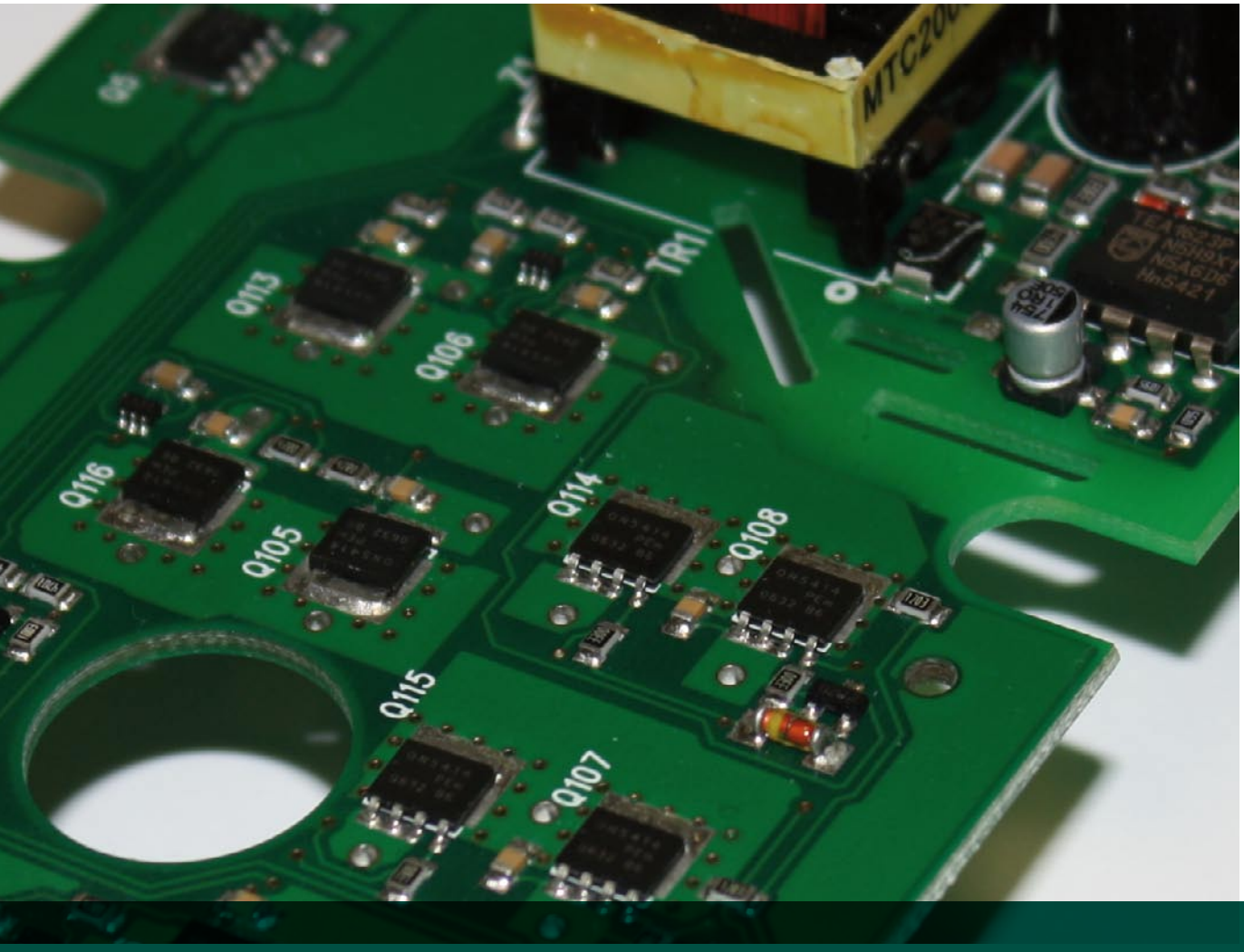

Power MOSFET Selection Guide 2009

Smaller, faster, cooler

founded by Philips

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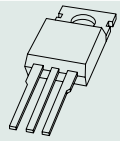
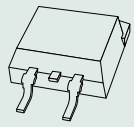
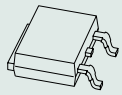
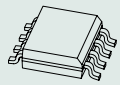
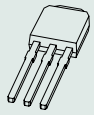
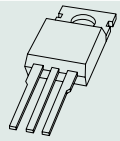
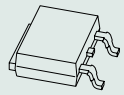
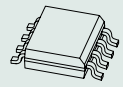
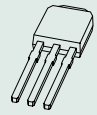
12 V – 25 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	SO8 (SOT96-1)	
									
