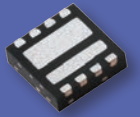




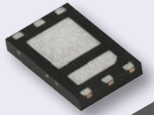
PowerPAIR® MOSFETs

Provides Best Efficiency
in the Industry in
Compatible 3 x 3 Footprints



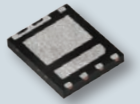
PowerPAIR® 3 x 3

26 % Smaller With
Comparable Performance
to a 6 mm x 5 mm Device



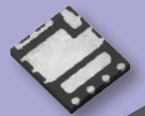
PowerPAIR® 6 x 3.7

Achieves **High Efficiency**
in High Current, Multi-Phase
Synchronous Buck



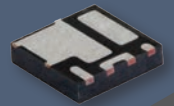
PowerPAIR® 6 x 5

Highest Efficiency
for 6 x 5 Footprint



PowerPAIR® 6 x 5F

Highest Efficiency
for 3 x 3 Footprint



PowerPAIR® 3 x 3F



PowerPAIR® MOSFETs

Focus Products

Asymmetric Dual N-Channel MOSFETs - PowerPAIR®																	
Package	Form Factor	Part Number	Ch	V _{DS} (V)	V _{GS} (V)	R _{DS(on)} (Ω) Max.		Q _g (nC) Typ.		Q _{gs} Typ. (nC)	Q _{gd} Typ. (nC)	I _D (A)		R _g Typ. (Ω)	FOM at 4.5 V Typ.		
						V _{GS} = 10 V	V _{GS} = 4.5 V	V _{GS} = 10 V	V _{GS} = 4.5 V			T _A = 25 °C	T _A = 70 °C				
	3 x 3	SiZ340DT	1	30	20	0.0095	0.0137	12.3	5.6	2.3	1	15.6	12.4	1.7	62		
			2	30	20	0.0051	0.007	22.6	10.1	4.2	1.8	22.6	18.1	1.3	59		
		SiZ342DT	1	30	20	0.0111	0.0138	10	4.5	2.1	0.7	15.6	12.4	1.4	50		
			2														
Increases power density and provides superior performance at high switching frequencies																	
	3.3 x 3.3	SiZ200DT	1	30	20	0.0055	0.0073	18.3	8.4	3.7	1	61	49	1.4	48		
			2	30	20	0.0058	0.0077	20	9.2	4.5	1	60	48	1	55		
		Optimized for 50 % duty cycle and motor drive control in a compact form factor															
			6 x 3.7	SiZ710DT	1	20	20	0.0068	0.009	11.5	6.9	2.4	1.7	16.0	15.0	1.3	50
2	20				20	0.0033	0.0043	38	18.2	6.6	4.8	30.0	24.0	0.8	62		
SiZ728DT	1			25	20	0.0077	0.011	17	8.1	3	2.5	16.0	14.2	1	97		
	2			25	20	0.0035	0.0048	42.5	20.5	7.7	6.4	28.8	23.0	0.8	19		
SiZ730DT	1			30	20	0.0093	0.013	15.6	7.7	2.6	3	12.9	10.3	1	137		
	2			30	20	0.0039	0.0053	43	21.2	7	7.4	26.4	21.1	0.8	23		
26 % smaller than 6 mm x 5 mm package without sacrificing performance for high current DC/DC																	
	6 x 5	SiZ926DT	1	25	16 /-12	0.0022	0.00335	27	12.5	5.4	2.1	40	60	1	33		
			2	25	16 /-12	0.0048	0.0079	12.5	5.9	2.5	1.2	40	60	0.5	31		
		SiZ918DT	1	30	20	0.012	0.0145	14	6.8	2.6	1.9	14.3	11.4	2	174		
			2	30	20	0.0037	0.0045	14	6.8	2.6	1.9	26.0	21.0	1.1	16		
		SiZ900DT	1	30	20	0.0072	0.0092	29	13.5	5.8	3.1	19	15.5	2.4	69		
			2	30	20	0.0039	0.0047	73	34	15	7.3	28	22	0.9	18		
		SiZ988DT	1	30	20	0.0075	0.112	14.3	6.9	2.8	1.6	17.5	14	1.6	53		
			2	30	20	0.0041	0.0052	34	15.4	5.8	2.6	27	21.7	1.7	62		
		SiZ902DT	1	30	20	0.012	0.0145	14	6.8	2.6	1.9	14.3	11.4	2	174		
			2	30	20	0.0064	0.0083	43	21	8.1	6.5	16	16	1.5	56		
		SiZ904DT	1	30	20	0.024	0.03	8	3.8	1.4	1.1	9.5	7.6	3.2	720		
			2	30	20	0.0135	0.017	15.4	7.3	2.3	2.2	14.5	11.6	0.8	230		
Meticulously-tuned MOSFET pairing increases efficiency in high current synchronous buck converters																	

