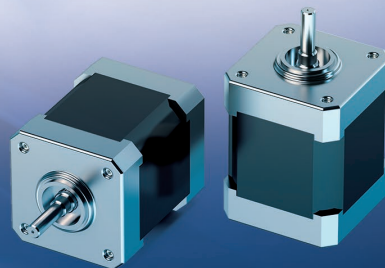




DFN2020

PACKAGED MOSFETS

HIGH THERMAL EFFICIENCY AND SMALL FORM FACTOR



Industry-Leading Range of High-Performance DFN2020 MOSFETs Reduce System Size

DFN2020 Dual Flat No-Leads Package

2mm by 2mm Package

At Diodes Incorporated we lead the way in performance MOSFETs. Our miniature products are of no exception, and the DFN2020 package portfolio provides a compelling size and performance proposition.

Industry-Leading DFN2020 High-Performance Portfolio

Industries' largest portfolio with over 120 products

- N-Channel 12V to 300V
- P-Channel -12V to -250V

Industries' lowest $R_{DS(ON)}$

- N-Channel 12V, 24V, 40V, 50V, 60V, 65V, 80V, 115V and 300V
- P-Channel 12V, 25V, 40V and 250V

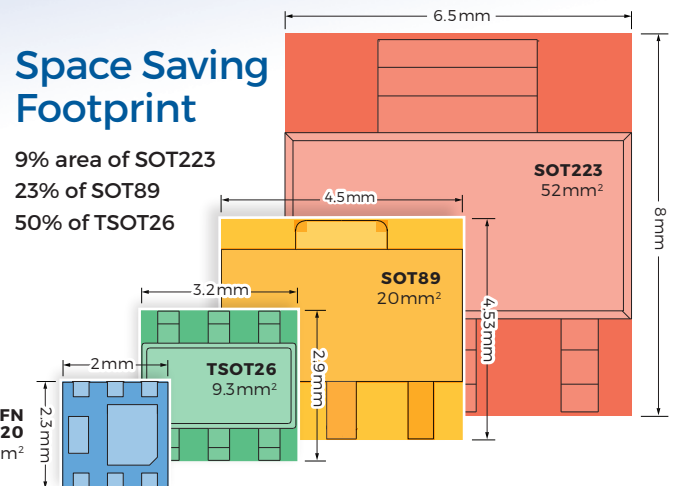
Ultra-Small Leadless Packaging

- The DFN2020 package occupies just:
 - 9% of the PCB area occupied by SOT223
 - 23% of the PCB area occupied by SOT89
 - 50% of the PCB area occupied by TSOT26

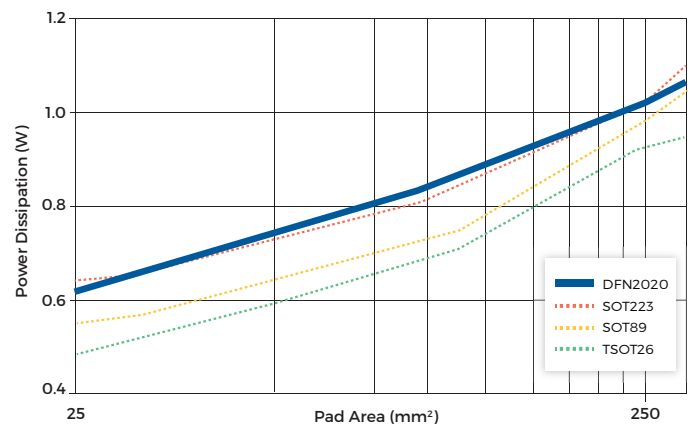
Thermally-Efficient Package

- Low total thermal resistance ($R_{\theta JC}$ and $R_{\theta JA}$) enables higher power dissipation than larger legacy leaded packages
- High thermal efficiency from large underside pad maximizes die-to-PCB contact
- Superior power performance
- High power density allows smaller system sizes
- Reduced thermal management BOM cost

Switching to DFN2020 Enables High-Power Dissipation and Reduces Required Space



Power Dissipation



Power Dissipation Lab Test

DFN2020 matches SOT223 power dissipation and outperforms SOT89 and TSOT26 packages (PCB pad area 32mm² to 250mm²)

