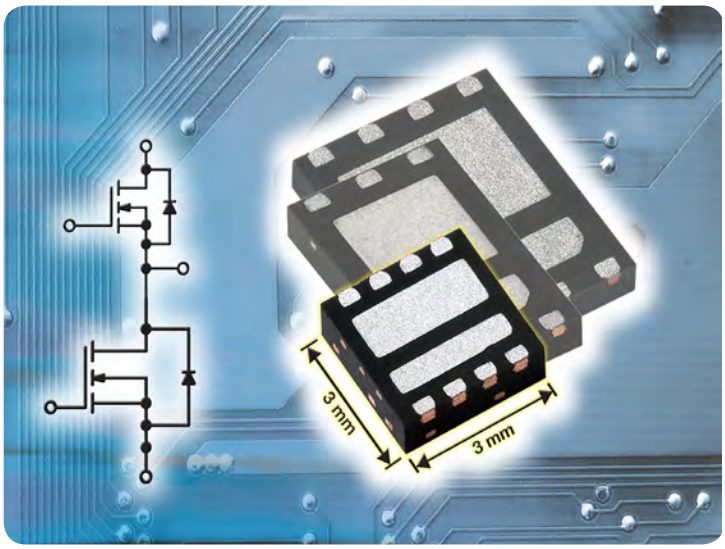
MOSFETs - High- and Low-Side MOSFETs in One Compact Package

Co-Packaged MOSFETs Reduce Space, Increase Performance Over Two Discretes



KEY BENEFITS

- High- and low-side MOSFETs in one compact package
- Three choices of size:
  - 6 mm x 5 mm
  - 6 mm x 3.7 mm
  - 3 mm x 3 mm
- On-resistance down to 1.3 mΩ
- Maximum current up to > 30 A
- Lowers solution space and cost compared to two discrete MOSFETs, saving clearance and labeling space
- Simplifies layout
- Reduces parasitic inductance from PCB traces, increasing efficiency and reducing ringing

APPLICATIONS

- System power, POL, low-current DC/DC, and synchronous buck in notebooks
- VRMs
- Power modules
- Graphics cards
- Servers
- Gaming consoles
- Notebook PCs

RESOURCES

Datasheets: http://www.vishay.com/mosfets/powerpair-6-37-package/
http://www.vishay.com/mosfets/powerpair-6-5-package/
http://www.vishay.com/mosfets/powerpair-3x3-package/

Technical Support: pmostechsupport@vishay.com

More featured products: http://www.vishay.com/landingpage/tradeshows/powermanagement/2011/mosfets.html

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components

POWER MOSFETs

PowerPAIR®

MOSFETs - High- and Low-Side MOSFETs in One Compact Package

PowerPAIR® COMPARISON

PowerPAIR® COMPARISON							
	PowerPAIR 3 X 3	PowerPAK® 1212-8 DUAL	PowerPAIR® 6 X 3.7	2 PowerPAK 1212-8 SINGLES	PowerPAK SO-8 DUAL	PowerPAIR 6 X 5	2 PowerPAK SO-8 SINGLES
Approximate size (mm^2)	9	11	22	22 + spacing	30	30	60 + spacing
Approximate lowest max on-resistance (mΩ)	11	20	3.9	3.3	< 5.6	3.0	1.8
Approximate highest max current (A) T_A = 25 °C	15	8.8	26.4	24.9	20	32	40
Approximate highest max current (A) T_A = 70 °C	12	7	21.1	20	16**	26	32
Reference	SiZ300DT	Si7228DN	SiZ730DT	SiS444DN	Si7994DP	SiZ910DT	SiR158DP

* Target Specification
** T_A = 85 °C

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)		Rg Typ. (Ω)	FOM @ 4.5V Typ.	Samples
						V_{GS} = 10 V	V_{GS} = 4.5 V	V_{GS} = 10 V	V_{GS} = 4.5 V			T_A = 25C	T_A = 70C			
Asymmetric Dual N																
PowerPAIR	3 x 3	SiZ340DT*	1	30	20	0.00900	0.01300		4.8	1.8	0.9	tbd		2.3	49.5	Q1
			2	30	20	0.00470	0.00690		9.7	3.7	1.7			2.2	53.4	
		SiZ300DT	1	30	20	0.02400	0.03200	7.4	3.5	1.5	1.1	9.8	7.8	2.6	92.8	Available
			2	30	20	0.01100	0.01650	14.2	6.8	2.2	2.3	14.9	11.9	2.6	91.8	
	6 x 3.7	SiZ710DT	1	20	20	0.00680	0.00900	11.5	6.9	2.4	1.7	16.0	15.0	1.3	49.7	Available
			2	20	20	0.00330	0.00430	38	18.2	6.6	4.8	30.0	24.0	0.8	61.9	
		SiZ728DT	1	25	20	0.00770	0.01100	17	8.1	3	2.5	16.0	14.2	1	71.3	Available
			2	25	20	0.00350	0.00480	42.5	20.5	7.7	6.4	28.8	23.0	0.8	80.0	
		SiZ730DT	1	30	20	0.00930	0.01300	15.6	7.7	2.6	3	12.9	10.3	1	80.9	Available
			2	30	20	0.00390	0.00530	43	21.2	7	7.4	26.4	21.1	0.8	91.2	
	6 x 5	SiZ912DT*	1	25	20	0.00500	0.00800		7.5	2.8	1.4	tbd		1.5	48.0	Q1
			2	25	20	0.00130	0.00175		38.0	13.0	6.0			0.9	53.2	
		SiZ916DT*	1	30	20	0.00600	0.00900		7.6	2.9	1.4	tbd		1.5	54.7	Q1
			2	30	20	0.00130	0.00175		48.0	18.4	8.5			0.9	67.2	
		SiZ910DT	1	30	20	0.00580	0.00750	26	12.5	1.5	1.1	22.0	17.0	2.6	75.0	Available
			2	30	20	0.00300	0.00350	60	29	2.2	2.3	32.0	26.0	2.6	84.1	
		SiZ920DT*	1	30	20	0.00760	0.00960		9.1	3.0	2.7	21.0	16.0	1.0	72.8	Q1
			2	30	20	0.00300	0.00350	60.0	29.0	10.0	9.5	32.0	26.0	0.6	84.6	
		SIZ918DT	1	30	20	0.01200	0.01450	14.0	8.0	6.0	1.9	14.3	11.4	2.0	96.0	Available
			2	30	20	0.00370	0.00450	67.3	32.0	10.8	9.3	26.0	21.0	1.1	112.0	
Asymmetric Dual N Plus Integrated Schottky																
PowerPAIR	6 x 3.7	SiZ790DT	1	30	20	0.00930	0.01300	15.6	7.7	2.6	3	12.9	10.3	1	80.9	Available
			2	30	20	0.00470	0.00590	36	17	5.7	5	23.4	18.7	0.9	81.6	
	6 x 5	SiZ914DT*	1	30	20	0.00600	0.00900		7.6	2.9	1.4	tbd		1.5	54.7	Q1
			2	30	20	0.00137	0.00189		43.2	16.6	7.7			0.9	65.3	

* Target Specification