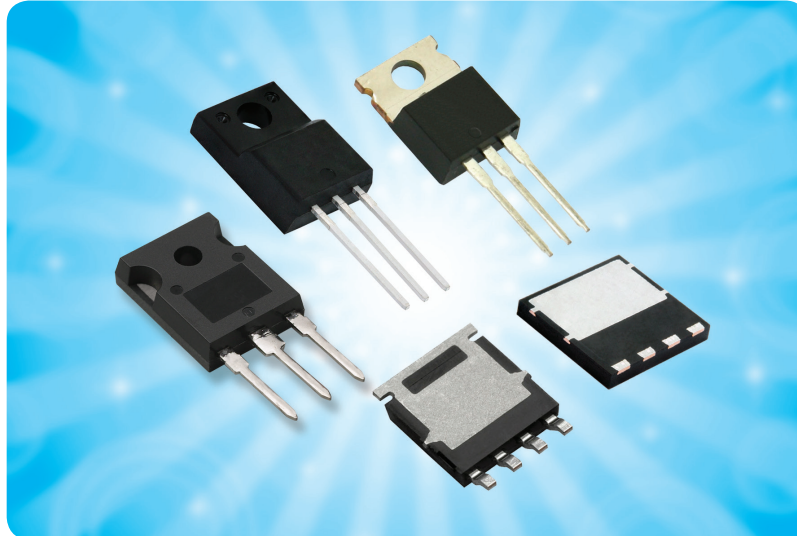


POWER MOSFETs

E and EF Series High-Voltage

500 V, 600 V, and 650 V High-Performance Superjunction MOSFETs



KEY BENEFITS

- Optimal design
 - Low on-resistance ($R_{DS(on)}$)
 - Reduced switching losses
 - Ultra-low gate charge (Q_g)
 - Simple gate drive circuitry
- 600 V EF Fast Body Diode
 - Increased robustness
 - Designed for soft switching topologies

APPLICATIONS

- Server and telecom power supplies
- Lighting
- Industrial
- Renewable energy
- Switch Mode Power Supplies
- Computing and consumer

APPLICATION NOTES:

- [How 2 Turn on a MOSFET](#)
- [Power MOSFET Basics: Understanding Superjunction Technology](#)
- [How to Select the Right MOSFET for Power Factor Correction Applications](#)
- [Zero-Voltage Switching Full-Bridge Converter: Operation, FOM, and Guidelines for MOSFET Selection](#)
- [Two-Switch Forward Converter: Operation, FOM, and MOSFET Selection Guide](#)

RESOURCES

- E Series products: www.vishay.com/mosfets/e-series-high-voltage-standard/
- EF Series products: www.vishay.com/mosfets/ef-series-high-voltage/
- For technical questions, contact: hvm@vishay.com





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E and EF Series High-Voltage

V _{(BR)DSS}	PRODUCT	I _D (A)	R _{DS(on)}	Q _g	PACKAGES								
			V _{GS} = 10 V		TO-247	THIN-LEAD TO-220 FULLPAK	TO-220 FULLPAK	TO-220	D ² PAK (TO-263)	DPAK (TO-252)	IPAK (TO-251)	POWERPAK® 8X8	POWERPAK® SO-8L
			(Max) (Ω)	(Typ) (nC)									
(V)	x =				G	A	F	P	B	D	U	H	J
500 V	SiHx12N50E	11	0.380	25		x		x	x	x			
	SiHx15x50E	15	0.280	33		x		x	x				
	SiHx20x50E	19	0.184	46	x	x		x	x				
	SiHx25N50E	26	0.145	57	x	x		x	x				
600 V	SiHx7N60E	7	0.600	20				x	x		x		
	SiHx8N60E	8	0.520	22									x
	SiHx11N60E	11	0.364	26								x	
	SiHx12N60E	12	0.380	29		x		x	x				
	SiHx14N60E	13	0.309	32	x	x		x		x			
	SiHx14N60E	16	0.225	41								x	
	SiHx15N60E	15	0.280	39	x	x		x	x				
	SiHx18N60E	18	0.202	46		x		x	x				
	SiHx21N60E	20	0.176	55								x	
	SiHx22N60E	21	0.180	57	x	x		x	x				
	SiHx22N60EL	21	0.197	37	x	x		x	x				
	SiHx23N60E	23	0.158	63	x			x	x				
	SiHx26N60E	25	0.117	77								x	
	SiHx30N60E	29	0.125	85	x			x	x				
	SiHx33N60E	33	0.099	100	x				x	x			
	SiHx40N60E	40	0.075	131	x								
SiHx47N60E	47	0.064	147	x									
SiHx73N60E	73	0.039	241	x									
650 V	SiHx6N65E	5.6	0.868	16									x
	SiHx6N65E	7	0.600	24		x	x	x	x	x	x		
	SiHx7N65E	7.9	0.598	22									x
	SiHx11N65E	12	0.363	34								x	
	SiHx12N65E	12	0.380	35									
	SiHx14N65E	15	0.260	48								x	
	SiHx15N65E	15	0.280	48				x	x	x			
	SiHx21N65E	20	0.170	66								x	
	SiHx22N65E	22	0.180	73	x			x	x	x			
	SiHx24N65E	23	0.150	77								x	
	SiHx24N65E	24	0.145	81	x				x	x			
	SiHx28N65E	28	0.122	93	x				x				
	SiHx33N65E	32	0.105	115	x								
	SiHx47N65E	47	0.072	182	x								
SiHx64N65E	64	0.047	239	x									



POWER MOSFETs

E and EF Series High-Voltage

	$V_{(BR)DSS}$	I_D	$R_{DS(on)}$	Q_g	PACKAGES												
	(V)				PRODUCT	(A)	$V_{GS} = 10\text{ V}$		TO-247	THIN-LEAD TO-220 FULLPAK	TO-220 FULLPAK	TO-220	D ² PAK (TO-263)	DPAK (TO-252)	IPAK (TO-251)	POWERPAK® 8X8	POWERPAK® SO-8L
							(Max) (Ω)	(Typ) (nC)									
x =					G	A	F	P	B	D	U	H	J				
EF Series	600 V	SiHx11N60EF	11	0.357	31									x			
		SiHx14N60EF	15	0.266	42									x			
		SiHx21N60EF	21	0.176	56	x	x		x	x				x			
		SiHx26N60EF	24	0.141	80									x			
		SiHx28N60EF	28	0.123	80	x		x	x	x							
		SiHx33N60EF	33	0.098	103	x			x	x							
		SiHx47N60EF	47	0.065	152	x											
		SiHx70N60EF	70	0.038	253	x											
	650 V	SiHx11N65EF	11	0.382	35									x			
		SiHx14N65EF	15	0.271	49									x			
		SiHx21N65EF	21	0.180	71	x	x	x	x	x				x			
		SiHx24N65EF	24	0.156	81	x	x			x				x			
		SiHx28N65EF	28	0.117	97	x			x								
		SiHx33N65EF	32	0.109	114	x											
SiHx44N65EF		46	0.073	185	x												
SiHx61N65EF		64	0.047	247	x												