DIODES
INCORPORATED

MOSFETs

diodes.com

DIODES INCORPORATED'S PRODUCTS ARE DESIGNED FOR HIGH PERFORMANCE, ACROSS A WIDE RANGE OF EXISTING AND EMERGING APPLICATIONS

COMPANY OVERVIEW

Diodes Incorporated is a leading global provider of Discrete, Analog, and Logic semiconductors.

Its global footprint includes sales offices in 5 countries and manufacturing locations in China, Europe and the USA.

A focus on product innovation, cost reduction, acquisitions and customer service has made Diodes Incorporated an industry leader.

Combining leading silicon and packaging technologies, Diodes provides a broad portfolio of discrete semiconductors comprising Bipolar Transistors, MOSFETs, Schottky diodes, SBR®, switching diodes and functional specific arrays to enable our customers' next generation designs.

The Diodes' Analog IC portfolio consists of 6 main areas: Power Management ICs, Standard Linear, Lighting, Sensors, Direct Broadcast by Satellite and Applications Specific Standard Products. Diodes IC portfolio also includes Standard Logic products.

DIODES MEANS MOSFET BUSINESS

A focus on cost reduction, product innovation and customer service has resulted in Diodes Incorporated's MOSFET portfolio substantially out performing the market. Clearly, DIODES INCORPORATED means MOSFET business.

Embracing both industry standard and differentiated products such as the DMN2300UFB4 - probably the smallest, most powerful packaged MOSFET - , the Diodes MOSFET portfolio encompasses N channel, P channel, and complementary devices with breakdown voltages from -450V to 450V.

These are packaged in single, dual, complementary, and H-bridge configurations in a wide range of package options, from the tiniest DFN1006 package, to large surface mount packages such as DPak (TO252-3L).

The breadth of the Diodes Incorporated MOSFET portfolio enables designers to select a device optimised for their end application, thus enabling next generation consumer, computer and communication product designs.

The Diodes portfolio is ideally suited to meeting the circuit requirements of:

- DC-DC conversion
- Load switching
- Motor control
- Backlighting
- Battery protection
- Battery chargers
- Audio circuits
- Automotive applications

The majority of products in the Diodes MOSFET product portfolio are designed to meet the stringent requirements of AECQ101 reliability standard of the Automotive Electronic Council.

Products with a 'Q' suffix indicate that the product is Automotive grade – the device has passed the rigorous AECQ101 standard and is fully supported for Automotive customers with PPAP (Production Part Approval Process), and TS16949 approved manufacturing sites. Furthermore, all in house packaging utilises environmentally 'green' mold compound.

Diodes Incorporated's MOSFET product development strategy is focused on high growth market segments such as LED Lighting; Notebook PC's, Netbooks and Voice Over Internet applications (VoIP).

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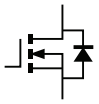
20V N-channel



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=10V	Q_g typ. (nC) @ V_{GS}=4.5V	Package
					@T_A=25°C	@T_A=25°C	4.5V	2.5V	1.8V			
DMN2009LSS	Single	N	20	±12	12	2	9	12	-	2555	58.3	SO-8
DMN2016UTS	Dual	Y	20	±8	7	0.88	14	16	TBD	1495	16.5	TSSOP-8
DMG5802LFX	Dual	Y	24	±12	6.5	0.98	15	20	-	1066.4	14.5	DFN5020-6
DMG6898LSD	Dual	-	20	±12	9.5	1.28	16	-	24	1149	11.6	SO-8
DMN2016LFG	Dual	N	20	±12	6	0.99	17	24	39	TBD	TBD	DFN3030-8
DMN2020LSN	Single	Y	20	±12	6.9	0.6	20	28	-	1149	11.6	SC59
DMN2027USS	Single	N	20	±12	5.6	0.9	20	28	-	1149	11.6	SO-8
DMN2028USS	Single	Y	20	±12	9.8	2.8	20	28	-	1000	11.6	SO-8
DMG8601UFG	Dual	Y	20	±8	6.1	0.92	23	27	34	143	8.8	DFN3030-8
DMG6968UTS	Dual	Y	20	±8	5.2	1	23	27	34	143	8.8	TSSOP-8
DMG6968LSD	Dual	Y	20	±12	9.4	0.85	24	28	34	142	8.8	SO-8
DMG6968UDM	Dual	Y	20	±8	6.5	0.85	24	28	34	142	8.8	SOT23-6
DMG9926USD	Dual	N	20	±8	8.2	1.3	24	29	37	867	8.8	SO-8
DMG6968U	Single	Y	20	±8	6.5	0.81	25	29	36	151	8.5	SOT23
DMG3414U	Single	N	20	±8	4.2	0.78	25	29	37	830	9.6	SOT23
DMG8822UTS	Dual	N	20	±8	4.9	0.87	25	29	37	841	9.6	TSSOP-8
DMN2040LTS	Dual	N	20	±12	6.7	0.89	26	36	-	570	5.2	TSSOP-8
DMG9926UDM	Dual	N	20	±8	4.2	0.98	28	32	40	856	8.3	SOT23-6
DMN2041L	Single	N	20	±12	6.4	0.78	28	41	-	550	7.2	SOT23
DMN2041LSD	Dual	N	20	±12	3	1.4	28	41	-	550	7.3	SO-8
DMN2050L	Single	N	20	±12	5.9	1.4	29	50	-	532	6.7	SOT23
DMG3420U	Single	Y	20	±12	2.8	0.6	35	48	91	434	5.4	SOT23
DMN2075U	Single	N	20	±8	4.2	0.8	38	45	-	594	7	SOT23
DMN2075UDM	Single	N	20	±8	2.8	0.9	38	45	-	594	7	SOT23-6
DMN2075UTS	Single	N	20	±8	2.8	0.87	38	45	-	594	7	TSSOP-8
DMN2075UW	Single	N	20	±8	2.8	0.29	38	45	-	594	7	SOT323
ZXM64N02X	Single	N	20	±12	5.4	1.1	40	50	-	1100	16	MSOP8
ZXMN2B03E6	Single	N	20	±8	5.4	1.1	40	55	75	1160	14.5	SOT23-6
ZXMN2F30FH	Single	N	20	±12	4.9	1.4	45	65	-	452	4.8	SOT23
DMN2100UDM	Single	Y	20	±8	3.3	0.9	55	70	90	555	-	SOT23-6
ZXMN2B14FH	Single	N	20	±8	4.3	1	55	75	100	872	11	SOT23
ZXMN2A03E6	Single	N	20	±12	4.6	1.7	55	100	-	837	8.2	SOT23-6
ZXMN2A14F	Single	N	20	±12	4.1	1	60	110	-	544	6.6	SOT23
ZXMN2F34MA	Single	N	20	±12	5.1	22	60	120	-	277	2.8	DFN322
ZXMN2F34FHTA	Single	N	20	±13	-	-	60	120	-	277	2.8	SOT23
DMG2302U	Single	N	20	±8	2.8	0.8	90	120	-	594	7	SOT23
ZXM62N02E6	Single	N	20	±12	3.2	1.1	100	125	-	460	6.3	SOT23-6
DMN2215UDM	Dual	N	20	±12	2	0.65	100	140	215	188	-	SOT23-6
DMN2112SN	Single	Y	20	±8	1.2	0.5	100	140	250@1.5V	220	-	SC59
ZXMN2B01F	Single	N	20	±8	2.4	0.625	100	150	200	370	4.8	SOT23
DMN2114SN	Single	Y	20	±12	1.2	0.5	100	160	-	180	-	SC59
DMN2230U	Single	N	20	±12	2	0.6	110	145	230	188	-	SOT23
ZXMN2A01E6	Single	N	20	±12	3.1	1.7	120	225	-	303	3	SOT23-6
ZXMN2A01F	Single	N	20	±12	2.2	0.806	120	225	-	303	3	SOT23
ZXMN2AMC	Dual	N	20	±12	3.7	2.45	120	300	-	299	3.1	DFN3020-8
ZXMD63N02X	Dual	N	20	±12	2.4	1.25	130	150	-	350	6	MSOP8
DMN2300UFB	Single	Y	20	±8	1.3	0.47	175	240	360	67.6	0.89	DFN1006H4-3
DMN2300UFB4	Single	Y	20	±8	1.3	0.47	175	240	360	67.6	0.89	DFN1006H4-3
DMN2300UFD	Single	Y	20	±8	1.7	0.8	175	240	360	67.6	0.89	DFN1212-3
DMN2300U	Single	Y	20	±8	1.4	0.62	175	240	360	67.6	0.89	SOT23
ZXM61N02F	Single	N	20	±12	1.7	0.625	180	240	-	160	-	SOT23
ZXMN2088E6	Dual	N	20	±12	2.1	1.1	200	240	310	279	3.8	SOT23-6
DMG1012T	Single	Y	20	±6	0.63	0.28	400	500	700	61	736.6	SOT523

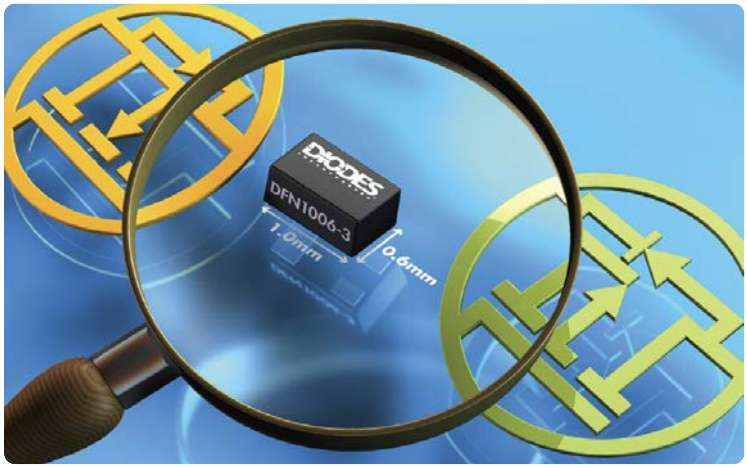
THE **DIODES** ADVANTAGE

Probably the smallest most powerful MOSFET in the world….