DFN2020 Package MOSFET Portfolio

Type	V _{DSS}	V _{GSS}	I _D	P _D	R _{DS(ON)} Max.(mΩ) @ V _{GS} =				V _{GS(TH)} Min. to Max.	C _{iss} Typ.	Q _c Typ. @ V _{GS} = 4.5V	ESD Diode	Automotive version available		
	V	±V	A	W	10V	4.5V	2.5V	1.8V	V	pF	nC		Y	-	Part Number
N-Channel	12	8	15	2.1	-	4.8	7	-	0.3 to 1	-	26	Y	-	DMN1004UFDF	
			12.2	1.7	-	8	12.5	-	0.3 to 1	-	13.6	N	Y	DMN1008UFDF	
			11	2.17	-	10	12	14	0.35 to 0.8	2480	27.3	Y	-	DMN1019UFDE	
	20	8	10.5	2.03	-	11	13	30	0.5 to 1.1	2453	14.3	Y	Y	DMN2013UFDE	
			7.1	1.67	-	22	26	36	0.5 to 1	647	7.1	Y	-	DMN2024UFDF	
			11.6	1.8	-	9	15	30	0.4 to 1.2	-	19.3	N	-	DMN2015UFDF	
	12	8	11.7	1.97	-	9.5	11	20	0.4 to 1	2248	24	Y	-	DMN2011UFDE	
			14.1	1.8	6	7.2	12.5	-	0.55 to 1.45	-	29.6	N	-	DMT2004UFDF	
	30	12	8	10.4	2.03	-	19	25	40	0.4 to 1	-	15	Y	-	DMN3020UFDF
				7	2.1	28	32	50	-	0.6 to 1.4	-	6.1	N	-	DMN3042LFDF
		20	8	14.1	2.1	7	10	-	-	1 to 3	-	8.4	N	Y	DMT3006LFDF
				13	1.7	6.9	10.5	-	-	1.15 to 2.5	-	8.1	N	-	DMT35M4LFDF
				10	2.02	12	16	-	-	1.4 to 2	-	11.3	N	Y	DMN3016LFDF
				8.4	1.8	17	28	-	-	1 to 2.5	-	3.6	N	Y	DMT3020LFDF
	40	20	11.8	2	9.5	15.5	-	-	1 to 3	1179	8.3	N	-	DMT4008LFDF	
			11.6	2.35	11.5	18	-	-	1 to 3	1030	6.8	N	Y	DMTH4008LFDFW	
	60	20	8	2.03	20	28	-	-	1.4 to 2.4	1060	8.8	N	Y	DMN4020LFDE	
			9.5	1.9	14	21	-	-	1.2 to 2.3	785	7.3	N	-	DMT6012LFDF	
			9.4	2.3	18	27.5	-	-	1 to 3	-	7.5	N	Y	DMTH6016LFDFW	
	65	16	6.5	2.03	38	47	-	-	1 to 3	1287	10.4	N	Y	DMN6040SFDE	
8.1			1.76	18	23	-	-	1 to 2.3	891	7.5	Y	-	DMT6017LFDF		
80	20	7.5	2.2	25	38	-	-	1.2 to 2.5	641	5.4	N	-	DMT8030LFDF		
		4	1.8	62	110	-	-	1 to 3	-	2.5	N	Y	DMT10H072LFDF		
100	20	2.2	1.6	225	290	-	-	1 to 2.5	384	3.7	N	-	DMN10H220LFDF		
		6	1.6	32	46	-	-	1.3 to 2.5	683	6.3	N	-	DMT10H032LFDF		
		4.3	1.8	65	70	-	-	0.6 to 2.2	252	-	N	-	DMT12H065LFDF		
300	20	0.55	1.98	4000	4000	-	-	1 to 2.8	187	-	N	-	DMN30H4D0LFDE		
Dual N+N	12	8	5.6	1.4	-	29	34	44	0.4 to 1	914	10.5	N	-	DMN1029UFDB	
			10	6	1.4	-	25	31	-	0.5 to 1	-	5.9	Y	-	DMN2025UFDB
	20	12	4.6	1.14	-	35	43	56	0.4 to 1	369	3.6	N	Y	DMN2053UFDB	
			4.7	1.4	-	40	65	-	0.35 to 1.4	713	8	Y	-	DMN2041UFDB	
	30	12	5	1.36	-	40	75	-	0.5 to 1.5	-	5.3	N	Y	DMN3055LFDB	
			6.2	1.7	30	42	-	-	1 to 2	-	5	N	Y	DMN3032LFDB	
100	20	6	1.6	32	46	-	-	1.3 to 2.5	683	6.3	N	-	DMT10H032LFDF		
P-Channel	12	8	12.8	2.1	-	8.5	12	18.5	0.3 to 1	2475	28	Y	-	DMP1005UFDF	
			11	2	-	11	19	30	0.3 to 1	-	26	N	Y	DMP1009UFDF	
			12.6	2.11	-	15	30	40	0.3 to 0.9	-	19.5	N	-	DMP1012UFDF	
			9.1	2.03	-	16	21.5	26	0.38 to 0.8	2953	25.3	Y	-	DMP1022UFDEQ	
			9.5	2.1	-	15.3	19	26.5	0.35 to 0.8	2712	28.6	Y	-	DMP1022UFDF	
	20	8	9	2.1	-	16	22	40	0.35 to 1	2950	34	Y	-	DMP2021UFDF	
			7.6	2.1	-	27	32	50	0.4 to 1	2000	27	N	-	DMP2023UFDF	
			6.9	2.03	-	29	39	60	0.4 to 1	-	20.5	Y	-	DMP2035UFDF	
			3.2	1.39	-	90	120	-	0.3 to 1	-	6.8	Y	-	DMP2090UFDB	
	12	6.1	1.8	-	32	53	-	0.6 to 1.5	-	8.6	N	-	DMP2040UFDF		
	25	8	6.7	2	-	27	34	40	0.4 to 1	2580	28.2	Y	-	DMP2039UFDE	
	30	20	6.8	2.03	25	38	-	-	1.2 to 2.4	-	10.9	N	Y	DMP3028LFDE	
			8.6	2	19	45	-	-	1 to 3	-	9.2	Y	-	DMP3026SFDF	
	40	20	6	2.1	33	50	-	-	1 to 2.2	1382	11.2	N	Y	DMP4047LFDE	
60	20	3.5	1.97	110	130	-	-	1 to 3	-	8.2	N	Y	DMP6110SFDF		
250	40	0.26	1.4	14000	18000	-	-	0.5 to 2.5	-	-	N	-	DMP25H18DLFDE		
Dual P+P	12	8	3.9	1.4	-	59	81	115	0.4 to 1	1028	13	Y	-	DMP1055UFDB	
			3.8	1.4	-	75	137	-	0.35 to 1.4	642	8.8	Y	-	DMP2075UFDB	
	20	12	4.5	1.54	-	50	100	150	0.4 to 1	752	9.1	N	-	DMP2065UFDB	
			3.1	1.14	-	75	110	168	0.45 to 1	443	6	N	Y	DMP2110UFDB	
Comp. Pair N+P	12,12	8,8	5.6, 3.8	1.4	-	29, 61	34, 81	44, 115	0.4, 0.4 to 1, 1	914, 915	10.5, 10.7	N	-	DMC1229UFDB	
			5.1, 3.9	1.36	-	34, 59	40, 81	50, 115	0.4, 0.4 to 1, 1	1003, 1028	12.2, 13	Y	-	DMC1030UFDB	
	20, 20	10, 8	6.3, 5	1.4	-	25, 75	35, 140	-	0.5, 0.35 to 1, 1.4	486, 642	5.9, 8.8	Y	Y	DMC2025UFDB	
60, 20	20, 12	0.3, 2.9	0.89	-	4150, 72	4100, 72	-	1, 0.6 to 2.5, 1.25	41, 443	0.4, 7.3	Y	Y	DMC67D8UFDBQ		