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	4.9 x 3.9 x 1.75	
12		34	5.7						
20	2.65	3.7	100	PH3120L					
20	34	40	5.7						
20	65	82	4.1						
20		2.7	100	PH2520U					
20		5	32					PSMN006-20K	
20		28	6.3						
20		34	5.7						
20		36	5.7						
20		37	5.9						
20		85	3.76						
20		85	2.5						
20		200	1.05						
20		300	2.28						
20		340	2.15						
20		340	1.02						
20		340	0.98						
20		340	0.87						
20		350	1						
20		350	0.97						
20		16 @ 5 V	44.7				PHD38N02LT		
20		350	0.86						
20		20 @ 5 V	10.9					PHKD6N02LT	
25	1.2	1.85	100	**PSMN1R2-25YL**					
25	1.5	2.2	100	**PSMN1R5-25YL**					
25	2.5	3.9	100	PH2525L					
25	2.8	4.1	100	PH2625L					
25	4		99	PH4025L					
25	4.95		75				PHD96NQ03LT		
25	5.5	8.2	81.7	PH5525L					
25	5.8		75				PSMN005-25D		
25	6		75				PHD108NQ03LT		
25	6.3	9.5	78.7	PH6325L					
25	6.3	10.6	75				PHD97NQ03LT		
25	6.6		75						
25	9	13	66	PH9025L					
25	9		66.4				PHD78NQ03LT		
25	9		61		PHP78NQ03LT				
25	9.5		75				PHD77NQ03T		
25	10.5		66			PHB66NQ03LT	PHD66NQ03LT		
25		3	100	PH2925U					

Types in **bold red** represent new products

		Small Signal Packages					
	IPAK (SOT533)	SC-74 (SOT457)	TO-236AB (SOT23)	SC-70 (SOT323)	SC-88 (SOT363)	SC-75 (SOT416)	SC-101 (SOT883)
							
	6 x 6.6 x 2.3	2.9 x 1.5 x 1	2.9 x 1.3 x 1	2 x 1.25 x 0.95	2 x 1.25 x 0.95	1.6 x 0.8 x 0.77	1 x 0.6 x 0.5
		PMN28UN					
		PMN34LN					
		PMN55LN					
		PMN23UN					
		PMN27UN					
			PMV30UN				
			PMV31XN				
			PMV56XN				
			SI2302DS				
			BSH105				
							PMZ250UN
							PMZ270XN
				PMF280UN			
						PMR280UN	
					PMGD280UN		
				PMF290XN			
						PMR290XN	
					PMGD290XN		
	PHU97NQ03LT						
	PHU78NQ03LT						
	PHU77NQ03T						

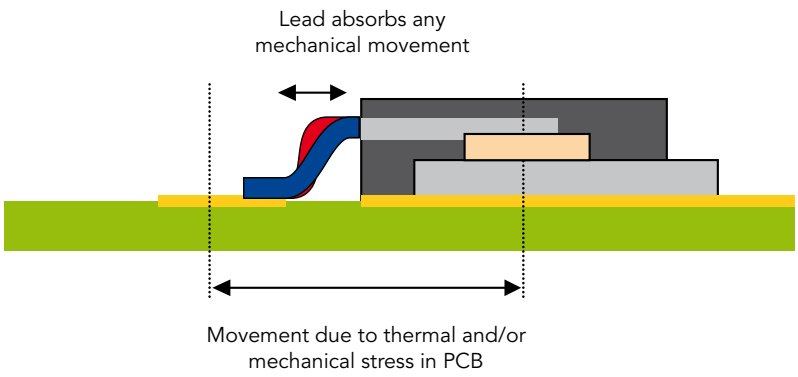
30 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	DPAK (SOT428)	SO8 (SOT96-1)	IPAK (SOT533)
								