Did you know? Diodes Incorporated has unveiled a portfolio of high performance MOSFETs packaged in the ultra-miniature DFN1006-3 package. Occupying just 0.6mm² of PCB area and with an off-board profile of 0.4mm, these MOSFETs are designed to solve space constrained circuit layouts and are ideal for use in tablet PCs, smart phones, MP3 players, bluetooth headsets, hearing aids and thin profile LED TVs.

The DFN1006-3 package takes less than half the board space of the equivalent SOT723 packaged parts and with a junction to ambient thermal resistance (R_{thj-a}) of 256°C/W, supports up to 1.3A under continuous conditions, providing a cooler running solution than SOT723, SOT523 and SOT323 alternatives.

The portfolio comprises both N-channel and P-channel devices with breakdown voltage (V_{DS}) rated at 20V, 30V and 60V for use in a variety of high reliability load switching, signal switching or boost conversion circuit functions. The 20V rated DMN2300UFB4 features typical $R_{DS(ON)}$ performance of just 150mΩ, making it probably the smallest most powerful packaged MOSFET available.



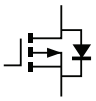
Product benefits

- **Small footprint**
  The DFN1006-3 package occupies just 0.6mm² of PCB area, approximately half that of SOT723 alternatives.
- **Low profile**
  The DFN1006-3 has an off board height of 0.4mm (UFB4) or 0.5mm (UFB) making it ideal for thin profile consumer electronic products.
- **Thermally efficient package**
  Low junction to ambient thermal resistance (R_{thj-a}) enables DFN1006-3 to support up to 1.3A under continuous conditions.
- **Low $R_{DS(ON)}$**
  The DMN2300UFB4 & DMP21D0UFB4 feature class leading low $R_{DS(ON)}$ at 4.5V V_{GS} of 175mΩ and 495mΩ respectively.

20V N-channel (continued)

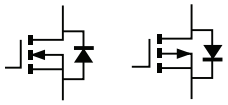
Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=10V	Q_g typ. (nC) @ V_{GS}=4.5V	Package
					@T_A=25°C	@T_A=25°C	4.5V	2.5V	1.8V			
DMG1012UW	Single	Y	20	±6	1	-	450	600	750	61	0.74	SOT323
DMG1012T	Single	Y	20	±6	0.6	-	450	600	750	61	0.74	SOT523
DMN2400UV	Dual	Y	20	±12	1.33	0.53	500	700	TBD	36	0.5	SOT563
DMN2004DMK	Dual	Y	20	±8	0.54	0.225	550	700	900	150	-	SOT26
DMN2004DWK	Dual	Y	20	±8	0.54	0.2	550	700	900	150	-	SOT363
DMN2004K	Single	Y	20	±8	0.54	0.35	550	700	900	150	-	SOT23
DMN2004TK	Single	Y	20	±8	0.54	-	550	700	900	150 (max)	-	SOT523
DMN2004VK	Dual	Y	20	±8	0.54	-	550	700	900	150 (max)	-	SOT563
DMN2004WK	Single	Y	20	±8	0.54	0.2	550	700	900	150	-	SOT323
DMN2400UFB4	Single	Y	20	±12	0.75	0.47	550	750	-	36	-	DFN1006H4-3
DMN2400UFB	Single	Y	20	±12	0.75	0.47	550	750	900	36	0.5	DFN1006-3
DMN2990UDJ	Single	Y	20	±8	0.45	0.35	990	1200	1800	27.6	0.5	SOT963
DMN2005K	Single	Y	20	±10	0.3	0.35	1500	1700	3500	39	-	SOT23
DMN2005DLP4K	Dual	Y	20	±10	0.2	0.35	1500	1700	3500	39	-	DFN1310H4-6
DMN2005LP4K	Single	Y	20	±10	0.2	0.2	1500	1700	3500	39	-	DFN1006H4-3
DMN26D0UDJ	Dual	-	20	±10	0.23	0.3	3000	4000	6000	14.1	-	SOT963
DMN26D0UFB4	Single	-	20	±10	0.23	0.35	3000	4000	6000	14.1	-	DFN1006H4-3
DMN26D0UT	Single	Y	20	±10	0.23	0.3	3000	4000	6000	14.1	-	SOT523
DMN2005LPK	Single	Y	20	±10	0.44	0.45	1500	1700	3500	39	-	DFN1006-3

20V P-channel



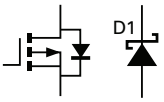
Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=				C_{iss} typ. (pF) @ V_{GS}=-10V	Q_g typ. (nC) @ V_{GS}=4.5V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V	1.8V			
DMP2022LSS	Single	N	-20	±12	-10	2.5	13	16	22	-	2444	56.9	SO-8
ZXM66P02N8	Single	N	-20	±12	-8	1.56	-	25	45	-	2068	43.3	SO-8
DMP2035U	Single	Y	-20	±8	-4	0.85	-	35	45	62	1610	15.4	SOT23
DMP2035UTS	Dual	N	-20	±8	6.04	0.89	-	35	45	62	1610	15.4	TSSOP-8
DMG2301U	Single	N	-20	±8	-2.4	0.8	-	39	52	65	608	-	SOT23
DMG3415U	Single	Y	-20	±8	-4	0.9	-	39	52	65	294	9.1	SOT23
DMG3415UFY4	Single	Y	-16	±8	-2.5	-	-	39	52	65	281	10	DFN2015H4-3
DMP2066LDM	Single	N	-20	±12	-4.6	1.25	-	40	66	-	820	10.1	SOT23-6
DMP2066LSD	Dual	N	-20	±12	-5.8	2	-	40	66	-	820	10.1	SO-8
DMP2066LSN	Single	N	-20	±12	-4.6	1.25	-	40	70	-	820	10.1	SC59
DMP2066LSS	Single	N	-20	±12	-6.5	2.5	-	40	70	-	820	10.1	SO-8
DMP2069UFY4	Single	Y	-20	±8	-2.5	0.53	-	54	69	90	214	9.1	DFN2015-3
DMP2305U	Single	N	-20	±8	-4.2	1.4	-	60	90	113	727	7.6	SOT23
DMP2160UFDB	Dual	N	-20	±12	-3.8	1.4	-	70	85	-	632	-	DFN2020B-6
DMP2123L	Single	N	-20	±12	-3	1.4	-	72	123	-	443	7.3	SOT23
DMG9933USD	Dual	N	-20	±12	-4.6	1.15	-	75	110	-	608.4	6.5	SO-8
DMP2160U	Single	N	-20	±12	-3.2	1.4	-	80	100	140	627	-	SOT23
DMP2130L	Single	N	-20	±12	-3	1.4	-	80	110	-	240	7.3	SOT23
DMP2130LDM	Single	N	-20	±12	-3.4	1.25	-	80	130	-	240	7.3	SOT23-6
ZXM64P02X	Single	N	-20	±12	-3.5	1.1	-	90	130	-	900	6.9	MSOP8
DMP2160UW	Single	N	-20	±12	-1.5	0.35	-	100	120	160	627	-	SOT323
DMP2215L	Single	N	-20	±12	-2.7	1.08	-	100	215	-	250	4.3	SOT23
DMP2225L	Single	N	-20	±12	-2.6	1.08	-	110	225	-	250	4.3	SOT23
DMG2301U	Single	N	-20	±8	-2.4	0.8	-	130	190	-	608	-	SOT23
DMP2104LP	Single	N	-20	±12	-1.5	0.5	-	150	200	240	320	-	DFN1411-3
DMP2104V	Single	N	-20	±12	-0.95	0.2	-	150	200	240	320	-	SOT563
DMP2240UDM	Dual	N	-20	±12	-2	0.6	-	150	200	240	320	-	SOT23-6
ZXM62P02E6	Single	N	-20	±12	-2.3	1.1	-	200	275	-	320	5.8	SOT23-6
DMP2240UW	Single	N	-20	±8	-1.5	0.25	-	200	240	300	-	-	SOT323
ZXM62P03E6	Single	N	-20	±12	-1.5	0.625	-	150	200	-	330	10.2	SOT23-6
ZXMD63P02X	Dual	N	-20	±12	-1.7	1.25	-	270	400	-	290	5.25	MSOP8
DMP2012SN	Single	Y	-20	±12	-0.7	0.5	-	400	500	-	180	-	SC59
DMP21D0UFB	Single	Y	-20	±8	-0.77	0.43	-	495	690	900	80	0.91	DFN1006-3
DMP21D0UFB4	Single	Y	-20	±8	-0.77	0.43	-	495	690	900	80	0.91	DFN1006H4-3
DMP21D0UFDB	Single	Y	-20	±8	-0.86	-	-	495	690	900	80	0.91	DFN1212-3
DMP21D0UT	Single	Y	-20	±8	-0.6	0.24	-	495	690	960	80	0.91	SOT523
ZXM61P02F	Single	N	-20	±12	-0.9	0.625	-	600	900	-	150	3.5	SOT23
DMG1013UW	Single	Y	-20	±6	-0.82	0.3	-	750	1050	1500	60	0.62	SOT323
DMG1013T	Single	Y	-20	±6	-0.46	0.27	-	750	1050	1500	60	0.62	SOT523
DMG1023UV	Dual	Y	-20	±6	-1.03	0.53	-	750	1050	1500	59.76	0.622	SOT563
DMP2004DMK	Dual	Y	-20	±8	-0.55	0.5	-	900	1400	2000	175	-	SOT26
DMP2004DWK	Dual	Y	-20	±8	-0.43	0.25	-	900	1400	2000	175	-	SOT363
DMP2004K	Single	Y	-20	±8	-0.6	0.55	-	900	1400	2000	175 (max)	-	SOT23
DMP2004WK	Single	Y	-20	±8	-0.4	0.25	-	900	1400	2000	175 (max)	-	SOT323
DMP2004VK	Dual	Y	-20	±8	-0.53	0.25	-	900	1400	2000	175 (max)	-	SOT563
DMP2004TK	Single	Y	-20	±8	-0.43	0.15	-	1100	1600	2400	175	-	SOT523
DMP22D6UT	Single	Y	-20	±8	-0.43	0.15	-	1100	1600	2600	175 (max)	-	SOT523
DMP21D5UFB4	Single	Y	-20	±8	-0.38	0.35	-	1500	2500	3500	53.7	-	DFN1006H4-3
DMP210DUDJ	Dual	N	-20	±8	0.14	0.33	-	5000	7000	10000	13.72	-	SOT963
DMP210DUFB4	Single	N	-20	±8	-0.2	0.35	-	5500	7500	11500	13.72	-	DFN1006H4-3

