

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, DFN5060XC-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
- Power motor drive - Oil & water pumps - Infotainment - Sensor - ADAS	- DC power tool - Control board - Power supply - LED lighting - BMS	- Data center - Telecom - DC fan - Server - Robot	- 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 DFN5060XC-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