The above selection represents some of the products from our extensive range. See diodes.com for our full portfolio.

Suggested DFN2020 Alternatives to Popular SOT223 MOSFETs

Type	V _{DSS} (V)	Diodes Incorporated DFN2020	Infineon SOT223	Nexperia SOT223	ON Semi SOT223	Visay SOT223	
N-Channel	30	DMN3020UFDF	-	-	FDT439N	-	
		DMN3025LFDF	-	-	NDT451AN	-	
	60	DMT6012LFDF	-	BSP318S	BUK7880-55A	HUFA75307T3ST	-
		DMT6013LFDF	-	-	-	NDT3055L	-
		DMN6040SFDE	IRLL2705TRPBF	IRLL024NTRPBF	-	STN4NF06L	-
			IRLL014NTRPBF	-	STN3NF06L	-	
			BSP320S	-	-	-	
			DMT10H032LFDF	-	-	FDT86102LZ	-
	100	DMT10H072LFDF	-	BUK9875-100A	-	-	
		DMN10H170SFDE	IRFL4310TRPBF	BUK98180-100A	IRFM120A	-	
			BSP372N	PMT280ENEA	FQT7N10L	IRFL110, SiHFL110	
		DMN10H220LFDF	-	-	-	-	
P-Channel	20	DMP2035UFDF	-	-	NTF6P02	-	
		-	-	-	FDT434P	-	
	30	DMP3028LFDE	-	-	-	NDT456P	-
			-	-	-	NDT452AP	-
			-	-	-	NTF5P03	-
	60	DMP6250SFDF	-	-	-	NVF2955	IRFL9014, SiHFL9014
			-	-	-	NTF2955	IRFL9110, SiHFL9110
			-	-	-	NDT2955	-

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