20V Complementary



Part Number	Configuration	Type	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=-10V	Q_g typ. (nC) @ V_{GS}=4.5V	Package
						@T_A=25°C	@T_A=25°C	4.5V	2.5V	1.8V			
DMC2020USD	Complementary	N	Y	20	±12	7.4	1.25	20	28	-	1149	11.6	SO-8
		P	Y	-20	±12	-5.9		33	45	-	1610	15.4	
DMC2038LVT	Complementary	N	Y	20	±12	4.5	1.12	35	43	56	400	12	TSOT23-6
		P	Y	-20	±12	-3.2		74	110	168	530	10	
DMC2700UDM	Complementary	N	Y	20	±6	1.3	1.12	400	500	700	61	0.74	SOT23-6
		P	Y	-20	±6	-1.1		700	900	1300	61	0.62	
DMG1016V	Complementary	N	Y	20	±6	0.87	0.53	400	500	700	61	0.74	SOT563
		P	Y	-20	±6	-0.64		700	900	1300	61	0.62	
DMG1016UDW	Complementary	N	Y	20	±6	1.066	0.33	450	600	750	61	0.74	SOT363
		P	Y	-20	±6	-0.87		750	1050	1500	60	0.62	
DMC2004VK	Complementary	N	Y	20	±8	0.67	0.4	550	700	900	150	-	SOT563
		P	Y	-20	±8	-0.53		900	1400	2000	175	-	
DMC2004DWK	Complementary	N	Y	20	±8	0.54	0.25	550	700	900	150	-	SOT563
		P	Y	20	±8	-0.39		900	1400	2000	175	-	
DMC2004LPK	Complementary	N	Y	20	±8	0.75	0.5	550	700	900	150 (max)	0.175	DFN1612-6
		P	Y	-20	±8	-0.6		900	1400	2000	175 (max)	0.15	

MOSFET plus SBR



Part Number	Configuration	Type	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=-10V	Q_g typ. (nC) @ V_{GS}=4.5V	Package
						@T_A=25°C	@T_A=25°C	4.5V	2.5V	1.8V			
DMS2220LFDB	MOSFET plus SBR	P	Y	-20	±12	-2.9	1.4	95	120	150	627	-	DFN2020
DMS2120LFWB	MOSFET plus SBR	P	Y	-20	±12	-3.5	1.5	95	120	150	627	-	DFN3020
DMS2220LFW	MOSFET plus SBR	P	Y	-20	±12	-2.9	1.5	95	120	130	281	632	DFN3020

THE **DIODES** ADVANTAGE

MOSFET plus SBR

Did you know? Diodes Incorporated's proprietary Super Barrier Rectifier (SBR) technology delivers significantly lower forward voltage (V_F) and stability at higher temperature than conventional Schottky diodes.

The DMS2220UFDB co-packages SBR and a P-channel enhancement MOSFET in a small leadless package to deliver a small form factor charging solution.

Product benefits

- **Saves Space**
  With a footprint of just 2mm², the DMS2220UFB occupies 55% less board space than larger 3mm² packaged solutions.
- **Enables thinner applications**
  The DFN2020 has an off board height of 0.5mm enabling the design of lower profile end applications.
- **Reduce component count**
  Combines two discrete devices in one small form factor package reducing PCB footprint.

DIOFET

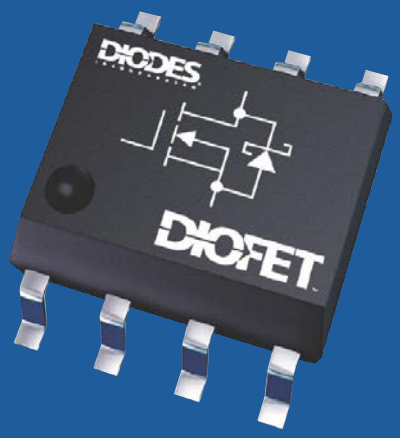
Part Number	Configuration /Polarity	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=		C_{iss} typ. (pF) @ V_{DS}=15V	Q_g typ. (pF) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V			
DMS3014SSS	N + Schottky	N	30	±12	10.4	1.55	13	14	2296	45.7	SO-8
DMS3015SSS	N + Schottky	N	30	±20	11	1.55	11.9	14.9	-	30.6	SO-8
DMS3016SSS	N + Schottky	N	30	±12	9.8	1.54	13	16	1849	43	SO-8
DMS3017SSD	Dual N-Channel + Schottky	N	30	±20	10	1.79	12	15	1276	30.6	SO-8
		N	30	±20	7.2		22	32	478.9	10.5	
DMS3019SSD	Dual N-Channel + Schottky	N	30	±12	9	1.79	15	18	1932	42	SO-8
		N	30	±20	7		23	33	478.9	10.5	

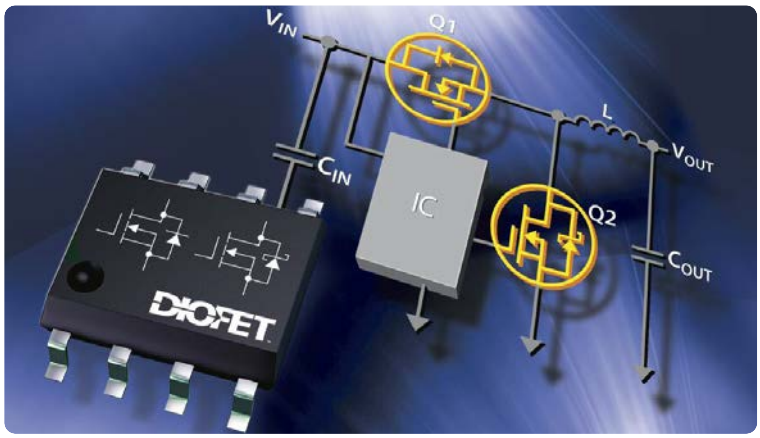
THE **DIODES** ADVANTAGE

DIOFET

Did you know? Diodes Incorporated has designed and patented a proprietary process that integrates a power MOSFET and anti-parallel schottky diode into a single die.

Targeted at the low side synchronous MOSFET position of synchronous point-of-load (PoL) converters, the lower V_{SD} and Q_{rr} of the DIOFET family reduce conduction and switching losses improving the overall efficiency of the PoL converter lowering its operating temperature.

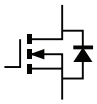




Product benefits

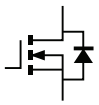
- **Low $R_{DS(ON)}$**
  The low $R_{DS(ON)}$ of the DIOFET minimize the conduction losses traditionally associated with high duty cycle synchronous MOSFETs.
- **Low V_{SD} of the integrated Schottky**
  The monolithically integrated Schottky has a forward voltage (V_{SD}) that is 48% lower than the intrinsic body diode of comparable MOSFETs, reducing the losses due to body diode conduction.
- **Integrated schottky has low Q_{rr}**
  The low Q_{rr} of the integrated schottky reduces body diode switching losses.
- **Low Q_{gd}/Q_{gs} ratio**
  A lower gate capacitance ratio than competing solutions reduces the risk of shoot-through or cross conduction currents at high frequencies.
- **Avalanche rugged**
  These MOSFETS have been designed to withstand the high pulse avalanche energy from that will be induced by the output inductor during switching.

