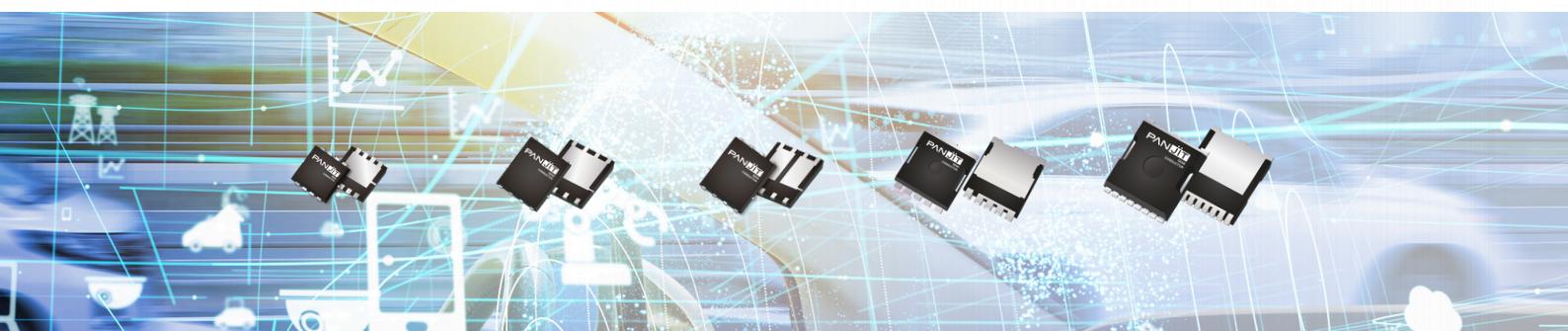


30 V & 40 V Automotive-Grade N-Channel MOSFET

AEC-Q101 qualified with 175°C junction temperature



PANJIT's latest N-channel power MOSFETs are designed with advanced trench technology to provide excellent figure of merit(FOM), lower $R_{DS(ON)}$ and capacitance. The new design reduces conduction losses and switching losses while boosting electrical performances. They are available in DFN3333-8L, DFN5060-8L, DFN5060B-8L, sTOLL, and TOLL packages, which are low profile packages that save spaces. PANJIT offers a comprehensive solution for highly efficient, reliable and space saving PCB layout applications.

► Key Features

- 30 V & 40 V Gen. 2 N-channel advanced trench
- Low $R_{DS(ON)}$ to minimize conduction losses
- 175°C operating junction temperature
- AEC-Q101 qualified and PPAP capable
- Low FOM to minimize driver losses
- Standard and logic levels available

► $R_{DS(ON)}$ Optimization

| 30 V MOSFET | | |
|---------------|-------------------|-------------------|
| Product | $R_{DS(ON)}$ Typ. | $R_{DS(ON)}$ Typ. |
| PJQ5518C-AU | 0.77 mΩ | -33 % |
| PJQ5516S6C-AU | 0.51 mΩ | |

| 40 V MOSFET | | |
|---------------|-------------------|-------------------|
| Product | $R_{DS(ON)}$ Typ. | $R_{DS(ON)}$ Typ. |
| PJQ5538C-AU | 0.92 mΩ | -37 % |
| PJQ5536S6C-AU | 0.58 mΩ | |

Based on DFN5060 package

► FOM Optimization

Typ. $R_{DS(ON)} \times Q_g @ V_{GS} 10 V$

| | Standard Trench | Gen. 1 Advanced Trench | Gen. 2 Advanced Trench |
|------|-----------------|------------------------|------------------------|
| 30 V | 1.3 mΩ x 120 nC | 0.77 mΩ x 76 nC | 0.66 mΩ x 65 nC |
| 40 V | 2.2 mΩ x 100 nC | 0.95 mΩ x 85 nC | 0.8 mΩ x 85 nC |

Based on DFN5060 package



➤ Target Applications

| Automotive | Power System | Industrial | Consumer |
|--|---|---|---|
| <ul style="list-style-type: none"> • Power motor drive • Oil & water pumps • Infotainment • Sensor • ADAS | <ul style="list-style-type: none"> • DC power tool • Control board • Power supply • LED lighting • BMS | <ul style="list-style-type: none"> • Data center • Telecom • DC fan • Server • Robot | <ul style="list-style-type: none"> • Wireless charger • Vacuum cleaner • Small appliance • Quick charger • Drone |

