

# MV MOSFET for DC-DC Converter

Gen. 2 SGT MOSFET with Excellent Figure of Merit



DC/DC converter is a power conversion system widely applied for industrial devices, such as telecom base stations and industrial power towers. With its excellent FOM ( $R_{on} \cdot Q_g$ ) quality and outstanding performance, PANJIT's second generation Shielded-Gate Trench (SGT) MOSFETs provide easy and efficient design solutions for DC-DC converter systems as well as various applications of LLC, PSFB, and Synchronous Buck circuits.

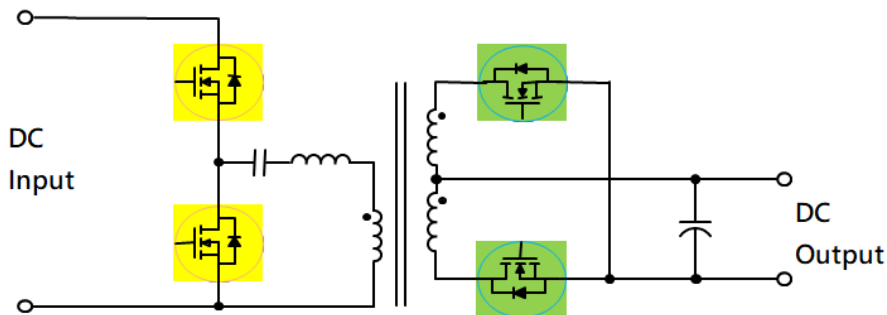
## ➤ Key Features

- Second Generation Shielded-Gate Trench Technology
- Extremely Low  $Q_g$  Figure-of-Merit (FOM)
- Low  $R_{DS(on)}$  to Minimize Conduction Losses
- Outstanding System Efficiency for Greener Products
- Optimized for high switching and low spiking

## ➤ Target Applications

- Brick Power
- POL
- Server Power
- Industrial Power
- Automotive DC/DC 48V system

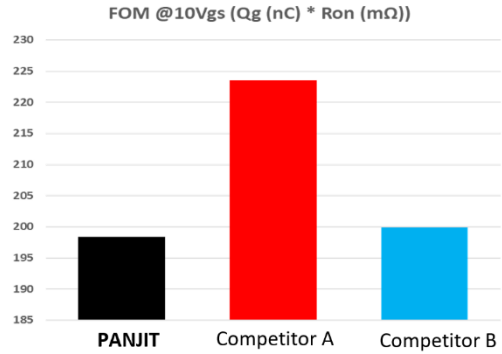
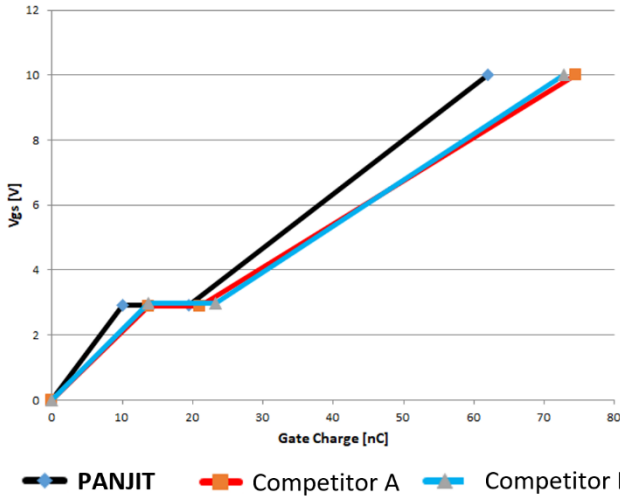
## ➤ DC-DC converter (Brick Power) Block Diagram