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	6 x 6.6 x 2.3	4.9 x 3.9 x 1.75	6 x 6.6 x 2.3
30	1.3	1.95	100	**PSMN1R3-30YL**				
30	1.7	2.1	100		**PSMN1R6-30PL**			
30	1.7	2.6	100	**PSMN1R7-30YL**				
30	1.8				***PSMN1R8-30PL***			
30	2	3.2	100	**PSMN2R0-30YL**				
30	2.1	2.8	100		**PSMN2R0-30PL**			
30	2.4	3.9	100	**PSMN2R5-30YL**				
30	2.7				***PSMN2R7-30PL***			
30	2.8		75		PSMN003-30P			
30	3	4.8	100	**PSMN3R0-30YL**				
30	3.2		100	PH3230S				
30	3.3	4.5	100	PH3330L				
30	3.4				***PSMN3R4-30PL***			
30	3.5	5.6	100	**PSMN3R5-30YL**				
30	3.8		98	PH3830L				
30	4	6.5	99	**PSMN4R0-30YL**				
30	4.3	6.2	100		**PSMN4R3-30PL**			
30	4.3		95.9	PH4330L				
30	4.4		30.4				PHK31NQ03LT	
30	4.8		84	PH4830L				
30	5	8	84	**PSMN5R0-30YL**				
30	5.5		20 @ 80 °C				PSMN005-30K	
30	5.5		75		PHP101NQ03LT	PHD101NQ03LT		PHU101NQ03LT
30	5.7		80	PH5330E				
30	5.9		76.7	PH8030L				
30	6	9.7	76.7	PH6030L				
30	6	9.7	73	**PSMN6R0-30YL**				
30	6.5		23.7				PHK28NQ03LT	
30	7	11.3	65	**PSMN7R0-30YL**				
30	7.9	11	68	PH7030L				
30	8	13.8	55	**PSMN9R0-30YL**				
30	8.2		67	PH8230E				
30	8.9		20.3				PHK18NQ03LT	
30	9	12.5	63	PH9030L				
30	9.9		63	PH9930L				

Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

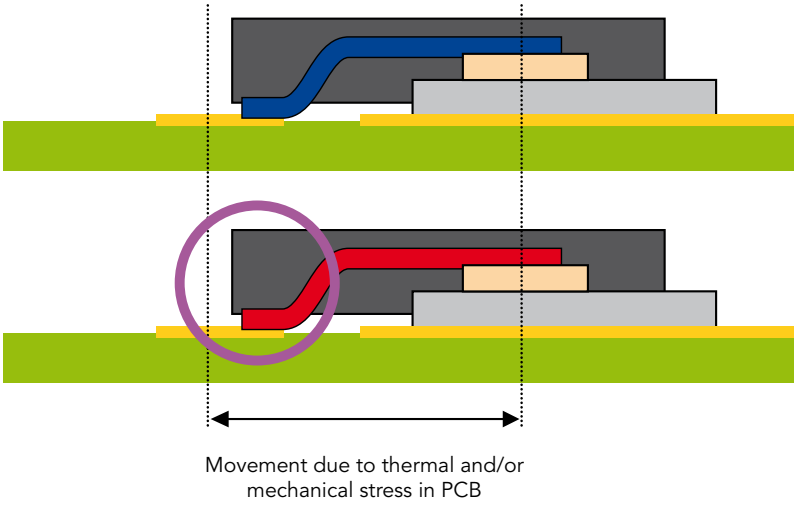
LFPAK for mechanical & thermal ruggedness

NXP LFPAK



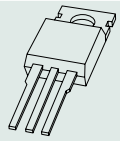
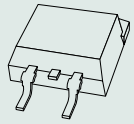
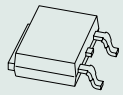
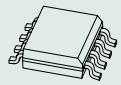
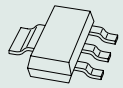
LFPAK pins provide compliance and allow for thermal expansion due to temperature difference between the MOSFET & PCB and also mechanical strain due to PCB bending & flexing

QFN Based Power-S08



QFN sawn or micro-lead pins are fully encapsulated and do not allow for movement. Cracks in the mould compound can lead to moisture ingress & ionic contamination causing early failure of the MOSFET

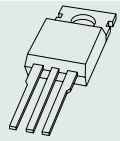
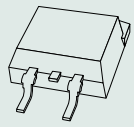
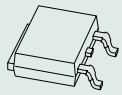
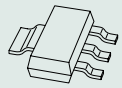
30 V – 36 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	SO8 (SOT96-1)	SC-73 (SOT223)	
									
				15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	4.9 x 3.9 x 1.75	6.5 x 3.5 x 1.65	
30	10		75			PHD71NQ03LT			
30	13		68.9			PHD63NQ03LT			
30	13.5	20	10				SI4410DY		
30	17		43.4	PHP36N03LT		PHD36N03LT			
30	20	26	13.8				PHK13N03LT		
30	20	26	10.4				PHKD13N03LT		
30	22.0			***PSMN022-30PL***					
30	30		10					BSP030	
30	30		6.3				PHN203		
30	38	45	5.4						
30	38	46	5.4						
30	40	50	5.2						
30	42	54	5.4						
30	47	60	4.6						
30	55	72	4.7						
30	100	200	3.2					BSP100	
30	100	200	3.4				PHN210		
30	100	200	3.4				PHN210T		
30	117	190	2.5						
30	117	190	1.7						
30	120		1.9						
30		14	11.8				PHK12NQ03LT		
30		46	4.9						
30		47	4.9						
30		400	0.85 @ 80 °C						
30		420	1.87						
30		440	0.96						
30		440	0.87						
30		440	0.84						
30		460	1.78						
30		480	0.83						
30		480	0.8						
30		440	0.74						
30		480	0.71						
30		8000 @ 4 V	0.125						
36	4		75		PSMN004-36B				

