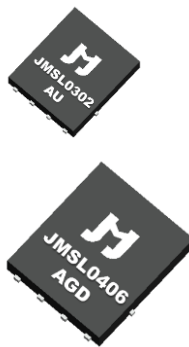


30/40V系列 N-沟道 JSFET® 具业界领先水平的 $R_{ON,sp}$ 30/40V-series JSFET® Offers Leading $R_{ON,sp}$ to Benefit Wide Range of DC/DC & AC/DC Applications



JSFET® 30/40V 适用于多种负载范围的终端。利用最先进的工艺流程、新型封装技术，结合对终端应用的理解，该系列 SGT MOSFETs 电气特性达业界领先水平。

The 30/40V-series JSFET® already in production are well suited for applications with light ~ heavy power duty requirement. They leverage state-of-the-art process node, patented device implementation and package / assembly technologies, and thorough understandings of the often-inconsistent application requirements.

Key Aspects of 30/40V-series JSFET®

■ Exceptional $R_{ON,sp}$ Leading to Outstanding FOM

Domestic-leading $R_{ON,sp}$ results in outstanding figure-of-merit (FOM) at 47 for the 30V device and at 81 or lower for the 40V device, all achieved in the innovative PDFN3x3 package.

■ Low Q_g & $V_{GS(th)}$ Good for Hard Switching

With $V_{GS(th),Typ}$ at 1.7V and $Q_{g,Typ}$ as low as 39nC & 17nC, these 30V & 40V devices are well suited for hard switching - a key requirement of the DC/DC buck/boost voltage conversion.

■ Unclamped Inductive Switching Tested

Fully UIS tested during production to confirm the device's ability to withstand the avalanche energy common in both the resistive and inductive type of loads.

■ Thermally Efficient & Diverse Packages

Low-profile surface-mounted packages in the PDFN 3x3 & 5x6 configuration are optimized to keep the thermal resistance and stray inductance minimal.

具国内最小单元间隔的 40V JSFET®, 实现全球行业领先的 $R_{ON,sp}$ 。采用先进 PDFN3x3 封装的 30V SGT MOSFET, $R_{DS(ON)}$ 达到国内同类产品最佳水平, 对标国际一流。

With the smallest cell-pitch ever designed domestically, the 40V devices achieve superior $R_{ON,sp}$ which is among the best in the world. The 30V device assembled in the PDFN3x3 package offers outstanding $R_{DS(ON)}$ which is the best amongst the domestic competition and matches / exceeds any competing device globally.

超低的 Q_g & $R_{DS(ON)}$, 有效地降低在 DC/DC 和 AC/DC 等应用中的开关及导通损耗。采用先进封装技术, 在保留电气和热性能稳定的同时, 有效的解决了终端在尺寸结构方面的限制。

The very low Q_g & $R_{DS(ON)}$ of the 30/40V devices significantly minimize the switching & conduction losses in DC/DC & AC/DC applications. Coupled with equally innovative package technology, these devices easily fit in end systems with tight application space & good industry design.

采用高热效能的 PDFN3x3、PDFN5x6、及双渠道的 PDFN 5x6_Dual 封装, 此系列的 30/40V SGT MOSFETs 无卤素, 且符合 RoHS 标准。

Packaged in the thermally efficient PDFN 3x3 / 5x6 with either single or dual die, the devices produced are all halogen-free and RoHS-compliant.

Market Applications

- DC/DC buck/boost voltage conversion in PC mainboards, graphics add-on cards, data centers, car chargers, network appliances, consumer life-style personal appliances like hair dryer and e-cigarette, etc.
同步/非同步直流升降压: 电脑主板、图像处理板卡、数据中心、车充、网络设备、数码生活个人小家电
- V_{BUS} switching in fast chargers and USB-C ports in mobile computers
 V_{BUS} 电源开关: 快充充电器、含支持电源进出 USB-C 端口的终端
- Half-bridge inverter for motor driving in power tools, unmanned ariel vehicles, (UAV), home automation
半桥逆变器: 消费类电动工具、无人机、智能家电
- Load switching at point-of-loads (POLs) in consumer / commercial / industrial / FPGA-based computing
负载开关 - 消费 / 商用 / 工业类电脑主板、FPGA 主板等的负载点电源开关

Application Circuits

The low $R_{DS(ON)}$ & Q_g of the 30V devices result in high power efficiency in the typical DC/DC buck and/or boost conversion found in all kind of end products. They are: PC and graphics mainboards, computer peripherals, industrial computing, battery-operated power tools, home automation, consumer life-style personal appliances, unmanned ariel vehicles, battery management system (BMS), etc. The low $V_{GS(th_Typ)}$ @ 1.7V is compatible to the typical MCU-based embedded controller. Illustrated in Figures 1 & 2 are the typical application circuits for buck conversion and DC motor driving. The dual-N configuration shown in Figure 3 makes the 40V devices (e.g. JMSL0406AGD) particular appealing to V_{BUS} switching in the popular fast charger with two output terminals: one of USB Type-C and one of USB Type-A.