30V N-channel



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=				C_{iss} typ. (pF) @ V_{DS}=15V	Q_g typ. (nC) @ V_{GS}=4.5V	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V	1.8V				
DMN3005LK3	Single	N	30	±20	22	1.68	5	6.5	-	-	4342	46.9	-	TO252-3L
DMN3007LSS	Single	N	30	±20	16	2.5	7	10	-	-	2714	-	64.2	SO-8
DMG8880LK3	Single	N	30	±20	58	TBA	9	12	-	-	1260	-	13	TO252-3L
DMG8880LSS	Single	N	30	±20	58	TBA	9	12	-	-	1260	-	13	SO-8
DMN3010LSS	Single	N	30	±20	16	2.5	9	13	-	-	2096	-	13	SO-8
DMN4468LSS	Single	N	30	±20	8.7	1.52	14	20	-	-	867	-	18.85	SO-8
DMG4468LFG	Single	N	30	±20	8.7	1.52	14	20	-	-	867	-	18.85	DFN3030-8
DMG4468LK3	Single	N	30	±20	8.7	1.52	14	20	-	-	867	-	18.85	TO252-3L
DMN4800LSS	Single	N	30	±25	9	1.46	16	20	-	-	798	8.7	-	SO-8
DMN4800LSSL	Single	N	30	±20	8	1.46	14	20	-	-	798	-	8.7	SO-8
DMG4800LSD	Dual	N	30	±25	8.5	1.17	16	20	-	-	798	8.7	-	SO-8
DMG4800LK3	Single	N	30	±25	10	1.7	16	22	-	-	798	8.7	-	TO252-3L
DMG4800LFG	Single	N	30	±20	10	0.94	17	24	-	-	798	8.7	-	DFN3030-8
DMN3030LSS	Single	N	30	±25	9	2.5	18	30			741	8.6	16.7	SO-8
DMN3031LSS	Single	N	30	±20	9	2.5	18.5	31	-	-	741	7.6	16.7	SO-8
DMG7410SFG	Single	N	30	±20	22	2	20	26	-	-	569	5.3	11.3	PowerDI3333-8
ZXMN3A04DN8	Dual	N	30	±20	8.5	2.8	20	30	-	-	1890	-	36.8	SO-8
DMN3020LK3	Single	N	30	±20	16.7	8.9	20	34	-	-	608	6.3	12.9	TO252-3L
ZXMN3A04K	Single	N	30	±20	18.4	10.1	20	34	-	-	1890	-	36.8	TO252-3L
DMG4496SSS	Single	N	30	±25	10	1.42	21.5	29	-	-	493.5	4.7	10.2	SO-8
DMN3033LSD	Dual	N	30	±20	6.9	2	22	33	-	-	725	-	13	SO-8
DMG4466SSS	Single	N	30	±25	10	1.42	23	33	-	-	478.9	5	10.5	SO-8
DMG4466SSSL	Single	N	30	±20	10	1.42	23	33	-	-	478.9	5	10.5	SO-8
DMN3024LSS	Single	N	30	±20	8.5	2.8	24	36	-	-	608	6.3	12.9	SO-8
DMN3024LSD	Dual	N	30	±20	7.2	2	24	36	-	-	608	6.3	12.9	SO-8
DMN3024LK3	Single	N	30	±20	14.4	8.9	24	39	-	-	608	6.3	12.9	TO252-3L
ZXMN3F318DN8	Dual	N	30	±20	7.3	2.1	24	39	-	-	608	6.3	12.9	SO-8
ZXMN3F31DN8	Dual	N	30	±20	7.3	2.1	24	39	-	-	608	6.3	12.9	SO-8
DMG6402LDM	Single	N	30	±20	5.9	1.1	28	42	-	-	386	-	9.2	SOT23-6
DMN3404L	Single	N	30	±20	4.3	0.78	28	42	-	-	386	-	9.2	SOT23
ZXMN3G32DN8	Dual	N	30	±20	7.1	2.1	28	45	-	-	472	-	10.5	SO-8
DMN3052LSS	Single	N	30	±12	7.1	2.5	30	40	63	-	555	-	-	SO-8
DMN3033LSN	Single	N	30	±20	6	1.4	30	40	-	-	755	-	10.5	SC59
DMN3052L	Single	N	30	±12	5.4	1.4	32	42	64	-	-	-	-	SOT23
DMN3033LDM	Single	N	30	±20	6.9	2	33	40	-	-	755	-	10.5	SOT26
ZXMN3A06DN8	Dual	N	30	±20	6.2	2.1	35	50	-	-	796	-	17.5	SO-8
DMN3051LDM	Single	N	30	±20	4	0.9	38	64	-	-	424	-	-	SOT23-6
ZXMN3F30FH	Single	N	30	±20	4.6	1.4	47	65	-	-	318	-	7.7	SOT23
ZXMN3A03E6	Single	N	30	±20	4.6	1.7	50	65	-	-	600	-	12.6	SOT23-6
DMN3112SSS	Single	N	30	±20	6	2.5	57	112	-	-	268	-	-	SO-8
DMN3112S	Single	N	30	±20	5.8	1.4	57	112	-	-	268	-	-	SOT23
ZXMN3A14F	Single	N	30	±20	3.9	1.5	65	95	-	-	448	-	8.6	SOT23
ZXM62N03G	Single	N	30	±20	4.7	2	110	150	-	-	380	-	9.6	SOT223
ZXMN3A01E6	Single	N	30	±20	3	1.7	120	180	-	-	190	-	3.9	SOT23-6
ZXMN3A01F	Single	N	30	±20	2	0.625	120	180	-	-	190	-	3.9	SOT23
ZXMN3AMC	Dual	N	30	±20	3.7	2.45	120	180	-	-	190	2.3	3.9	DFN3020-8
ZXMD63N03X	Dual	N	30	±20	2.3	1.25	135	200	-	-	290	-	8	MSOP8
DMN100	Single	Y	30	±20	1.1	0.5	170	240	-	-	150	-	5.5	SC59
ZXM61N03F	Single	N	30	±20	1.4	0.625	220	300	-	-	150	-	4.1	SOT23
ZXMN3B04N8	Single	N	30	±12	8.9	3	-	25	40	-	2480	23.1	-	SO-8
DMN3029LFX	Single	Y	30	±12	7.2	TBD	-	26	34	-	TBD	-	TBD	DFN5020-6
DMN3115UDM	Single	Y	30	±8	3.2	0.9	-	60	80	130	476	-	-	SOT23-6
ZXMN3B14F	Single	N	30	±12	3.5	1.5	-	80	140	-	568	6.7	-	SOT23

30V N-channel (continued)



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=				C_{iss} typ. (pF) @ V_{DS}=15V	Q_g typ. (nC) @ V_{GS}=4.5V	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V	1.8V				
DMN3150L	Single	N	30	±12	3.2	1.25	-	85	115	-	305	-	-	SOT23
DMN3150LW	Single	N	30	±12	1.6	0.35	-	88	138	-	305	-	-	SOT323
DMN3200U	Single	N	30	±8	2.2	0.65	-	90	110	200	290	-	-	SOT23
DMN3300U	Single	N	30	±12	2	0.6	-	150	200	250	193	-	-	SOT23
ZXMN3B01F	Single	N	30	±12	2	0.806	-	150	240	-	258	2.93	-	SOT23
DMN2600UFB	Single	Y	25	±8	1.3	0.54	-	350	450	600	70.13	-	-	DFN1006-3
DMN3730UFB	Single	Y	30	±8	0.9	0.69	-	460	560	730	65	1.6	-	DFN1006-3
DMN3730UFB4	Single	Y	30	±8	0.9	0.69	-	460	560	730	65	1.6	-	DFN1006H4-3
DMN3730U	Single	Y	30	±8	0.9	0.69	-	460	560	730	65	1.6	-	SOT23
DMN32D2LDF	Dual	Y	30	±10	0.4	0.28	-	1200 (@4V)	1500	2200	39	-	-	SOT353
DMN32D2LFB4	Single	Y	30	±10	0.3	0.35	-	1200 (@4V)	1500	2200	39	-	-	DFN1006H4-3
DMN32D2LV	Dual	Y	30	±10	0.4	0.2	-	1200 (@4V)	1500	2200	39	-	-	SOT563
DMN313DLT	Single	Y	30	±20	270	0.36	-	5000	10000	-	34.3	0.5	-	SOT523

30V P-channel

Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ.(pF) @ V_{DS}=-15V	Q_g typ.(nC) @ V_{GS}=4.5V	Q_g typ.(nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V				
DMP3010LPS	Single	N	-30	±20	-36	2.18	7.5	10		6324	59.2	126.2	POWERDI5060
DMG4413LSS	Single	N	-30	±20	-10.5	2.5	7.5	10.2	-	4965	46	-	SO-8
DMP3015LSS	Single	N	-30	±20	-13	2.5	11	17	-	2748	-	60.4	SO-8
DMP3020LSS	Single	N	-30	±25	-12	2.5	14	25	-	1802	15.3	30.7	SO-8
DMP3035LSS	Single	N	-30	±25	-12	2.5	16	35	-	1655	-	30.7	SO-8
DMG4435SSS	Single	N	-30	±25	-7.3	1.3	20	29	-	1614	18.9	35.4	SO-8
ZXM66P03N8	Single	N	-30	±20	-7.9	2.5	25	35	-	1979	-	62.5	SO-8
DMP3025LK3	Single	N	-30	±20	-16	10	25	41	-	1678	16.5	31.6	TO252-3L
ZXMP3F37DN8	Dual	N	-30	±20	-8.3	1.8	25	41	-	1678	16.5	31.6	SO-8
ZXMP3F37N8	Single	N	-30	±20	-10.7	2.8	25	41	-	1678	16.5	31.6	SO-8
DMP3056LDM	Single	N	-30	±20	-4.3	1.25	45	56	-	722	6.8	13.7	SOT23-6
DMP3056LSD	Dual	N	-30	±20	-6.9	2.5	45	65	-	722	6.8	13.7	SO-8
DMP3056LSS	Single	N	-30	±20	-7.1	2.5	45	65	-	722	6.8	13.7	SO-8
ZXMP3A16N8	Single	N	-30	±20	-6.7	2.8	40	70	-	1022	-	29.6	SO-8
ZXMP3A16DN8	Dual	N	-30	±20	-5.5	2.1	45	70	-	1022	-	29.6	SO-8
ZXMP3A16G	Single	N	-30	±20	-7.5	3.9	45	70	-	1022	-	25	SOT223
DMP3098LDM	Single	N	-30	±20	-4	1.25	65	115	-	336	4	7.8	SOT23-6
DMP3098LSD	Dual	N	-30	±20	-4.4	1.8	65	115	-	336	4	7.8	SO-8
DMP3098LSS	Single	N	-30	±20	-5.3	2.5	65	115	-	336	4	7.8	SO-8
ZXMP3A17DN8	Dual	N	-30	±20	-4.4	2.1	70	110	-	630	-	15.8	SO-8
ZXMP3A17E6	Single	N	-30	±20	-4	1.7	70	110	-	630	-	15.8	SOT23-6
DMP3098L	Single	N	-30	±20	-3.8	1.08	70	120	-	336	4	7.8	MSOP8
ZXM64P03X	Single	N	-30	±20	-3.8	1.1	75	100	-	825	-	46	MSOP8
DMP3130L	Single	N	-30	±12	-3.5	1.4	77	95	150	432	5.9	12	SOT23
ZXMP3F30FH	Single	N	-30	±20	-3.4	1.4	80	140	-	370	-	7	SOT23
DMP3160L	Single	N	-30	±20	-2.7	1.08	122	190	-	227	-	-	SOT23
ZXM62P03E6	Single	N	-30	±20	-1.5	0.625	150	200	-	330	-	10	SOT23-6
ZXMD63P03X	Dual	N	-30	±20	2	1.25	185	270	-	270	-	7	MSOP8
ZXMP3A13F	Single	N	-30	±20	-1.6	0.806	210	330	-	206	-	6.4	SOT23
DMP3030SN	Single	Y	-30	±20	-0.7	0.5	250	450	-	160	-	-	SC59
ZXM61P03F	Single	N	-30	±20	-1.1	0.625	350	550	-	140	-	4.8	SOT23
DMP3120L	Single	N	-30	±12	-2.8	1.4	-	120	240	285	3	6.7	SOT23
DMG2307L	Single	N	-30	±20	-3.2	0.76	90	134	-	371.3	4	8.2	SOT23

THE **DIODES** ADVANTAGE

DMP3010LPS

Did you know? The PowerDI®5060 package has a typical R_{thj-c} of 2.1°C/W which is 10 times lower than the familiar SO8 package. This superior thermal performance improves power dissipation, reducing MOSFET junction temperature, enabling cooler, more reliable running.

The low typical $R_{DS(ON)}$ of the DMP3010LPs ensures that on state losses are kept to a minimum during load switching and battery charging.

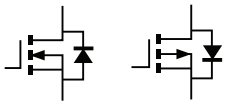
The DMP3010LPS is qualified to AECQ101 standard and is RoHS compliant.

