

AEC-Q101 qualified MOSFETs, SMD packages in both small leadless and leadless DFN



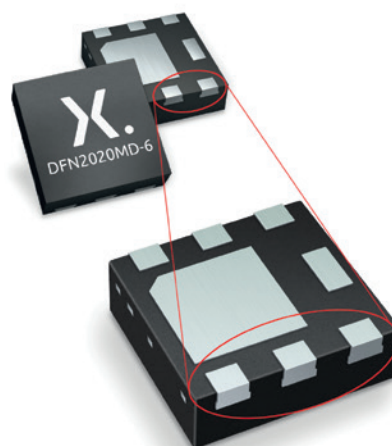
Key features and benefits

- › Broad range of packages for optimum choice
- › Side-wettable flanks for optical solder inspection
 - Leadless packages contain tin plated side contacts for automatic optical inspection (AOI) and improved solder joint quality
- › Replacement of larger packages
 - Performance improvements in wafer technology and in package technology, especially leadless (DFN) packages enable higher electrical and thermal performance on a smaller footprint
- › Automotive compliant (AEC-Q101)
- › Key parameters
 - Most types with 2 kV ESD protection
 - $R_{DS(on)}$ down to 15 m Ω and up to 6 A max drain current
 - V_{DS} voltages of 20 V, 30 V, 40 V, 60 V, 70 V, 80 V and 100 V
 - R_{th} down to < 10 K/W for DFN2020
- › New 'BUK' devices qualified to 175 °C

Applications

- › Body control units
 - doors
 - window lift
 - seat control
- › Entertainment systems
 - car radio
 - navigation
- › Safety and control systems
 - air bag
 - LED lighting

Leadless packages with side-wettable flanks for automatic optical inspection



Small-signal MOSFETs automotive portfolio

*Parts in bold qualified to 175°C

Low R_{DS(on)} MOSFETs

Package				SOT457 (SC-74)				SOT23				DFN2020MD-6 (SOT1220)								
Size (mm)				2.9 x 1.5 x 1.0				2.9 x 1.3 x 1.0				2.0 x 2.0 x 0.65								
P _{tot} (mW)				600				250				1250								
Pol.	V _{DS} (V)	V _{GS} (V)	I _D (A)	V _{GS(th)} min. (V)	V _{GS(th)} max. (V)	ESD (kV)	R _{DS(on)} typ (mΩ) @ V _{GS} =													
							10 V	4.5 V	2.5 V	1.8 V										
N	20	8	7	0.4	1	1	-	15	18	-						PMV15UNE				
			4.7	0.45	1	2	-	24	29	40							PMV28UNE			
			2.8	0.4	1	2	-	64	78	110							PMV65UNE			
		12	12.9	0.4	0.9	2	-	10	12	16								PMPB10XNE		
			11.4	0.4	0.9	2	-	12	15	20								PMPB12UNE		
			7.3	0.6	1.3	2	-	13	17	-							PMV13XNE			
			26	0.6	1.3	2	-	16	21	-									BUK4D16-20	
			6.3	0.75	1.25	2	-	16	24	-								PMV20XNE	PMPB20XNE	
			6	0.4	0.9	1	-	13	23	39								PMV19XNE		
	30	12	11.3	0.4	0.9	2	-	13	14	17								PMPB13XNE		
			5	0.4	0.9	2	-	28	32	37								PMPB29XNE		
			4	0.75	1.25	2	-	55	72	-							PMV50XNE			
		20	8.3	0.6	1.25	1	-	60	98	-									BUK4D60-30	
			23.0	1.0	2.50			16	24										BUK6D16-30E	
			5.5/22	1	2.5	2	17	22	-	-				PMN25ENE	PMV15ENE		BUK6D22-30E			
			3.9/17	1	2.5	2	30	39	-	-				PMV28ENE	PMV28ENE		BUK6D38-30E			
			3.7/11	1	2.5	2	54	70	-	-				PMV52ENE	PMV52ENE		BUK6D72-30E			
			19	1.4	2.1	-	18	22	-	-									BUK9D23-40E	
	40	15	6.2/19	1.3	2.7	-	17	22	-	-				PMN20ENE				BUK6D23-40E		
			19	2.4	4	-	18	-	-	-								BUK7D25-40E		
			5/18	1.5	2.5	2	25	30	-	-				PMN30ENE	PMV30ENE		BUK6D30-40E			
		20	2.7	1	2.5	1	64	79	-	-					PMV60ENE					
			9	1	2.5	1	85	112	-	-									BUK6D120-40E	
			2.5/5.7	1	2.5	1	95	120	-	-					PMV130ENE					
			4.2/13	1.3	2.7	-	32	38	-	-				PMN40ENE				BUK6D43-60E		
			4.7/14	2.4	4	-	36	-	-	-				PMN40SNA				BUK7D36-60E		
			3.5/11	1.3	2.7	2	37	45	-	-				PMN55ENE	PMV37ENE		BUK6D56-60E			
	60	20	11	1.3	2.7	2	59	70	-	-								BUK6D77-60E		
			2.2/7.4	1.3	2.7	2	88	104	-	-				PMN120ENE	PMV88ENE		BUK6D125-60E			
			1.5/5.7	1.3	2.7	2	176	196	-	-				PMN230ENE	PMV164ENE		BUK6D210-60E			
		20	0.8	1.3	2.7	2	300	332	-	-										
			10	1.3	2.7	2	72	84	-	-									BUK6D81-80E	
			7	1.3	2.7	2	175	195	-	-									BUK6D230-80E	
			1.1	1.3	2.7	2	345	390	-	-										
			100	20	1.5	1.3	2.7	2	285	301	-	-			PMN280ENE	PMV280ENE		BUK6D385-100E		
			12	12	11.8	0.47	0.9	-	-	15	17	21							PMPB15XPA	
	P	20	8	5.6	0.45	0.95	2	-	27	38	50								PMV27UPEA	
				2	0.4	0.9	-	-	97	118	145								BSH205G2A	
				2	0.5	1.1	-	-	100	155	210									
			2.3	0.45	0.95	-	-	120	150	200									BSH205G2	
			12	10.3	0.47	0.9	2	-	19	22	28									
				5	0.47	0.9	2.3	-	28	31	36									PMPB20XPEA
				5.3	0.75	1.25	2	-	28	42	-									PMPB29XPEA
				5	0.6	1.3	1	-	38	-	-									
				5.2/18	0.6	1.3	1	-	38	64	-				PMN30XPEA	PMV30XPEA				
				5	0.47	0.9	2	-	39	45	56				PMN30XPA	PMV28XPEA		BUK4D38-20P		
				5.7	0.75	1.25	2	-	41	56	-									PMPB43XPEA
				3.5	0.75	1.25	-	-	48	71	-									
				4.7	0.6	1.3	1	-	50	78	-									
30			20	4.4	0.6	1.3	-	-	55	-	-									
				3.3	0.75	1.25	2	-	67	99	-									
		2.4		1	2.5	2	-	97	147	-										
		6.7	1	1.3	1	-	110	189	-									BUK4D110-20P		
		8.8	1	2.5	-	24	32	-	-									PMPB27EPA		
		4.2	1	3	2	35	47	-	-											
40		20	1.5	1	2.5	1	180	220	-	-										
			14	1.4	2.7	-	30	45	-	-										
			8	1.9	3.2	-	95	125	-	-										
		60	3	1.9	3.2	-	130	180	-	-										
														PMN100EPA	PMV100EPA					

