

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	-34 %
PJQ5514S6C-AU	0.51 mΩ	
40 V MOSFET		
Product	$R_{DS(ON)}$ Typ.	$R_{DS(ON)}$ Typ.
PJQ5538C-AU	0.92 mΩ	-41 %
PJQ5536S6C-AU	0.54 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 87 nC
40 V	2.2 mΩ x 100 nC	0.95 mΩ x 85 nC	0.88 mΩ x 85 nC

Based on DFN5060 package



➤ Target Applications

Automotive

- Power motor drive
- Oil & water pumps
- Infotainment
- Sensor
- ADAS

Power System

- DC power tool
- Control board
- Power supply
- LED lighting
- BMS






Industrial

- Data center
- Telecom
- DC fan
- Server
- Robot

Consumer

- 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	1.6	4.7	7.3	PJQ4528S6P-AU	PJQ5528S6-AU				
				3.8	5.8	PJQ4524S6P-AU	PJQ5524S6-AU				
				2.5	3.8	PJQ4522S6P-AU	PJQ5522S6-AU				
				1.9	2.8	PJQ4520S6P-AU	PJQ5520S6-AU				
				1.4	2.1	PJQ4518S6CP-AU	PJQ5518S6C-AU				
				0.66	0.96	-	PJQ5516S6C-AU				
				0.51	0.74	-	PJQ5514S6C-AU				
40 V Gen. 2 Logic Level	40	±20	1.6	5.5	8.3	PJQ4548S6P-AU	PJQ5548S6-AU	PJQ5948S6-AU			
				4.6	6.6	PJQ4546S6P-AU	PJQ5546S6-AU				
				2.9	4.4	PJQ4544S6P-AU	PJQ5544S6-AU	PJQ5944S6-AU			
				2.4	3.3	PJQ4542S6P-AU	PJQ5542S6-AU	-			
				1.55	2.4	PJQ4540S6CP-AU	PJQ5540S6C-AU	-			
				0.77	1.26	-	PJQ5538S6C-AU	-			
				0.54	0.79	-	PJQ5536S6C-AU	-	PJM200N04S6-AU*		
				0.45	-	-	-	-	PJM250N04S6-AU*		
				0.4	-	-	-	-	-		PJN350N04S6-AU*
0.33	-	-	-	-	-	-	PJN400N04S6-AU*				
40 V Gen. 2 Standard Level	40	±20	2.8	5.7	8.2	PJQ4548S6VP-AU	PJQ5548S6V-AU	PJQ5948S6V-AU			
				5	7.1	PJQ4546S6VP-AU	PJQ5546S6V-AU				
				3.4	4.8	PJQ4544S6VP-AU	PJQ5544S6V-AU	PJQ5944S6V-AU			
				2.3	3.1	PJQ4542S6VP-AU	PJQ5542S6V-AU	-			
				1.75	2.8	PJQ4540S6VCP-AU	PJQ5540S6VC-AU	-			
				0.88	1.32	-	PJQ5538S6VC-AU	-			
				0.64	0.88	-	PJQ5536S6VC-AU	-	PJM200N04S6V-AU*		
				0.5	-	-	-	-	PJM250N04S6V-AU*		
				0.45	-	-	-	-	-		PJN350N04S6V-AU*
				0.38	-	-	-	-	-	-	PJN400N04S6V-AU*

*Under development with samples available - Package Limitation