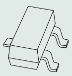
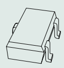
Types in ***bold red italic underline*** represent products in development

Small Signal Packages						
	SC-74 (SOT457)	TO-236AB (SOT23)	SC-70 (SOT323)	SC-88 (SOT363)	SC-75 (SOT416)	SC-101 (SOT883)
	2.9 x 1.5 x 1	2.9 x 1.3 x 1	2 x 1.25 x 0.95	2 x 1.25 x 0.95	1.6 x 0.8 x 0.77	1 x 0.6 x 0.5
	PMN40LN					
	PMN38EN					
	PMN45EN					
		PMV45EN				
	PMN49EN					
		PMV60EN				
		PMV117EN				
		SI2304DS				
		BSH108				
	PMN34UN					
		PMV40UN				
		BSH103				
						PMZ350XN
				PMG370XN		
			PMF370XN			
					PMR370XN	
						PMZ390UN
			PMF400UN			
					PMR400UN	
				PMGD370XN		
				PMGD400UN		
				PMGD8000LN		

40 V – 55 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	SC-73 (SOT223)	
									
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	6.5 x 3.5 x 1.65	
40	2			***PSMN2R0-40YS***					
40	2.1		100		**PSMN2R2-40PS**				
40	2.8				***PSMN2R8-40PS***				
40	2.8		100	**PSMN2R6-40YS**					
40	3.3			***PSMN3R3-40YS***					
40	4.1		94.5	PH4840S					
40	4.2		100	**PSMN4R0-40YS**					
40	4.3		75		PHP176NQ04T				
40	4.6		100		**PSMN4R5-40PS**				
40	5.2		75		PHP143NQ04T				
40	5.7			***PSMN5R8-40YS***					
40	7.6		77		**PSMN8R0-40PS**				
40	8		75		PHP101NQ04T	PHB101NQ04T			
40	8.6		70	**PSMN8R3-40YS**					
40	14			***PSMN014-40YS***					
50	15000		0.173						
55	3.7		75		PHP191NQ06LT	PHB191NQ06LT			
55	5.8		75		PSMN005-55P	PSMN005-55B			
55	7		75		PHP110NQ06LT	PHB110NQ06LT			
55	7.1		75		PHP119NQ06T	PHB119NQ06T			
55	8.3	9.9	62.5	PH955L					
55	10.5		75				PSMN010-55D		
55	17.3	21	40	PH1955L					
55	20		54		PHP54N06T				
55	36	45	24	PH3855L					
55	70		19		PHP21N06LT	PHB21N06LT	PHD21N06LT		
55	75		21		PHP21N06T				
55	75		20.3		PHP20N06T	PHB20N06T			
55	77		18				PHD20N06T		
55	150		5.5					PHT6N06T	
55		4000	0.335						
55		4000	0.3						
55		40 @ 5 V	4.9					PHT11N06LT	
55		80 @ 5 V	3.5					PHT8N06LT	
55		150 @ 5 V	2.5					PHT6N06LT	

Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

Small Signal Packages		
	TO-236AB (SOT23)	SC-70 (SOT323)
		
	2.9 x 1.3 x 1	2 x 1.25 x 0.95
	BSN20	
	BSH111	
		BSH121

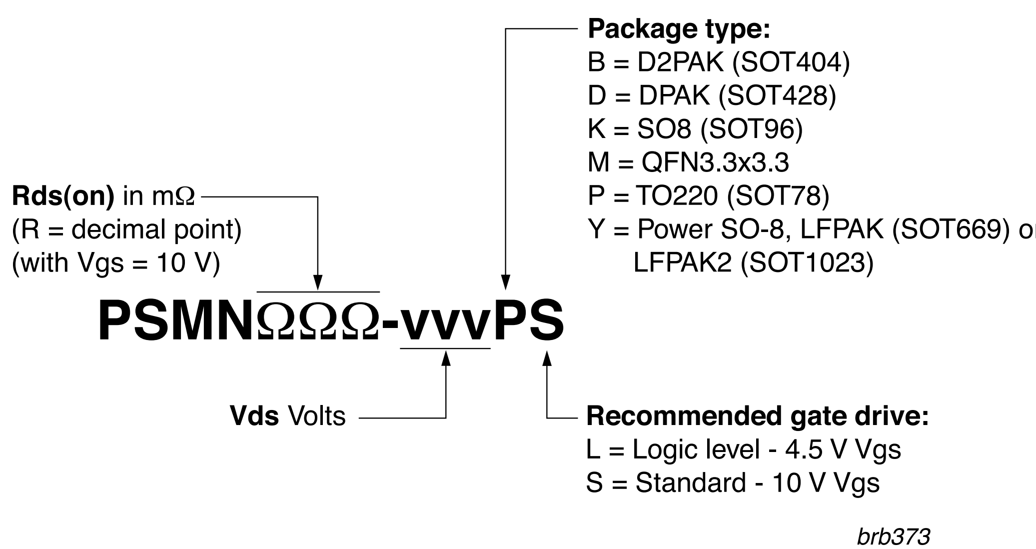
MOSFETs for high efficiency power management

