

Automotive-Grade SGT G3 MOSFET

Excellent Figure-of-Merit & Dual-Side Cooling



PANJIT's third-generation Shielded-Gate Trench (SGT) MOSFETs are engineered for high-frequency DC/DC converters and automotive-grade reliability. Qualified to AEC-Q101 standards and rated for junction temperatures up to 175 °C, these devices are ideal for demanding applications such as electric power steering (EPS), onboard DC/DC converters, and other critical power control systems. Featuring an outstanding figure of merit ($R_{DS(on)} \times Q_g$), excellent avalanche capability, and superior switching performance, PANJIT's SGT MOSFETs support compact, efficient, and thermally robust designs across a variety of power topologies, including LLC, PSFB, synchronous buck, and boost converters. Offered in a broad range of package options, with highlighted solutions such as dual-side cooling packages for enhanced thermal performance and side wettable flank packages to support Automated Optical Inspection (AOI) and high-reliability automotive assembly, these MOSFETs enable flexible, robust, and manufacturable system designs.

► Key Features

- Patented DFN5060SW-8L package
- Third-generation shielded-gate trench technology
- Extremely low figure of merit ($FOM = R_{DS(on)} \times Q_g$)
- Optimized for fast switching and minimal voltage spiking
- AEC-Q101 qualified and PPAP-capable

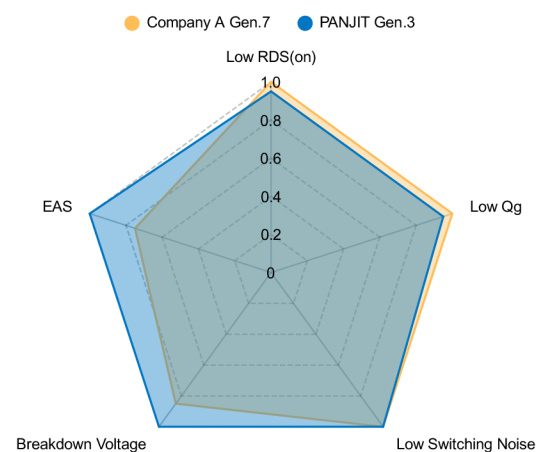
► Target Applications

- Electric power steering
- Smart fuse box
- Car seat
- DC/DC converter

► Automotive-Grade MOSFET Roadmap

	2026	2027	2028
150 V			SGT Specifications TBD
100 V	SGT Standard Level $R_{DS(on)}$: Lowest @ 1.3 mΩ Low FOM ≤135 Package: TOLL		
80 V		SGT Standard Level Specifications TBD	
60 V		SGT Specifications TBD	
40 V	SGT Standard Level $R_{DS(on)}$: Lowest @ 0.47 mΩ Low FOM ≤65 Package: DFN5060SW-8L		SGT Logic Level Package: DFN5060SW-8L

► Performance Comparison



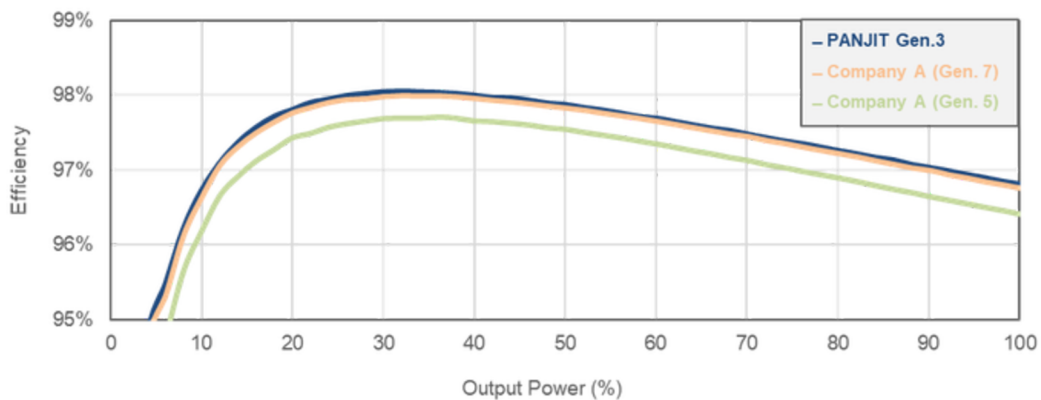
➤ 40 V Products

40 V Standard Level							
V_{th}	$R_{DS(ON)}$ @10V Typ.	$R_{DS(ON)}$ @10V Max.	DFN3333SW-8L	DFN5060SW-8L	DFN5060DA-8L	LPAK56P	TO-252AA
V	mΩ	mΩ					
2.7	2.00	2.40	PSMWE025N04NS3-AU	PSMWF024N04NS3-AU			PSMD031N04NS3-AU
	1.35	1.62	-	PSMWF016N04NS3-AU*			
	0.95	1.24	-	PSMWF011N04NS3-AU	PSMDA011N04NS3-AU**	PSMJC011N04NS3-AU**	
	0.82	1.06	-	PSMWF009N04NS3-AU			
	0.67	0.87	-	PSMWF008N04NS3-AU	PSMDA008N04NS3-AU**		-
	0.55	0.71	-	PSMWF007N04NS3-AU			-
	0.47	0.61	-	PSMWF005N04NS3-AU	-	-	-
40 V Logic Level							
1.6	1.90	2.28	PSMWE024N04LS3-AU*	PSMWF023N04LS3-AU**			PSMD030N04LS3-AU*
	1.25	1.50	PSMWE016N04LS3-AU*	PSMWF015N04LS3-AU*			
	0.83	1.00		PSMWF010N04LS3-AU*			
	0.72	0.86		PSMWF008N04LS3-AU*			
	0.59	0.71		PSMWF007N04LS3-AU*			
	0.47	0.56		PSMWF006N04LS3-AU*			
	0.39	0.47		PSMWF004N04LS3-AU*			

*Under development - Package Limitation
**Under development with samples available

➤ Output Power vs. Efficiency Performance Comparison

300 W Buck (24 V to 12 V/25 A) 400 KHz operating frequency



288 W Boost (12 V to 24 V/12 A) 400 KHz operating frequency

