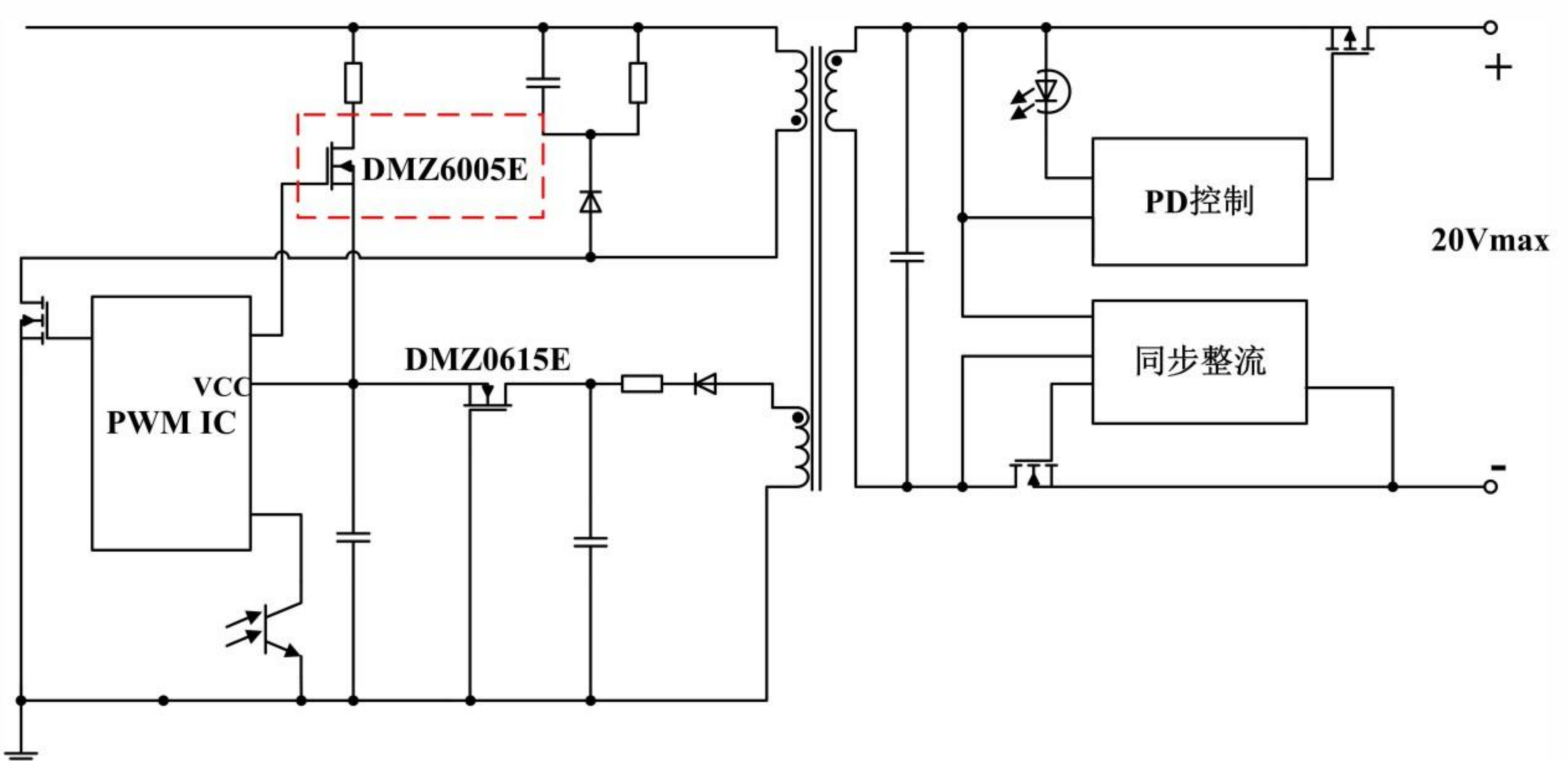
## 产品/DME6010D

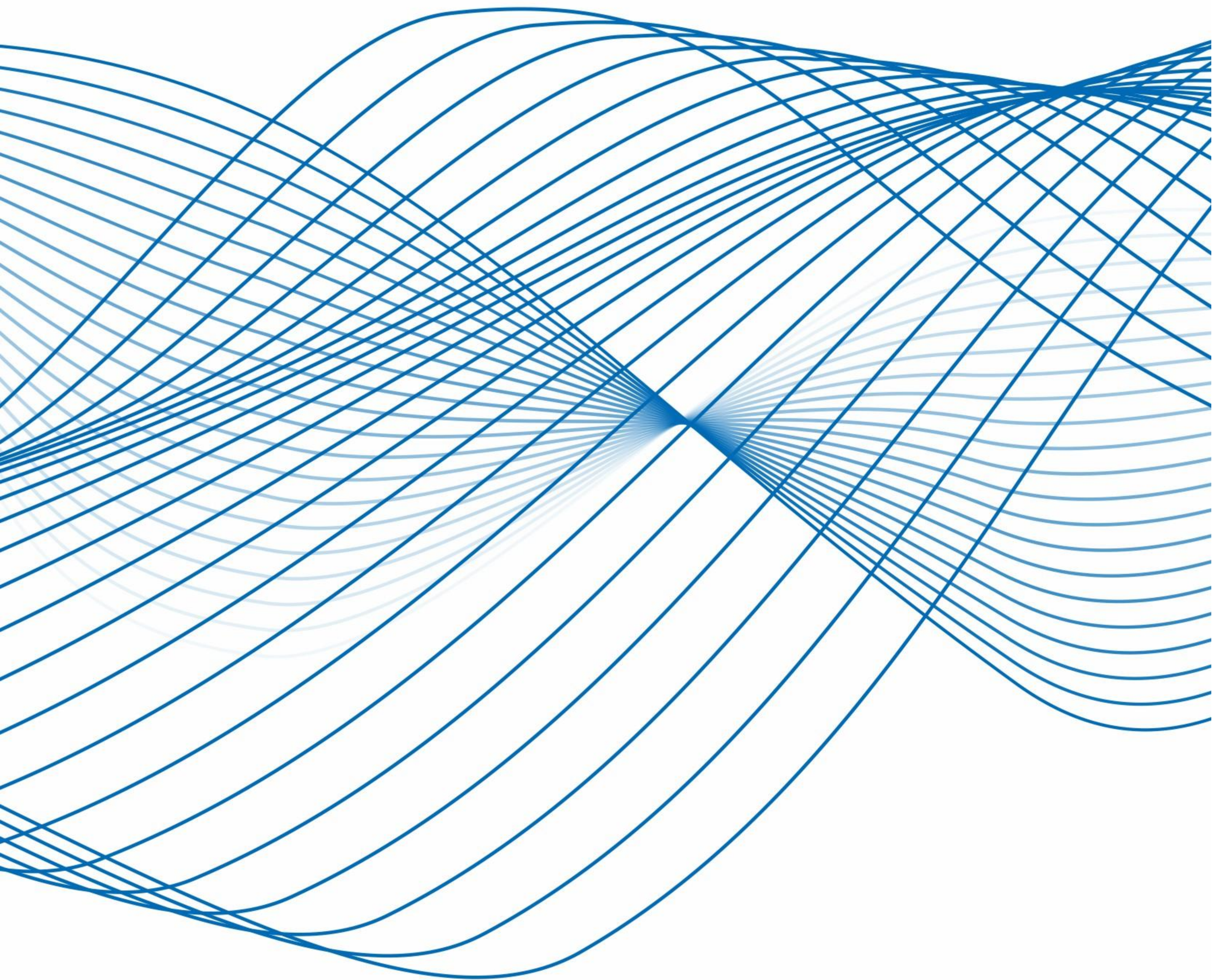
ARK (方舟微) 研发的DME6010D采用SOP-7封装, 内部集成 600V的耗尽型MOSFET和100V的稳压芯片, 同时满足PWM IC的启动与供电。应用于Type-C/PD充电器电路, 可简化电路, 节约空间与成本, 提高可靠性。



## 产品/DMZ6005E

在Type-C/PD充电器电路中, ARK (方舟微) 研发的DMZ6005E以其特有的电特性, 替代传统电阻启动, 启动完成后, 自动关闭, 由附加绕组供电, 无功耗。DMZ6005E的应用方案与传统的电阻式启动电路比较, 系统具有: 低功耗高效率, 器件发热低, PCB 布局紧凑, 高可靠性等优势。





**ARKmicro**

成都方舟微电子有限公司  
ARK Microelectronics Co., Ltd.

网址: [www.ark-micro.com](http://www.ark-micro.com)

电话: 18280230341

座机: 028-85232215、028-85225586

邮箱: [sales@ark-micro.com](mailto:sales@ark-micro.com)

QQ: 2656262862

地址: 成都市双兴大道1号电子科大科技园D26栋

深圳分公司

电话: 15994769483

座机: 0755-83256346

邮箱: [liliang@ark-micro.com](mailto:liliang@ark-micro.com)

QQ: 23503050

地址: 深圳市福田区彩田南路2008号润恒大厦