Smaller, faster, cooler

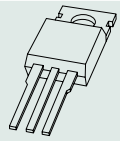
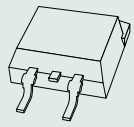
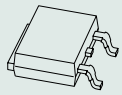
- Class leading LFPAK package with state of the art Trench 6 silicon technology
  - **Smaller:** Power-SO8 form factor LFPAK
  - **Faster:** Best in class switching performance
  - **Cooler:** Higher efficiency equals lower temperatures
  - **Easier:** easier to use in development and production than other Power-SO8 packages

High performance MOSFETs for DC-DC converters, OR-ing and load switching

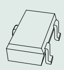
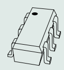
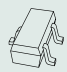
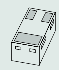
- Supported by Secure supply/Capacity availability (Silicon & Package)



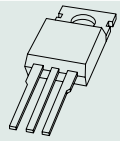
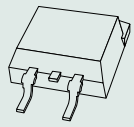
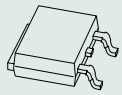
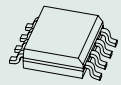
60 V – 80 V N-channel MOSFETs

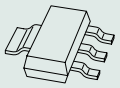
V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	TO-236AB (SOT23)	
									
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	2.9 x 1.3 x 1	
60	3.6		75			PSMN004-60B			
60	22		52		PHP52N06T				
60	150		10.3		PHP3055E		PHD3055E		
60	900	1600	1.22						
60	920	1400	0.57						
60	920	1400	0.55						
60	920	1400	0.49						
60	2000	4000	0.475					2N7002F	
60	3000	4000	0.385					2N7002E	
60	3900	5300	0.34					2N7002K	
60	4500	5300	0.26						
60	5000	5300	0.3					2N7002	
60	5000	5300	0.3					BSH112	
60	5000	5300	0.3					PMBF170	
60		43	34		PHP32N06LT	PHB32N06LT			
75	5		75		PHP165NQ08T				
75	5		75		PSMN005-75P	PSMN005-75B			
75	5.6		75		PHP160NQ08T	PHB160NQ08T			
75	8.5		75		PSMN008-75P	PSMN008-75B			
75	9		75		PHP110NQ08T	PHB110NQ08T			
75	13		75		PHP75NQ08T				
75	16		73		PHP79NQ08LT				
75	16.5		45.8	PH1875L					
75	28	34	30	PH3075L					
75	50 @ 11 V		27		PHP29N08T	PHB29N08T			
80	4.1		100		**PSMN4R4-80PS**				
80	4.7		100		**PSMN5R0-80PS**				
80	6.4			***PSMN6R0-80YS***					
80	6.5				***PSMN6R5-80PS***				
80	8.5		82	**PSMN8R2-80YS**					
80	8.7				***PSMN8R7-80PS***				
80	11			***PSMN011-80YS***					
80	11		74		**PSMN012-80PS**				
80	12.9		60	**PSMN013-80YS**					
80	17.0				***PSMN017-80PS***				
80	19.5			***PSMN018-80YS***					
80	27.5		34	**PSMN026-80YS**					
80	46			***PSMN045-80YS***					
80	46		22		**PSMN050-80PS**				

Types in **bold red** represent new products
Types in ***bold red itallic underline*** represent products in development

Small Signal Packages				
	SC-70 (SOT323)	SC-88 (SOT363)	SC-75 (SOT416)	SC-101 (SOT883)
				
	2 x 1.25 x 0.95	2 x 1.25 x 0.95	1.6 x 0.8 x 0.77	1 x 0.6 x 0.5
				PMZ760SN
	PMF780SN			
			PMR780SN	
		PMGD780SN		
	PMF3800SN			