Figure 1: Sync. Buck Conversion

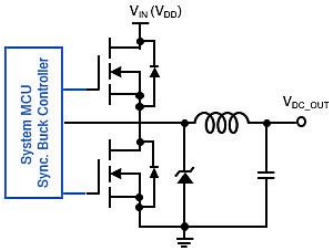


Figure 2: 2-Phase DC Motor Driving

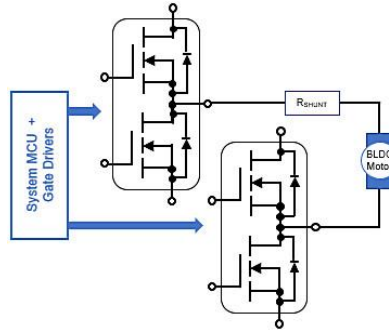
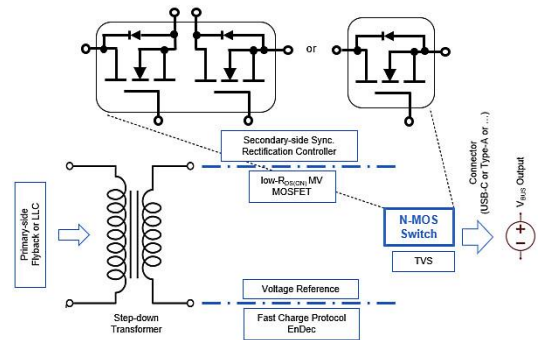


Figure 3: 1 / 2-ch V_{BUS} Switching in Fast Charger

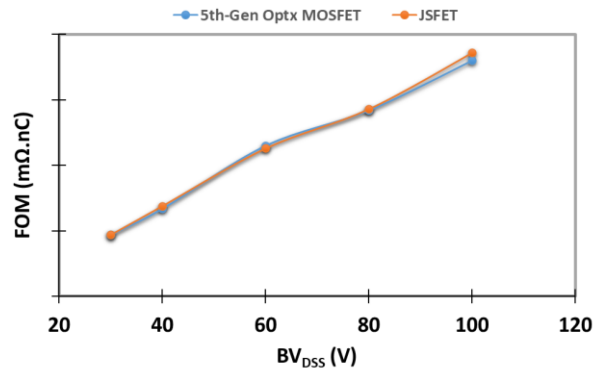
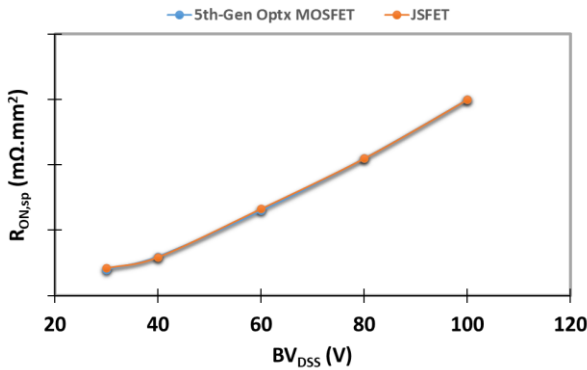


Product Portfolio

Product Name	Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$R_{DS(ON_Typ)}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON_Max)}$ @ $V_{GS}=10V$ (m Ω)	V_{GS_Max} (V)	$V_{GS(th_Typ)}$ (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	C_{oss_Typ} (pF)	C_{rss_Typ} (pF)	Q_g_Typ (nC)	FOM
JMSL0302AU	PDFN3x3	N	30	145	1.2	1.5	± 20	1.7	101	2,975	2,650	117.0	39.0	47
JMSL0302AG	PDFN5x6	N	30	178	1.3	1.6	± 20	1.7	101	2,975	2,650	117.0	39.0	51
JMSL0406AU	PDFN3x3	N	40	55	4.5	5.6	± 20	1.7	36	1,204	536	51.0	17.9	81
JMSL0406AG	PDFN5x6	N	40	70	4.2	5.2	± 20	1.7	36	1,204	536	51.0	17.9	81
JMSL0406AGD	PDFN5x6_Dual	N+N	40	43	5.7	6.9	± 20	1.7	22	1,227	526	55.0	19.4	111

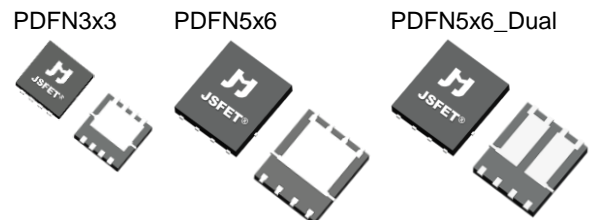
For more information, please visit <http://www.jjwdz.com>.

Benchmark Information



Shipping Information

Package	# of Pins	Media	Quantity (pcs)
PDFN3x3	8	13-inch Reel	3,000
PDFN5x6	8	13-inch Reel	3,000
PDFN5x6_Dual	8	13-inch Reel	3,000



Samples and production quantities of the 30/40V-series JSFET are available from sales_sh@jjwdz.com and authorized sales distributors.