Product benefits

- **Low thermal resistance**
  The PowerDI5060 package has a typical R_{thj-c} of 2.1°C/W.
- **Low profile package**
  The PowerDI5060 has a package profile that is <1.1mm making it ideal for thin applications.
- **Avalanche rated**
  The DMP3010LPS has been designed to withstand the high pulse avalanche energy that can be induced by inductive loads.

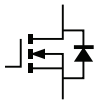
PowerDI is a registered trademark of Diodes Incorporated

30V Complementary



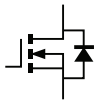
Part Number	Configuration	Type	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=		C_{iss} typ. (pF) @ V_{DS}=±15V	Q_g typ. (nC) @ V_{GS}=4.5V	Q_g typ. (nC) @ V_{GS}=10V	Package
						@T_A=25°C	@T_A=25°C	10V	4.5V				
DMC3018LSD	Complementary	N	N	30	±20	9.1	2.5	20	32	631	5.9	12.4	SO-8
		P	N	-30	±20	-6		45	65	772	7	13.7	
DMC3021LSD	Complementary	N	N	30	±20	8.5	2.5	21	32	767	7.8	16.1	SO-8
		P	N	-30	±20	-7		39	53	1002	10.1	21.1	
ZXMC3F31DN8	Complementary	N	N	30	±20	7	2.1	24	39	742	-	16.4	SO-8
		P	N	-30	±20	-4.5		46	80	820	-	15.2	
DMC3028LSD	Complementary	N	N	30	±20	7.1	2.1	28	45	472	5.2	10.5	SO-8
		P	N	-30	±20	-7.4		25	41	1678	16.4	31.6	
ZXMC3A16DN8	Complementary	N	N	30	±20	6.4	2.1	35	50	796	-	17.5	SO-8
		P	N	-30	±20	-5.4		48	70	970	-	24.9	
DMC3032LSD	Complementary	P	N	-30	±20	-7	2.5	39	53	1002	10.1	21.1	SO-8
		N	N	30	±20	8.1		32	46	404.5	-	9.2	
DMG6602SVT	Complementary	N	N	30	±20	3.4	1.12	60	100	305	6	13	TSOT23-6
		P	N	30	±20	-2.8	1.12	95	140	336	-	10	
ZXMC3AMC	Complementary	N	N	30	±20	3.7	2.45	120	180	190	2.3	3.9	DFN3020-8
		P	N	-30	±20	-2.7		210	330	206	3.8	6.4	
ZXMD63C03X	Complementary	N	N	30	±20	2.3	1.25	135	200	300	-	6.1	MSOP8
		P	N	-30	±20	-2		185	270	280	-	5.4	

31V to 99V N-channel



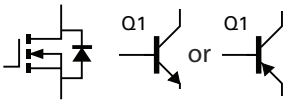
Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=1/2V_{DS}	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V			
DMN4009LK3	Single	N	40	±20	27.6	10.3	8.5	14	-	2072	42	TO252-3L
DMN4015LK3	Single	N	40	±20	20.8	10.3	15	20	-	2072	42	TO252-3L
DMN4025SFG	Single	N	40	±20	6.7	1.82	25	40	-	1790	16	PowerDI3333
DMN4027SSD	Dual	N	40	±20	7.1	2.1	27	47	-	-	12.9	SO-8
DMN4027SSS	Single	N	40	±20	8	2.8	27	47	-	-	12.9	SO-8
DMN4030LK3	Single	N	40	±20	13.7	8.9	30	50	-	604	12.9	TO252-3L
DMN4040SK3	Single	N	40	±20	13.8	8.9	30	54	-	945	18.6	TO252-3L
DMN4034SSD	Dual	N	40	±20	6.3	2.1	34	59	-	-	10	SO-8
DMN4034SSS	Single	N	40	±20	7.2	2.8	34	59	-	-	10	SO-8
DMN4036LK3	Single	N	40	±20	12.2	8.5	36	61	-	453	9.2	TO252-3L
ZXMN6A09DN8	Dual	N	60	±20	5.6	2.1	40	60	-	1407	24.2	S0-8
ZXMN6A09G	Single	N	60	±20	7.5	3.9	40	60	-	1407	24.2	SOT223
ZXMN6A09K	Single	N	60	±20	12.2	10.1	40	60	-	1426	29	TO252-3L
ZXMN6A25DN8	Dual	N	60	±20	5	2.1	50	70	-	1063	20.4	S0-8
ZXMN6A25G	Single	N	60	±20	6.7	3.9	50	70	-	1063	20.4	SOT223
ZXMN6A25K	Single	N	60	±20	10.7	9.85	50	70	-	1063	20.4	TO252-3L
ZXMN6A25N8	Single	N	60	±20	5.7	2.8	50	70	-	1063	20.4	S0-8
ZXMN4A06G	Single	N	40	±20	7	3.9	50	75	-	770	18.2	SOT223
ZXMN4A06K	Single	N	40	±20	10.9	9.5	50	75	-	827	17.1	TO252-3L
DMN6066SSD	Dual	N	60	±20	4.4	2.1	66	97	-	502	10.3	SO-8
DMN6066SSS	Single	N	60	±20	5	2.8	66	97	-	502	10.3	SO-8
DMN6068LK3	Single	N	60	±20	8.5	8.5	68	100	-	502	10.3	T0252-3L
DMN6068SE	Single	N	60	±20	5.6	3.7	68	100	-	502	10.3	SOT223
ZXMN6A08E6	Single	N	60	±20	3.5	1.7	80	150	-	459	5.8	SOT23-6
ZXMN6A08G	Single	N	60	±20	5.3	3.9	80	150	-	459	5.8	SOT223
ZXMN6A08K	Single	N	60	±20	18.2	9.25	80	150	-	459	5.8	T0252-3L
ZXMN6A11DN8	Dual	N	60	±20	3.2	2.1	120	180	-	330	5.7	S0-8
ZXMN6A11G	Single	N	60	±20	4.4	3.9	120	180	-	330	5.7	SOT223
ZXMN6A11Z	Single	N	60	±20	3.6	2.6	120	180	-	330	5.7	SOT89
ZXMN7A11G	Single	N	70	±20	3.8	3.9	130	190	-	298	7.4	SOT223
ZXMN7A11K	Single	N	70	±20	6.1	8.5	130	190	-	298	7.4	TO252-3L
ZXMN6A07F	Single	N	60	±20	1.4	0.806	250	350	-	166	3.2	SOT23
ZXMN6A07Z	Single	N	60	±20	2.5	2.6	250	350	-	166	3.2	SOT89
ZVN4306AV	Single	N	60	±20	1.1	0.85	330	450 (@5V)	-	350	-	E-Line
ZVN4306G	Single	N	60	±20	2.1	3	330	450 (@5V)	-	350	-	SOT223
ZVN4306GV	Single	N	60	±20	2.1	3	330	450 (@5V)	-	350	-	SOT223
ZVN4206A	Single	N	60	±20	0.6	0.7	1000	1500		100	2.4	E-Line
ZVN4206AV	Single	N	60	±20	0.6	0.7	1000	1500 (@5V)	-	100	-	E-Line
ZVN4206G	Single	N	60	±20	1	2	1000	1500 (@5V)	-	100	-	SOT223
ZVN4206GV	Single	N	60	±20	1	2	1000	1500 (@5V)	-	100	-	SOT223
DMN62D1SFB	Single	N	60	±20	0.4	0.47	1400	1600	-	40	1.4	DFN1006-3
DMN5010VAK	Dual	Y	50	±20	0.28	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT563
DMN5L06DMK	Dual	Y	50	±20	0.305	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT23-6
DMN5L06DWK	Dual	Y	50	±20	0.305	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT363
DMN5L06K	Single	Y	50	±20	0.3	0.35	-	2000 (@5V)	2500	50 (max)	-	SOT23
DMN5L06TK	Single	N	50	±20	0.28	0.15	-	2000 (@5V)	2500	50 (max)	-	SOT523
DMN5L06VAK	Dual	Y	50	±20	0.28	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT563
DMN5L06VK	Dual	Y	50	±20	0.28	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT563
DMN5L06WK	Single	Y	50	±20	0.3	0.25	-	2000 (@5V)	2500	50 (max)	-	SOT323
DMN601VK	Dual	Y	60	±20	0.305	0.2	2000	3000	-	50 (max)	-	SOT563
DMN601WK	Single	Y	60	±20	0.3	0.2	2000	3000	-	50 (max)	-	SOT323
DMN601TK	Single	Y	60	±20	0.3	0.15	2000	3000	-	50	-	SOT523

31V to 99V N-channel (continued)



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}=1/2V_{DS}	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V			
DMN62D0LFB	Single	Y	60	±20	0.1	0.47	-	2000	2500	28	305	DFN1006-3
ZVN2106A	Single	N	60	±20	0.45	0.7	2000	-	-	75	-	E-Line
ZVN2106G	Single	N	60	±20	0.71	2	2000	-	-	75	-	SOT223
2N7002K	Single	Y	60	±20	0.3	0.35	2000	3000 (@5V)	-	50 (max)	-	SOT23
DMN601DWK	Dual	Y	60	±20	0.305	0.2	2000	3000 (@5V)	-	50 (max)	-	SOT363
DMN601K	Single	Y	60	±20	0.3	0.35	2000	3000 (@5V)	-	50 (max)	-	SOT23
ZVN4106F	Single	N	60	±20	0.2	0.33	2500	5000 (@5V)	-	35	-	SOT23
2N7002W	Single	N	60	±20	0.115	0.2	2600	1800 (@5V)	-	22	-	SOT323
2N7002A	Single	-	60	±20	0.115	0.25	3000	3500		23	-	SOT23
2N7002E	Single	N	60	±20	0.24	0.3	3000	4000	-	22	-	SOT23
BSS138 - 7	Single	N	50	±20	0.2	0.3	3500	-	-	50 (max)	-	SOT23
BSS138DW	Dual	N	50	±20	0.2	0.2	3500	-	-	50	-	SOT363
BSS138W	Single	N	50	±20	0.2	0.2	3500	-	-	50 (max)	-	SOT323
MMBF170	Single	N	60	±20	-0.5	0.3	5000	5300	-	22	-	SOT23
VN10LF	Single	N	60	±20	0.15	0.33	5000	7500		60		SOT23
BS870	Single	N	60	±20	0.25	0.3	5000	-	-	22	-	SOT23
ZVN3306A	Single	N	60	±20	0.27	0.625	5000	-	-	35	-	E-Line
ZVN3306F	Single	N	60	±20	0.15	0.33	5000	-	-	35	-	SOT23
DMN55D0UT	Single	Y	50	±12	0.16	0.2	-	6000 (@4V)	5000	25	-	SOT523
DMN66D0LDW	Dual	Y	60	±20	0.115	0.25	5000	6000 (@5V)	-	23	-	SOT363
DMN66D0LT	Single	Y	60	±20	0.115	0.22	5000	6000 (@5V)	-	23	-	SOT523
DMN66D0LW	Single	Y	60	±20	0.115	0.25	5000	6000 (@5V)	-	23	-	SOT323
VN10LP	Single	N	60	±20	0.27	0.625	5000	7500 (@5V)	-	60	-	E-Line
2N7002 -7	Single	N	60	±20	0.115	0.3	13500	7500 (@5V)	-	22	-	SOT23
2N7002DW	Dual	N	60	±20	0.115	0.3	13500	7500 (@5V)	-	22	-	SOT363
2N7002T	Single	N	60	±20	0.115	0.15	13500	7500 (@5V)	-	22	-	SOT523
2N7002VAC	Dual	N	60	±20	0.28	0.15	13500	7500 (@5V)	-	50 (max)	-	SOT563