High R_{DS(on)} MOSFETs

Package				SOT23				SOT363 (SC-88)				SOT323 (SC-70)				DFN1110D-3 (SOT8015)				
Size (mm)				2.9 x 1.3 x 1.0				2.0 x 1.25 x 0.95				2.0 x 1.25 x 0.95				1.1 x 1.0 x 0.47				
P _{tot} (mW)				250				300				200				420				
Pol.	V _{DS} (V)	V _{GS} (V)	I _D (A)	V _{GS(th)} min. (V)	V _{GS(th)} max. (V)	ESD (kV)	R _{DS(on)} typ (mΩ) @ V _{GS} =													
							10 V	4.5 V	2.5 V	1.8 V										
N	30	8	0.4	0.6	1.1	2	-	1000	1400	2000										
			16	0.72	1.3	2.6	1	850	1100	-										
		60	0.36	0.48	1.6	1.5	1000	1100	1400	-									2N7002KQB	
	0.3		1	2.5	2	1000	1300	-	-											
	0.3		1.3	2.6	0.5	2200	2500	-	-											
	P	30	8	0.23	0.6	1.1	2	-	2800	5300	-									
12				0.27	1.1	2.1	1	7500	8500	-										
20				0.2	1.1	2.1	1	5300	6000	-	-									
50		20	0.2	1.1	2.1	1	5300	6000	-	-										
		8	0.3	0.4	0.9	2	-	100	118	145										
			2	0.5	1.1	-	-	100	155	210										
			2.3	0.45	0.95	-	-	120	150	200										

Complementary & dual MOSFETs

Package				SOT363 (SC-88)				SOT363 (SC-88)				DFN2020D-6 (SOT1118D)							
Size (mm)				2.0 x 1.25 x 0.95				2.0 x 1.25 x 0.95											
Pol.	V _{DS} (V)	V _{GS} (V)	I _D (A)	V _{GS(th)} min. (V)	V _{GS(th)} max. (V)	ESD (kV)	R _{DS(on)} typ (mΩ) @ V _{GS} =												
							4.5 V	2.5 V	1.8 V										
N	Compl.	30	8	0.35	0.6	1.1	2	1000	1400	2000									
P		30	8	0.2	0.6	1.1	2	2800	5300	-									
N		20	8	725	1	6	2	290	420	1									
P		20	8	500	1	18	2	670	1	2									PMPGD290UCEA
N		Dual	N	30	12	4	1	1	2	55	72								PMPDPB56XNEA

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Date of release:
September 2023