Asymmetric Dual N-Channel MOSFETs Plus Integrated Schottky - PowerPAIR®															
Package	Form Factor	Part Number	Ch	V _{DS} (V)	V _{GS} (V)	R _{DS(on)} (Ω) Max.		Q _g (nC) Typ.		Q _{gs} Typ. (nC)	Q _{gd} Typ. (nC)	I _D (A)		R _g Typ. (Ω)	FOM at 4.5 V Typ.
						V _{GS} = 10 V	V _{GS} = 4.5 V	V _{GS} = 10 V	V _{GS} = 4.5 V			T _A = 25 °C	T _A = 70 °C		
	3.3 x 3.3	SiZF300DT	1	30	20 /-16	0.0045	0.007	14.4	6.9	3.1	1.5	75	60	0.7	34
			2	30	16 /-12	0.00184	0.00257	41	19.4	7.1	3.8	141	113	0.62	41
The highest power density with high efficiency in a 65 % smaller footprint than 6 mm x 5 mm packages															
	6 x 3.7	SiZ790DT	1	30	20	0.0093	0.013	15.6	7.7	2.6	3	12.9	10.3	1	137
			2	30	20	0.0047	0.0059	36	17	5.7	5	23.4	18.7	0.9	28
A compact solution that reduces voltage transients and EMI issues for high current synchronous buck converters															
	6 x 5	SiZF914DT	1	25	20 /-16	0.0038	0.0062	14	6.6	3.2	1.2	40	40	1	27
			2	25	16 /-12	0.0009	0.0015	65	31	10.2	6.4	60	60	0.3	29
	6 x 5	SiZF906ADT	1	30	20 /-16	0.0038	0.0053	24.5	11	5.1	1.3	27	21.7	1	44
			2	30	20 /-16	0.00117	0.00158	100	46	17.1	7.2	52	41	0.6	55
	6 x 5	SiZF916DT	1	30	20 /-16	0.004	0.0068	14.6	7	3	1.5	40	40	1	33
			2	30	16 /-12	0.00125	0.00175	62	29.3	10.2	5.2	60	60	0.41	37
	6 x 5	SiZF918DT	1	30	20 /-16	0.004	0.0068	14.6	7	3	1.5	40	40	1	33
			2	30	16 /-12	0.0019	0.0027	37	17.4	6.1	3.5	60	60	0.5	31
Provides the highest overall efficiency, noise immunity, and current handling capability															
	6 x 5	SiZ980DT	1	30	20	0.0067	0.01	12	5.4	3	0.75	18	14.6	1.5	35
			2	30	20	0.0016	0.0022	51	23	12.2	2.2	43	34	1	37
	6 x 5	SiZ998DT	1	30	20	0.0067	0.01	12	5.4	3	0.75	18.8	15	1.5	35
			2	30	20	0.0028	0.0038	29.5	13.2	7.1	1.3	32.8	26.2	1	40
Elevates efficiency for single or multi-phase synchronous buck designs															