MOSFET plus BJT



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF)	Q_g typ. (nC) @ V_{GS}=10V	Package
					25°C	25°C	10V	4.5V	2.5V			
DMB53D0UDW	N channel plus NPN	Y	50	±12	0.16	0.25	-	4000 (@4V)	5000	25	-	SOT363
DMB53D0UV	N channel plus NPN	Y	50	±12	0.16	0.25	-	4000 (@4V)	5000	25	-	SOT563
DMB54D0UDW	N channel plus PNP	Y	50	±12	0.16	0.25	-	4000 (@4V)	5000	25	-	SOT363
DMB54D0UV	N channel plus PNP	Y	50	±12	0.16	0.25	-	4000 (@4V)	5000	25	-	SOT563

THE **DIODES** ADVANTAGE

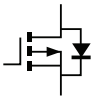
Co-packaged MOSFET and Bipolar

Did you know? Diodes Incorporated offers designers a range of co-packaged discrete circuit elements. The DMB5xxx series co-packages an N-channel enhancement mode MOSFET and a Bipolar Junction Transistor in small leadless packages such as SOT363/563.

The DMB5xxx series allows designers to replace two discrete circuit elements or to configure load switches that provide the benefits of both technologies.

For example, a load switch that utilizes a bipolar as the 'pass element' can be used in circuits where the output voltage is higher than that of the input – the intrinsic body diode of a MOSFET would conduct under such conditions.

31V to 99V P-channel



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF)	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V			
DMP4025SFG	Single	N	-40	±20	-7	1.82	25	45	-	-	-	PowerDI3333
DMP4050SSS	Single	N	-40	±20	-6	2.8	50	70	-	674	13.9	SO-8
DMP4050SSD	Dual	N	-40	±20	-5.2	2.1	50	79	-	674	13.9	SO-8
DMP4051LK3	Single	N	-40	±20	-10.5	8.9	51	85	-	674	14	TO252-3L
ZXMP6A18DN8	Dual	N	-60	±20	-4.8	2.1	55	80	-	1580	44	S0-8
ZXMP6A18K	Single	N	-60	±20	-10.4	10.1	55	80	-	1580	44	TO252-3L
ZXMP4A16G	Single	N	-40	±20	-6.4	3.9	60	100	-	1007	26.1	SOT223
ZXMP4A16K	Single	N	-40	±20	-9.9	9.5	60	100	-	965	29.6	TO252-3L
ZXMP4A57E6	Single	N	-40	±20	-3.7	1.7	80	150	-	833	15.8	SOT26
ZXMP6A16DN8	Dual	N	-60	±20	-3.9	2.15	85	125	-	1021	24.2	S0-8
ZXMP6A16K	Single	N	-60	±20	-8.2	9.76	85	125	-	1021	24.2	TO252-3L
ZXMP6A17DN8	Dual	N	-60	±20	-3.2	2.15	125	190	-	637	17.7	S0-8
ZXMP6A17E6	Single	N	-60	±20	-3	1.7	125	190	-	637	17.7	SOT23-6
ZXMP6A17G	Single	N	-60	±20	-4.1	3.9	125	190	-	637	17.7	SOT223
ZXMP6A17K	Single	N	-60	±20	-6.6	9.3	125	190	-	637	17.7	S0-8
ZXMP6A17N8	Single	N	-60	±20	-3.4	2.5	125	190	-	637	17.7	SO-8
ZXMP7A17G	Single	N	-70	±20	-3.7	3.9	160	250	-	635	18	SOT223
ZXMP7A17K	Single	N	-70	±20	-5.7	9.25	160	250	-	635	18	TO252-3L
ZXMP6A13G	Single	N	-60	±20	-2.3	3.9	390	595	-	219	5.9	SOT223
ZXMP6A13F	Single	N	-60	±20	-1.1	0.806	400	600	-	219	5.9	SOT23
DMP58D0LFB	Single	Y	-50	±20	-1.8	0.47	-	8000	-	27	-	DFN1006-3
BSS138	Single	N	50	±20	0.2	0.3	3500	-	-	50 (max)	-	SOT23
BSS138DW	Dual	N	50	±20	0.2	0.2	3500	-	-	50	-	SOT363
BSS138W	Single	N	50	±20	0.2	0.2	3500	-	-	50 (max)	-	SOT323
ZVP2106A	Single	N	-60	±20	-0.28	0.7	5000	-	-	100	-	E-Line
ZVP2106G	Single	N	-60	±20	-0.45	2	5000	-	-	100	-	SOT223
ZVP4105A	Single	N	-50	±20	-0.175	0.625	10000	-	-	40	-	E-Line
BS250F	Single	N	-45	±20	-0.09	0.33	14000	-	-	25	-	SOT23
ZVP3306A	Single	N	-60	±20	-0.16	0.625	14000	-	-	50	-	E-Line
ZVP3306F	Single	N	-60	±20	-0.09	0.33	14000	-	-	50	-	SOT23
BS250P	Single	N	-45	±20	-0.23	0.7	14000	-	-	60	-	E-Line
DMP57D5UFB	Single	Y	-50	±8	-0.2	0.425	-	6000 (@4V)	8000	29	-	DFN1006-3
DMP57D5UV	Dual	Y	-50	±8	-0.16	-0.4	-	6000 (@4V)	8000	29	-	SOT563
DMP58D0SV	Dual	Y	-50	±20	-0.16	-	-	8000 (@5V)	-	27	-	DFN1006-3
BSS84DW	Dual	N	-50	±20	-0.13	0.3	-	10000 (@10V)	-	45 (max)	-	SOT363
BSS84W	Single	N	-50	±20	-0.13	0.2	-	10000 (@5V)	-	45 (max)	-	SOT323
BSS84W	Single	N	-50	±20	-0.13	0.2	-	10000 (@5V)	-	45 (max)	-	SOT323
BSS84V	Dual	N	-50	±20	-0.13	0.15	-	10000 (@5V)	-	45 (max)	-	SOT563
BSS84	Single	N	-50	±20	-0.13	0.3	-	10000 (@-5V)	-	45	-	SOT23

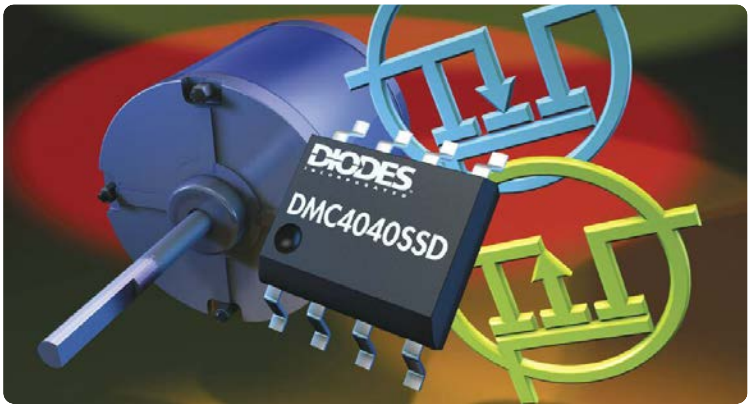
A Focus on Applications

Did you know? Strong customer relationships and a deep understanding of their end applications are the primary drivers of the Diodes product development strategy.

For example, Diodes Incorporated has recently worked with one of its major customers to develop a 40V complementary pair to meet the stringent requirements of brushless DC motor (BLDC) circuits.

The result of this collaboration is the DMC4040SSD. A 40V V_{DS} complementary dual that features matched $R_{DS(ON)}$, to ensure motor load losses are balanced and minimized, and is able to handle continuous currents of 6A and peak start up currents of up to 5 times continuous.

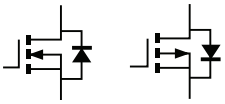
The DMC4040SSD is suited to use in 24V DC motor system controlling cooling and extractor fans, pumps, compressors and printer heads.



Product benefits

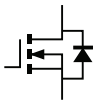
- **Matched $R_{DS(ON)}$**
  The DMC4040SSD features matched $R_{DS(ON)}$ of 25mΩ ensuring motor load losses are balanced and minimized.
- **29A Pulsed current rating**
  The DMC4040SSD has a pulsed current rating of 29A, enabling motor torque currents of up to five times the continuous current to be supported during motor start up or stalled motor conditions.
- **40V V_{DS} rating**
  40V V_{DS} rating provides sufficient guardband for voltage spikes/transients to ensure safe operation from 24V DC supplies.