➤ Products

| Series | V _{DS} | V _{GS} | V _{GS(th)} Max. | R _{DS(ON)} @10 V Typ. | R _{DS(ON)} @4.5 V Typ. | DFN3333-8L | DFN5060-8L | DFN5060B-8L | sTOLL | TOLL |
|-------------------------------|-----------------|-----------------|-----------------------------|--------------------------------------|---------------------------------------|---|---|--|---|---|
| | V | V | V | mΩ | mΩ |  |  |  |  |  |
| 30 V Gen. 2 Logic Level | 30 | ±20 | 1.5 | 5.1 | 7.5 | PJQ4528S6P-AU | PJQ5528S6-AU | | | |
| | | | | 3.7 | 5.7 | PJQ4524S6P-AU | PJQ5524S6-AU | | | |
| | | | | 3.1 | 4.5 | PJQ4522S6P-AU | PJQ5522S6-AU | | | |
| | | | | 2 | 2.8 | PJQ4520S6P-AU | PJQ5520S6-AU | | | |
| | | | | 1.3 | 2.2 | PJQ4518S6CP-AU | PJQ5518S6C-AU | | | |
| | | | | 0.66 | 0.96 | - | PJQ5516S6C-AU | | | |
| | | | | 0.52 | 0.75 | - | PJQ5514S6C-AU | | | |
| 40 V Gen. 2 Logic Level | 40 | ±20 | 1.6 | 5.5 | 8.4 | PJQ4548S6P-AU | PJQ5548S6-AU | PJQ5948S6-AU | | |
| | | | | 4.7 | 6.9 | PJQ4546S6P-AU | PJQ5546S6-AU | | | |
| | | | | 3.5 | 4.9 | PJQ4544S6P-AU | PJQ5544S6-AU | PJQ5944S6-AU | | |
| | | | | 2.3 | 3.2 | PJQ4542S6P-AU | PJQ5542S6-AU | - | | |
| | | | | 1.5 | 2.4 | PJQ4540S6CP-AU | PJQ5540S6C-AU | - | | |
| | | | | 0.77 | 1.26 | - | PJQ5538S6C-AU | - | PJM180N04S6-AU* | |
| | | | | 0.58 | 0.83 | - | PJQ5536S6C-AU | - | PJM200N04S6-AU* | |
| | | | | 0.5 | - | - | - | - | PJM250N04S6-AU* | PJN300N04S6-AU* |
| | | | | 0.45 | - | - | - | - | | PJN350N04S6-AU* |
| | | | | 0.38 | - | - | - | - | - | PJN400N04S6-AU* |
| 40 V Gen. 2 Standard Level | 40 | ±20 | 3 | 6.3 | 9 | PJQ4548S6VP-AU | PJQ5548S6V-AU | PJQ5948S6V-AU | | |
| | | | | 4.8 | 6.8 | PJQ4546S6VP-AU | PJQ5546S6V-AU | | | |
| | | | | 4 | 5 | PJQ4544S6VP-AU | PJQ5544S6V-AU | PJQ5944S6V-AU | | |
| | | | | 2.7 | 4 | PJQ4542S6VP-AU | PJQ5542S6V-AU | - | | |
| | | | | 1.86 | 2.8 | PJQ4540S6VCP-AU | PJQ5540S6VC-AU | - | | |
| | | | | 0.8 | 1 | - | PJQ5538S6VC-AU | - | PJM180N04S6V-AU* | |
| | | | | 0.68 | 0.93 | - | PJQ5536S6VC-AU | - | PJM200N04S6V-AU* | |
| | | | | 0.5 | - | - | - | - | PJM250N04S6V-AU* | PJN300N04S6V-AU* |
| | | | | 0.45 | - | - | - | - | | PJN350N04S6V-AU* |
| | | | | 0.38 | - | - | - | - | - | PJN400N04S6V-AU* |

*Under development with samples available - Package Limitation