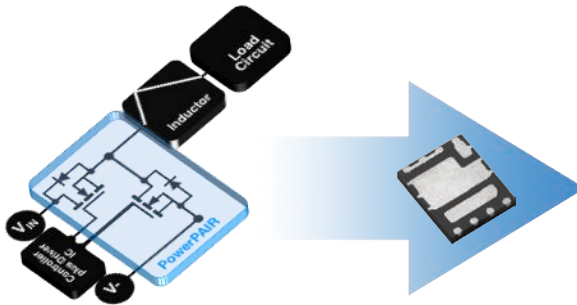


PowerPAIR® MOSFETs

Focus Products

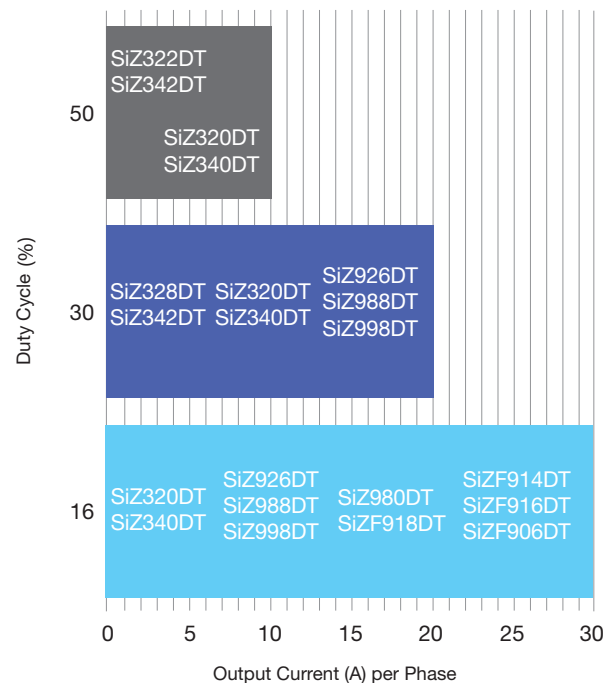
INTEGRATED DUAL-MOSFET POWER STAGE

Input Voltage Range: **4.5 V to 24 V**
Internally Connected Half Bridge



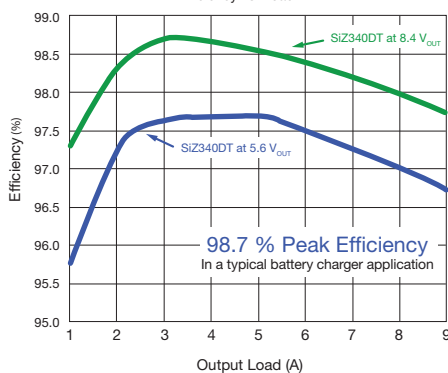
Supports Single or Multi-Phase Designs,
Reduces PCB Footprint Area
for MOSFET Components

Wide Range of Solutions That
Support Popular Output Power and
Duty Cycle Requirements



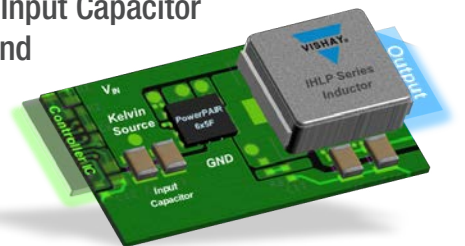
Optimized Gen IV MOSFET Pair Enables High Efficiency

13.3 V_{IN} / 700 kHz / IHLP5050EZ 2.2 μH / Open Loop Thermal Balance
Efficiency vs. Load



PowerPAIR® 6 x 5F for Layout Optimization

Simplifies Placement of Input Capacitor
Separation of “Power” and
“Signal” Partition



APPLICATIONS



COMPUTERS



GRAPHIC
CARDS



GAME
CONSOLES



TELECOM
EQUIPMENT



CONSUMER
ELECTRONICS



DRONES



USER
INTERFACES

Co-Packaged MOSFETs Use Less Space and Increase Performance Over Two Discretes

Advantages of Vishay PowerPAIR® MOSFETs

- Optimized high and low side MOSFET pairing improves efficiency
- Integrated solution reduces component count, saves space, and simplifies layout
- Increased power density for high current synchronous buck converters
- Reduces parasitic inductance from PCB traces, increasing efficiency and reducing ringing

For the Following Applications

- Synchronous buck DC/DC converters
- System power and DDR memories
- Point-of-load (POL)
- Battery charging
- Motor drive controls



Increase power density to use less PCB real estate for the MOSFET power stage



Increase efficiency across the full range of load types to save power and run cooler in synchronous buck converters

- PowerPAIR® MOSFETs Portfolio
www.vishay.com/mosfets/powerpair-package/

Facts

- Vishay's integration level ranges from high performance discrete power MOSFETs to integrated PowerPAIR®, DrMOS, and microBUCK® solutions
- Vishay PowerPAIR® products leverage the latest TrenchFET® technology with low $R_{DS(on)}$, Q_g , and Q_{gd} to increase power density of the DC/DC converters and minimize wasted power

Useful Links



HALOGEN
FREE