31V to 100V Complementary



Part Number	Configuration	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=		C_{iss} typ. (pF)	Q_g typ. (nC) @ V_{GS}=10V	Package
				@T_A=25°C	@T_A=25°C	10V	4.5V			
DMC4040SSD	Complementary	40	±20	7	1.8	25	40	1790	16	SO-8
		-40	±20	-5.7		25	45	1643	14	
ZXMC4A16DN8	Complementary	40	±20	5.2	2.1	50	75	770	17	SO-8
		-40	±20	-4.7		60	100	1000	26	
ZXMC4559DN8	Complementary	60	±20	4.7	2.2	55	75	1063	20.4	SO-8
		-60	±20	-3.9		85	125	1021	24.2	
ZXMC6A09DN8	Complementary	60	±20	5.1	2.1	45	70	1407	24.2	SO-8
		-60	-	-4.8		55	80	1508	44	
DMC4511SK4	Complementary	35	±20	13	4.1	35	65	850	18.7	TO252-4L
		-35	±20	-12		45	65	985	19.2	
BSS8402DW	Complementary	60	±20	0.115	0.2	7500	13500	22	-	SOT363
		-50	-	-0.13		-	10000 (@5V)	45	-	
ZXMC10A816N8	Complementary	100	±20	2.1	2.4	230	300	497	9.2	SO-8
		-100	±20	-2.2		235	320	717	16.5	

100V plus N-channel



Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF)	Q_g typ. (nC) @ V_{GS}=10V	Package
					25°C	25°C	10V	4.5V	2.5V			
ZXMN10A09K	Single	N	100	±20	7.7	10.1	85	100 (@6V)	-	1313	26	TO252-3L
ZXMN10A25K	Single	N	100	±20	6.4	4.25	125	150 (@6V)	-	859	17.16	TO252-3L
ZXMN10A25G	Single	N	100	±20	4	2	125	150 (@6V)	-	859	17	SOT223
ZXMN10A08E6	Single	N	100	±20	1.9	1.7	250	300 (@ 6V)	-	405	7.7	SOT23-6
ZXMN10B08E6	Single	N	100	±20	1.9	1.7	230	300	-	497	9.2	SOT23-6
ZXMN10A08DN8	Dual	N	100	±20	2.1	1.25	250	300 (@6V)	-	405	7.7	S0-8
ZXMN10A08G	Single	N	100	±20	2.9	2	250	300 (@6V)	-	405	7.7	SOT223
ZXMN10A11G	Single	N	100	±20	2.4	3.9	350	450 (@6V)	-	274	5.4	SOT223
ZXMN10A11K	Single	N	100	±20	3.5	4.06	350	450 (@6V)	-	274	5.4	TO252-3L
ZVN4310A	Single	N	100	±20	0.9	0.85	500	650 (@5V)	-	350	-	E-Line
ZVN4310G	Single	N	100	±20	1.67	3	540	750 (@5V)	-	350	-	SOT223
ZXMN10A07F	Single	N	100	±20	0.8	0.625	700	900 (@6V)	-	138	2.9	SOT23
ZXMN10A07Z	Single	N	100	±20	1.4	1.5	700	900 (@6V)	-	138	2.9	SOT89
ZXMN15A27K	Single	N	150	±20	2.6	9.5	650	-	-	169	6.6	TO252-3L
ZXMN20B28K	Single	N	200	±20	2.3	10.2	750	780	-	358	12.9	TO252-3L
ZVN4210A	Single	N	100	±20	0.45	0.7	1500	1800 (@5V)	-	100	-	E-Line
ZVN4210G	Single	N	100	±20	0.8	2	1500	1800 (@5V)	-	100	-	SOT223
ZVNL110A	Single	N	100	±20	0.32	0.7	3000	4500 (@5V)	-	75	-	E-Line
ZVNL110G	Single	N	100	±20	0.6	2	3000	4500 (@5V)	-	75	-	SOT223
ZVN2110A	Single	N	100	±20	0.32	0.7	4000	-	-	75	-	E-Line
ZVN2110G	Single	N	100	±20	0.5	2	4000	-	-	59	-	SOT223
ZXMN15A24E6	Single	N	150	±20	0.58	1.1	2500	-	-	54	2	SOT23-6
ZVN4424A	Single	N	240	±40	0.26	0.75	5500	-	6000	110	-	E-Line
ZVN4424G	Single	N	240	±40	0.5	2.5	5500	-	6000	110	-	SOT223
ZVN4424Z	Single	N	240	±40	0.3	1	5500	-	6000	110	-	SOT89
BSS123	Single	N	100	±20	0.17	0.3	6000	10000	-	29	-	SOT23
BSS123(Z)	Single	N	100	±20	0.17	0.36	6000	-	-	20	-	SOT23
BSS123A	Single	N	100	±20	0.17	0.36	6000	10000	-	25	-	SOT23
BSS123W	Single	N	100	±20	0.17	0.2	6000	10000	-	29	-	SOT323
ZVN4525E6	Single	N	250	±40	0.23	1.1	8500	9000	9500 (@2.4V)	72	2.6	SOT23-6
ZVN4525G	Single	N	250	±40	0.31	2	8500	9000	9500 (@2.4V)	72	2.6	SOT223
ZVN4525Z	Single	N	250	±40	0.24	1.2	8500	9000	9500 (@2.4V)	72	2.6	SOT89
ZVN3310A	Single	N	100	±20	0.2	0.625	10000	-	-	40	-	E-Line
ZVN3310F	Single	N	100	±20	0.1	0.33	10000	-	-	40	-	SOT23
ZVN2120A	Single	N	200	±20	0.18	0.7	10000	-	-	85	-	E-Line
ZVN2120G	Single	N	200	±20	0.32	2	10000	-	-	85	-	SOT223
ZVN0124A	Single	N	240	±20	0.16	0.7	16000	-	-	85	-	E-Line
ZVN3320F	Single	N	200	±20	0.06	0.33	25000	-	-	45	-	SOT23
BS107P	Single	N	200	±20	0.12	0.5	-	30000	23000 (@2.6V)	58	2.7	E-Line
ZVNL120A	Single	N	200	±20	0.18	0.7	-	10000 (@5V)	10000 (@3V)	85	-	E-Line
ZVNL120G	Single	N	200	±20	0.32	2	-	10000 (@5V)	10000 (@3V)	85	-	SOT223
ZVN0540A	Single	N	400	±20	0.09	0.7	50000	-	-	70	-	E-Line
ZVN0545A	Single	N	450	±20	0.09	0.7	50000	-	-	70	-	E-Line
ZVN0545G	Single	N	450	±20	0.14	2	50000	-	-	70	-	SOT223
ZXMN0545G4	Single	N	450	±20	0.14	2	50000	-	-	70	-	SOT223

100V plus P-channel

Part Number	Configuration	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=			C_{iss} typ. (pF) @ V_{DS}= 1/2V_{DS}	Q_g typ. (nC) @ V_{GS}=10V	Package
					@T_A=25°C	@T_A=25°C	10V	4.5V	2.5V			
ZXMP10A18G	Single	N	-100	±20	-3.7	3.9	150	190 (@6V)	-	1055	26.9	SOT223
ZXMP10A18K	Single	N	-100	±20	-5.9	10.2	150	190 (@6V)	-	1055	26.9	TO252-3L
ZXMP10A16K	Single	N	-100	±20	4.6	9.76	235	285 (@6V)	-	717	16.5	TO252-3L
ZXMP10A17K	Single	N	-100	±20	-1.6	1.7	350	450 (@6V)	-	424	10.7	TO252-3L
ZXMP10A17E6	Single	N	-100	±20	-1.6	1.7	350	450 (@6V)	-	424	10.7	SOT236
ZXMP10A17G	Single	N	-100	±20	-2.4	3.9	350	450 (@6V)	-	424	10.7	SOT233
ZXMP10A13F	Single	N	-100	±20	-0.7	0.806	1000	1450 (@6V)	-	141	3.5	SOT23
ZVP2110A	Single	N	-100	±20	-0.23	0.7	8000	-	-	100	-	E-Line
ZVP2110G	Single	N	-100	±20	-0.31	2	8000	-	-	100	-	SOT223
ZVP4424A	Single	N	-240	±40	-0.2	0.75	9000	-	11000 (@3.5V)	100	-	E-Line
ZVP4424G	Single	N	-240	±40	-0.48	2.5	9000	-	11000 (@3.5V)	100	-	SOT223
ZVP4424Z	Single	N	-240	±40	-0.2	1	9000	-	11000 (@3.5V)	100	-	SOT89
ZVP4525E6	Single	N	-250	±40	-0.197	1.1	14000	-	18000 (@3.5V)	73	2.45	SOT23-6
ZVP4525G	Single	N	250	±40	-0.265	2	14000	-	18000 (@3.5V)	73	2.45	SOT223
ZVP4525Z	Single	N	250	±40	-0.205	1.2	14000	-	18000 (@3.5V)	73	2.45	SOT89
ZVP3310A	Single	N	-100	±20	-0.14	0.625	20000	-	-	50	-	E-Line
ZVP3310F	Single	N	-100	±20	-0.075	0.33	20000	-	-	50	-	SOT23
ZVP2120A	Single	N	-200	±20	-0.12	0.7	25000	-	-	100	-	E-Line
ZVP2120G	Single	N	-200	±20	-0.2	2	25000	-	-	100	-	SOT223
ZXMP2120G4*	Single	N	-200	±20	0.2	2	25000	-	-	100	-	SOT223
ZXMP2120E5*	Single	N	-200	±20	-0.122	0.75	28000	-	-	100	-	SOT23-5
ZXMP2120FF	Single	N	-200	±20	-0.137	1	28000	-	-	100	-	SOT23F
ZVP1320F	Single	N	-200	±20	-0.035	0.33	80000	-	-	50	-	SOT23
ZVP0545A	Single	N	-450	±20	-0.045	0.7	150000	-	-	120	**	E-Line
ZVP0545G	Single	N	-450	±20	-0.075	2	150000	-	-	120	**	SOT223

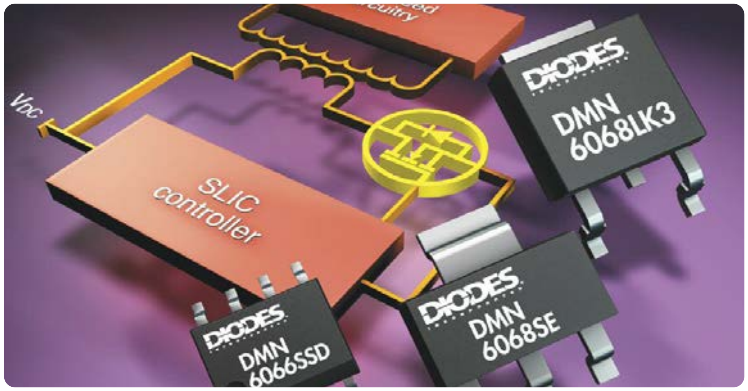
THE **DIODES** ADVANTAGE

MOSFET portfolio optimized for VoIP

Did you know? Diodes Incorporated provides the designers of Voice over Internet Protocol (VoIP) communication equipment with a range of rugged MOSFETs that significantly reduces circuit complexity and cost.

