

Power Supply Unit (PSU)

Super Junction MOSFETs Perform High Power System Efficiency and Outstanding Product Reliability



Power Supply Unit (PSU) is the power conversion system widely applied for commercial and industrial systems, such as AC-DC or DC-DC converter. With the features of enabling to provide easy and efficient design solution, PANJIT's first generation Super Junction (SJ) MOSFETs can be a better solution for such PSU systems and also for various topologies of DC-DC converter and Power Factor Correction (PFC) circuits. Moreover, one of the key features of PANJIT SJ MOSFETs is its excellent di/dt ruggedness of the body diode and optimized switching performance for achieving great EMI performance. Along with the outstanding performance, engineers or R&D developers can embrace advantages of a longer lifetime and easy-design for their systems with PANJIT SJ MOSFETs.

Features

- Robustness of Body Diode
- Low FOM
- High Efficiency
- High Quality
- Good EMI Performance

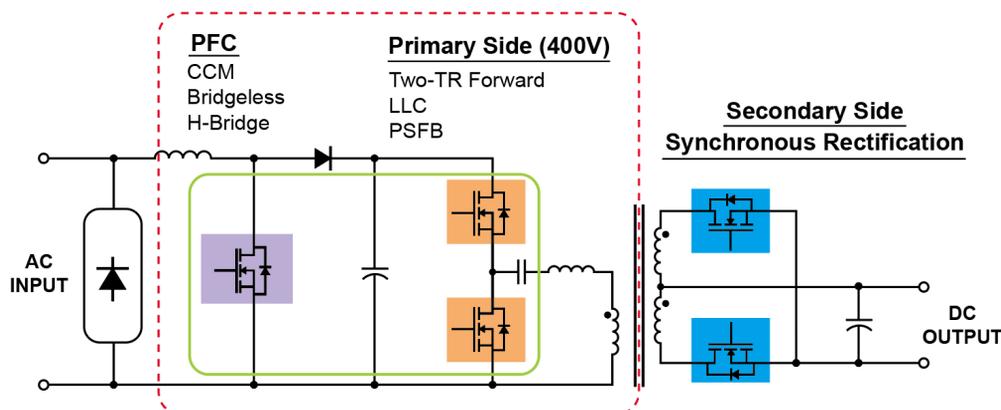
Target Application

- Telecommunications
- Server Data Centers
- PC Power Supplier
- Home Appliance
- Gaming Adapters
- PD Charger

Super Junction MOSFETs for PSU Block Circuit

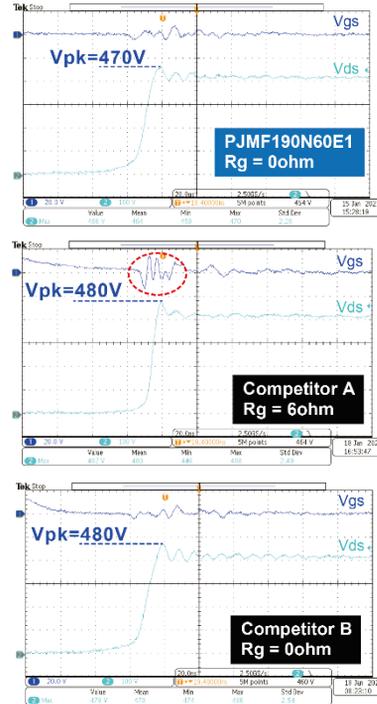
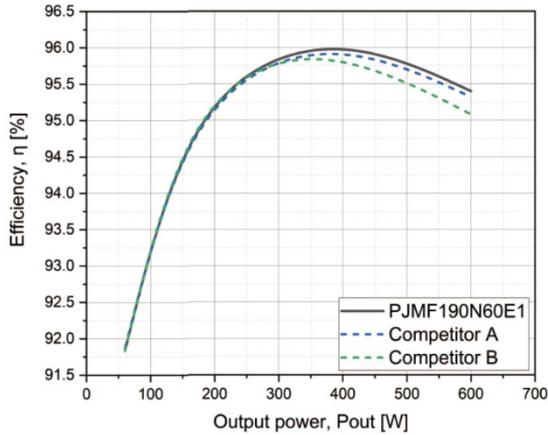
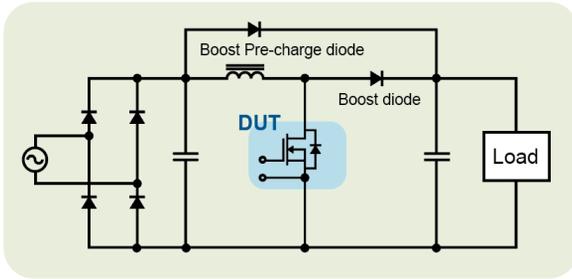
- PFC circuit for AC/DC converter
- Primary side switching for DC/DC converter

PSU Block Diagram



System Evaluation

(600W CCM PFC, $V_{in} = 110V_{ac}/60Hz$, $V_{out} = 400V$, $F_{sw} = 65kHz$ with voltage spike $< (BV * 80\%)$)



Robustness Capability of Body diode maximum di/dt

Body diode di/dt test @ $I_F = 10A$

	500A/us	600A/us	700A/us	800A/us	900A/us	1000A/us
PJMF190N60E1	PASS	PASS	PASS	PASS	PASS	PASS
Competitor A	PASS	Fail	-	-	-	-
Competitor B	PASS	PASS	PASS	PASS	PASS	PASS

Super Junction MOSFET Devices Line-Up

Series	BV	Rdson					
	(V)	(mohm)	TO-247	ITO-220AB-F	TO-220AB-L	TO-252AA	TO-263
SJ MOSFET 600V	600	70	PJMH074N60FRC				
		99	PJMH099N60EC				
		120	PJMH120N60EC	PJMF120N60EC	PJMP120N60EC		
		190	PJMH190N60E1	PJMF190N60E1	PJMP190N60E1		
		280		PJMF280N60E1	-		
		360		PJMF360N60EC	PJMP360N60EC	PJMD360N60EC	
		580		PJMF580N60E1	-	PJMD580N60E1	
900		PJMF900N60EC	PJMP900N60EC	PJMD900N60EC			
SJ MOSFET 650V	650	130		PJMF130N65EC	PJMP130N65EC		PJMB130N65EC
		210		PJMF210N65EC	PJMP210N65EC		PJMB210N65EC
		280		PJMF280N65E1	PJMP310N65EC		PJMB310N65EC
		390		PJMF390N65EC	PJMP390N65EC	PJMD390N65EC	PJMB390N65EC
		640		PJMF600N65E1	PJMP640N65EC	PJMD600N65E1	
990		PJMF990N65EC	PJMP990N65EC	PJMD990N65EC			