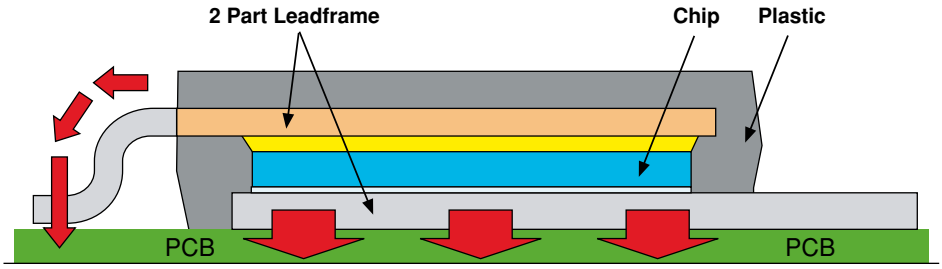
100 V – 110 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	SO8 (SOT96-1)	
									
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	4.9 x 3.9 x 1.75	
100	8.8		75		PSMN009-100P	PSMN009-100B			
100	15		75		PSMN015-100P	PSMN015-100B			
100	23		34.3	PH20100S					
100	25		47		PHP45NQ10T	PHB45NQ10T			
100	25		47		PHP45NQ10TA				
100	25		47				PSMN025-100D		
100	28		47			PHB47NQ10T			
100	28		11.6					PHK12NQ10T	
100	38		6.3 @ 80 °C					PSMN038-100K	
100	40		35				PHD34NQ10T		
100	50		28			PHB27NQ10T			
100	90		18		PHP18NQ10T	PHB18NQ10T	PHD18NQ10T		
100	90		3						
100	90		3					PHKD3NQ10T	
100	250		3.5						
100	250		1.9						
100	500		0.85						
100	6000		0.15						
100		250 @ 5 V	3.5						
100		10000 @ 5 V	0.52						
100		10000 @ 5 V	0.19						
105	25		47		PHP45NQ11T				
110	15		75		PSMN015-110P				
110	40		35		PHP34NQ11T				
110	50		27.6		PHP27NQ11T				
110	70		23		PHP23NQ11T				
110	90		18		PHP18NQ11T				

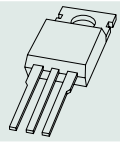
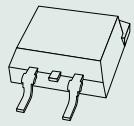
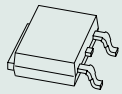
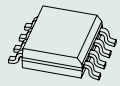
	Small Signal Packages	
	SC-73 (SOT223)	TO-236AB (SOT23)
		
	6.5 x 3.5 x 1.65	2.9 x 1.3 x 1
	PHT6NQ10T	
	PHT4NQ10T	
		PMV213SN
		BSH114
		BSS123
	PHT4NQ10LT	
	BSP110	
		BST82

Power-SO8 (LFPAK) Design

- Low Thermal resistance
- Low Electrical resistance
- Low Inductance



150 V – 300 V N-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Power-SO8 (LFPAK)	TO-220AB (SOT78)	D2PAK (SOT404)	DPAK (SOT428)	SO8 (SOT96-1)	
									
				3.95 x 4.9 x 1.1	15.6 x 10 x 4.4	11 x 10 x 4.3	6 x 6.6 x 2.3	4.9 x 3.9 x 1.75	
150	30		55.5		PSMN030-150P	PSMN030-150B			
150	35		50		PSMN035-150P	PSMN035-150B			
150	42		45.1			PHB45NQ15T			
150	59		43	PSMN059-150Y					
150	63		29		PHP30NQ15T		PSMN063-150D		
150	65		28.5		PHP28NQ15T				
150	75		5					PHK5NQ15T	
150	85		3.5 @ 80 °C					PSMN085-150K	
200	57		39		PSMN057-200P	PSMN057-200B			
200	70		35		PSMN070-200P	PSMN070-200B			
200	77		32.7		PHP33NQ20T	PHB33NQ20T			
200	102		21.5	PSMN102-200Y					
200	130		20		PHP20NQ20T	PHB20NQ20T	PSMN130-200D		
200	165		2.9 @ 80 °C					PSMN165-200K	
200	294		8.8						
200	400		8.7		PHP9NQ20T		PHD9NQ20T		
200	2500		0.55						
220	386		7.3						
240	5000	7500	0.375						
250	5000		0.375						
300	6000		0.35						

Package type:
B = D2PAK (SOT404)
D = DPAK (SOT428)
K = SO8 (SOT96)
M = QFN3.3x3.3
P = TO220 (SOT78)
Y = Power SO-8, LFPAK (SOT669) or LFPAK2 (SOT1023)

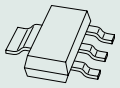
Rds(on) in mΩ
(R = decimal point)
(with Vgs = 10 V)