## ➤ Brick Size Options

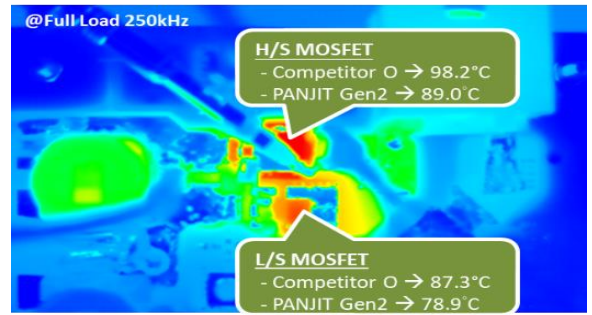
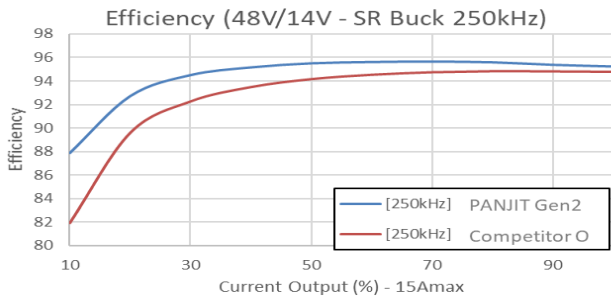
Type	Half Brick	Quarter Brick	Eighth Brick	Sixteenth Brick	Thirty-second Brick
Size(L x W)	2.3" x 2.4"	2.3" x 1.45"	2.3" x 0.9"	1.3" x 0.9"	0.92" x 0.75"

## FOM Performance Comparison



Device	Qgs	Qgd	Qg
PANJIT	10.1 nC	9.3 nC	62.0 nC
Competitor A	13.7 nC	7.3 nC	74.5 nC
Competitor B	13.7 nC	9.5 nC	72.7 nC

## System Evaluation (210Watt DC-DC converter : 48Vin\_14Vout\_250kHz)



## Products

Voltage (V)	SL/LL	Product Families					
		TO-LL	TO-263	DFN5060-8L	DFN5060S-8L	DFN3333S-8L	TO-220AB-L
100	SL	PSMN015N10NS2 (1.5 mΩ)	PSMB033N10NS2 (3.3 mΩ)	PSMQC040N10NS2 (4.4 mΩ)	PSMQF026N10NS2 (2.6 mΩ)	PSMQE085N10NS2 (8.5 mΩ)	PSMP033N10NS2 (3.3 mΩ)
		PSMN027N10NS2 (2.7 mΩ)	PSMB042N10NS2 (4.2 mΩ)	PSMQC072N10NS2 (7.2 mΩ)	PSMQF039N10NS2 (3.9 mΩ)	PSMQE092N10NS2 (9.2 mΩ)	PSMP042N10NS2 (4.2 mΩ)
			PSMB050N10NS2 (5.0 mΩ)	PSMQC089N10NS2 (8.9 mΩ)			PSMP050N10NS2 (5.0 mΩ)
				PSMQC120N10NS2 (12.0 mΩ)			PSMP093N10NS2 (9.3 mΩ)
				PSMQC230N10NS2 (23.0 mΩ)			
	LL	DFN5060-8L	DFN5060S-8L	DFN3333-8L	DFN3333S-8L	TO-252AA	
		PSMQC038N10LS2 (3.8 mΩ)	PSMQF025N10LS2 (2.5 mΩ)	PSMQB230N10LS2 (23.0 mΩ)	PSMQE080N10LS2 (8.0 mΩ)	PSMD081N10LS2 (8.1 mΩ)	
		PSMQC055N10LS2 (5.5 mΩ)	PSMQF034N10LS2 (3.4 mΩ)		PSMQE086N10LS2 (8.6 mΩ)	PSMD093N10LS2 (9.3 mΩ)	
		PSMQC078N10LS2 (7.8 mΩ)				PSMD130N10LS2 (13.0 mΩ)	
		PSMQC090N10LS2 (9.0 mΩ)				PSMD240N10LS2 (24.0 mΩ)	
		PSMQC108N10LS2 (10.8 mΩ)				PSMD081N10LS2 (8.1 mΩ)	
		PSMQC120N10LS2 (12.0 mΩ)					
		PSMQC240N10LS2 (24.0 mΩ)					