For example, DMN60xx series are designed to handle the high pulse current needed to generate tip and ring linefeeds and to withstand the avalanche energy induced during switching.

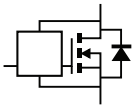
This meets the stringent requirements of primary switch position in transformer based Subscriber Line Interface Circuits (SLIC) DC/DC converters.



Product features

- **High Pulse current (I_{DM})**
  With high I_{DM} handling capabilities, the MOSFETs can drive the transformer to deliver the required RING and TIP currents.
- **Avalanche Rugged**
  These MOSFETs have been designed to withstand the high pulse avalanche energy that will be induced by the transformer during switching transition.
- **Low gate charge (Q_g) and input capacitance (C_{iss})**
  This simplifies the SLIC design and reduces component count and cost.
  These MOSFETs are capable of being driven at low logic level voltages.

Protected MOSFETs (IntelliFET)



Part Number	Polarity	TAB	V_{DS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{IN}=			$V_{DS(S/C)}$	E_{AS} (mJ)	Package
				@T_A=25°C	@T_A=25°C	3V	5V	10V	V_{IN}=5V		
ZXMS6006DG	N	Drain	60	2.8	3	0.1	125	-	36	490	SOT223
ZXMS6006DT8	N	N/A	60	2.8	2.1	0.1	100	-	36	210	SM-8
ZXMS6006SG	N	Source	60	2.8	3	0.1	125	-	36	490	SOT223
ZXMS6005DG	N	Drain	60	2	3	250	200	-	24	490	SOT223
ZXMS6005DT8	N	N/A	60	1.8	2.13	250	200	-	24	210	SM-8
ZXMS6005SG	N	Source	60	2	1.6	250	200	-	24	480	SOT223
ZXMS6005N8	N	N/A	60	-	-	250	200	-	24	-	S0-8
ZXMS6005DN8	N	N/A	60	-	-	250	200	-	24	-	S0-8
ZXMS6004DG	N	Drain	60	1.3	3	600	500	-	36	490	SOT223
ZXMS6004DT8	N	N/A	60	1.2	2.13	600	500	-	36	210	SM-8
ZXMS6004FF	N	N/A	60	1.3	1.5	600	500	-	36	90	SOT23F
ZXMS6004SG	N	Source	60	1.3	1.6	600	500	-	36	480	SOT223
ZXMS6003G	N	Drain	60	1.4	2.5	-	675	550	36	550	SOT223
ZXMS6002G	N	Drain	60	1.4	2.5	-	675	550	36	550	SOT223
ZXMS6001N3	N	Source	60	1.1	1.5	2000	675	-	36	550	SOT223
BSP75G	N	Drain	60	1.4	2.5	-	675	550	36	550	SOT223
BSP75N	N	Source	60	1.2	1.5	-	675	550	36	550	SOT223

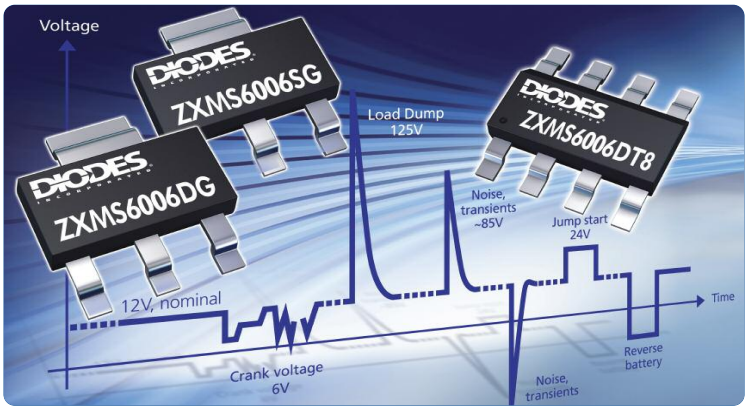
THE **DIODES** ADVANTAGE

Self- protected MOSFET (IntelliFET)

Did you know? Diodes Incorporated designs, develops and manufactures a range of low-side self-protected MOSFETs that are ideal for switching inductive loads, such as motors, relays and lamps at low frequencies.

These devices feature over-temperature, over voltage, and over current protection as well input ESD protection facilities enabling circuit designers to dramatically increase reliability.

The Diodes IntelliFET portfolio is packaged in the SO8, SM8, SOT223 and the SOT23F package, enabling the industry's smallest self-protected MOSFET.



Product features

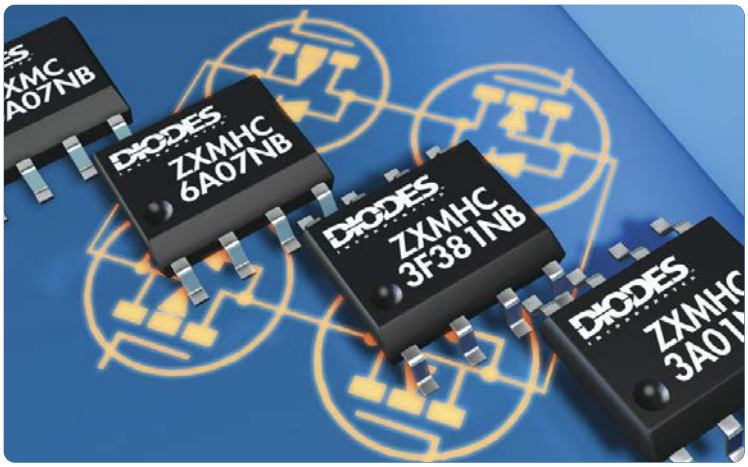
- **Over voltage, over-temperature and over-current protection**
- **Typical $R_{DS(ON)}$ as low as 80mΩ**
  Low $R_{DS(ON)}$ minimizes the conduction losses through the device.
- **3V and 5.5V inputs**
  IntelliFET portfolio can be driven directly from a microcontroller.
- **Low thermal resistance of SM8 package**
  The SM8 package has a thermal resistance 30% lower than competing SO8 solutions, enabling cooler running more reliable end applications.
- **Two independent and isolated self-protected MOSFETs**
  Co-packaging two self-protected MOSFETs enables one dual SM8 to replace two SOT223 whilst delivering the same thermal performance.
- **Qualified to AECQ101**
  Fully meets the requirements of AECQ1010 standard of the Automotive Electronics Council.

THE **DIODES** ADVANTAGE

H-bridge

Did you know? Diodes Incorporated is the only vendor to offer a range of unique discrete H-bridges. Featuring dual complementary pairs of N- and P-type MOSFETs packaged in either the SO8 or SM8 package, they dramatically simplify DC fan and Cold Cathode Fluorescent Lamp (CCFL) inverter circuits as they can replace either four discrete SOT23 packaged MOSFETs or two complementary pairs, reducing both component count and PCB size in space constrained applications. A further benefit of these products is the reduction in overall inventory cost as only one device instead of two or four has to be sourced.

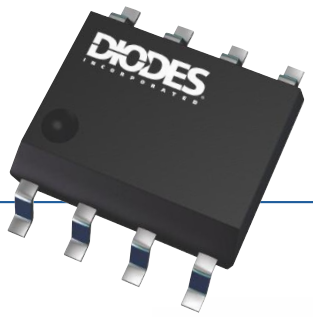
The SO8 H-bridge portfolio comprises two 30V H-bridge, the ZXMHC3A01N8 and ZXMHC3F381N8, that are well-suited for 12V DC fan and inverter applications and offer users a choice of low $R_{DS(ON)}$ performance. The 60V rated ZXMHC6A07N8 and 100V rated ZXMHC10A07N8 are targeted at 24V DC and 48V DC motor control circuits, respectively.



Product benefits

- **Simplified designs**
  One MOSFET H-bridge can replace two dual SO8's, reducing PCB area footprint by 50%.
- **Reduce component count**
  One MOSFET H-bridge can replace two dual SO8's, reducing component count and PCB area.
- **Reduce inventory cost**
  Only one component needs to be stocked instead of 2 or 4.

ZETEX | A Product Line of Diodes Incorporated



H-bridge

Part Number	Configuration	Type	ESD Diode (Y/N)	V_{DS} (V)	V_{GS} (V)	I_D (A)	P_D (W)	$R_{DS(ON)}$ (mΩ max) at V_{GS}=		C_{iss} typ. (pF)	Q_g typ. (nC) @ V_{GS}=10V	Package
						25°C	25°C	10V	4.5V			
ZXMHC3F381N8	H-bridge	2*N	N	30	±20	5	1.3	33	60	430	9	SO-8
		2*P	N	-30	±20	-4.1		55	80	670	12.7	
ZXMHC3A01N8	H-bridge	2*N	N	30	±20	2.7	1.3	125	180	194	3.9	SO-8
		2*P	N	-30	±20	-2.1		210	330	204	5.2	
ZXMHC3A01T8	H-bridge	2*N	N	30	±20	3.1	1.7	125	180	194	3.9	SM8
		2*P	N	-30	±20	-2.3		210	330	204	5.2	
ZXMHC6A07N8	H-bridge	2*N	N	60	±20	1.8	1.3	250	350	166	3.2	SO-8
		2*P	N	-60	±20	-1.4		400	600	233	5.1	
ZXMHC6A07T8	H-bridge	2*N	N	60	±20	1.8	1.7	300	450	166	3.2	SM8
		2*P	N	-60	±20	-1.5		425	630	233	5.1	
ZXMHN6A07T8	H-bridge	4*N	N	60	±20	1.8	1.7	300	450	166	3.2	SM8
ZXMHC10A07N8	H-bridge	2*N	N	100	±20	1.1	1.3	700	900	138	2.9	SO-8
		2*P	N	-100	±20	-0.9		1000	1450	141	3.5	
ZXMHC10A07T8	H-bridge	2*N	N	100	±20	1.1	1.3	700	900	138	2.9	SM8
		2*P	N	-100	±20	-0.9		1000	1450	141	3.5	

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