PSMNΩΩΩ-vvvPS

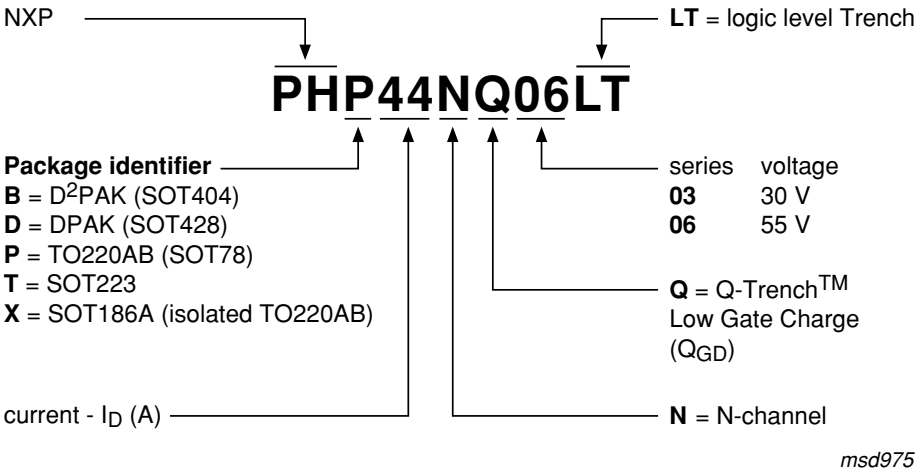
Vds Volts

Recommended gate drive:
L = Logic level - 4.5 V Vgs
S = Standard - 10 V Vgs

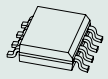
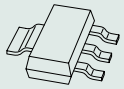
brb373

		Small Signal Packages
	HVSON8 (SOT873-1)	SC-73 (SOT223)
		
	3.3 x 3.3 x 0.85	6.5 x 3.5 x 1.65
	PML260SN	
		BSP122
	PML340SN	
		BSP89
		BSP126
		BSP130

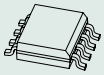
TrenchMOS - PH types part numbering



P-channel MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C		Small Signal Packages		
				SO8 (SOT96-1)	SC-73 (SOT223)	SC-74 (SOT457)	TO-236AB (SOT23)
							
				4.9 x 3.9 x 1.75	6.5 x 3.5 x 1.65	2.9 x 1.5 x 1	2.9 x 1.3 x 1
-12		400	-0.75				BSH205
-16		120	-4.66	PHK04P02T			
-20		50	-7.9	PMK50XP			
-20		60	-4.8			PMN50XP	
-20		76	-3.9				PMV65XP
-30	19		-14.9	PMK30EP PMK35EP			
-30	250	400	-3 @ 100 °C		BSP250		
-30	900	1350	-0.52				BSH202
-30		900	-0.47				BSH203
-50	10000		-0.13				BSS84
-60	2500	3750	-0.3				BSH201
-200	12000		-0.225		BSP220		
-250	15000		-0.225		BSP225		
-300	17000		-0.21		BSP230		

Multi-chip MOSFETs

V_{DS} [max] [V]	R_{DSon} [max] [mΩ] @ V_{gs} = 10 V	R_{DSon} [max] [mΩ] @ V_{gs} = 4.5 V	I_D [max] [A] @ 25 °C	Configuration	SO8 (SOT96-1)	Small Signal Packages SC-88 (SOT363)
						
					4.9 x 3.9 x 1.75	2 x 1.25 x 0.95
20		350	0.86	dual N-channel		PMGD290XN
20		20 @ 5 V	10.9	dual N-channel	PHKD6N02LT	
30	20	26	10.4	dual N-channel	PHKD13N03LT	
30	30		6.3	dual N-channel	PHN203	
30	100	200	3.4	dual N-channel	PHN210 PHN210T	
30, -30	100, 250		3.5, -2.3 @ 80 °C	complementary pair	PHC21025	
-30	250		-2.3 @ 80 °C	dual P-channel	PHP225	
30		440	0.74	dual N-channel		PMGD370XN
30		480	0.71	dual N-channel		PMGD400UN
30		8000 @ 4 V	0.125	dual N-channel		PMGD8000LN
60	920	1400	0.49	dual N-channel		PMGD780SN
100	90		3	dual N-channel	PHKD3NQ10T	
300, -300	6000, 17000		0.34, -0.235 @ 80 °C	complementary pair	PHC2300	

30 V N-channel Automotive TrenchMOS

R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	I2PAK (SOT226)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1
1.5		100	0.45			***BUK661R5-30C***		
1.7			0.45	***BUK651R7-30C***	***BUK6E1R7-30C***			
1.8		100	0.45			BUK761R8-30C		
1.8		100	0.57			***BUK661R8-30C***		
2.1			0.59	***BUK652R1-30C***				
2.4	2.8	75	0.5	BUK952R8-30B		BUK962R8-30B		
2.5			0.74			***BUK662R5-30C***		
2.7		75	0.5	BUK752R7-30B	BUK7E2R7-30B	BUK762R7-30B		
2.7			0.74	***BUK652R7-30C***				
3	4	75	0.59		BUK9E04-30B			
3.4		75	0.59	BUK753R4-30B		BUK763R4-30B		
3.5			0.95			***BUK663R5-30C***		
3.7			0.95	***BUK653R7-30C***				
4.2	7	75	1.42					***BUK9Y07-30B***
4.5		75	0.95				***BUK624R5-30C***	
4.5		75	0.95				**BUK724R5-30C**	
4.6	5	75	0.65	BUK9505-30A		BUK9605-30A		
5	7	75	0.95	BUK9507-30B		BUK9607-30B	BUK9207-30B	
7		75	1.42					***BUK7Y07-30B***
7		75	0.95	BUK7507-30B		BUK7607-30B	BUK7207-30B	
9	11	59	2					BUK9Y11-30B
10		66	1.76					***BUK7Y10-30B***
11	13	75	1				BUK9213-30A	
12	14	63	1.4				BUK9214-30A	
13		55	1.4				BUK6213-30A	
13.7	22	37	2.53					***BUK9Y22-30B***
20		39	2.53					***BUK7Y20-30B***

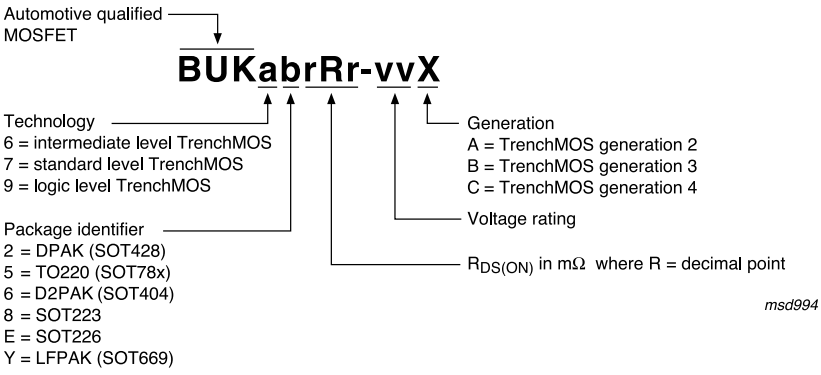
Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

40 V N-channel Automotive TrenchMOS

R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	I2PAK (SOT226)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1
1.9		100	0.45			***BUK661R9-40C***		
2		100	0.45	***BUK652R0-40C***	***BUK6E2R0-40C***	BUK762R0-40C		
2.3		100	0.45	BUK752R3-40C	BUK7E2R3-40C			
2.4			0.59			***BUK662R4-40C***		
2.6		100	0.59	***BUK652R6-40C***				
2.8	3.2	100	0.5	BUK953R2-40B	BUK9E3R2-40B	BUK963R2-40B		
3.1		75	0.5	BUK753R1-40B		BUK763R1-40B		
3.2		100	0.74			***BUK663R2-40C***		
3.4		100	0.74	***BUK653R4-40C***	***BUK6E3R4-40C***			
3.6		100	0.74			***BUK763R6-40C***		
4		100	0.74	***BUK754R0-40C***				
4	4.4	75	0.5	BUK9504-40A	BUK9E04-40A	BUK9604-40A		
4	4.4	75	0.59	BUK954R4-40B	BUK9E4R4-40B	BUK964R4-40B		
4.3		75	0.59	BUK754R3-40B		BUK764R3-40B		
4.5		75	0.5	BUK7504-40A	BUK7E04-40A	BUK7604-40A		
4.6			0.95			***BUK664R6-40C***		
4.8			0.95	***BUK654R8-40C***				
5			0.95				***BUK625R0-40C***	
5	6.4	75	0.74	BUK9506-40B		BUK9606-40B		
5		75	0.95				**BUK725R0-40C**	
5.2		75	0.74	BUK755R2-40B		BUK765R2-40B		
6.2	9	37	1.42					***BUK9Y09-40B***
7	9	75	0.95	BUK9509-40B		BUK9609-40B	BUK9209-40B	
8		75	0.95	BUK7508-40B		BUK7608-40B		
8		75	1.42					***BUK7Y08-40B***
8		75	0.95				BUK7208-40B	
11	14	56	1.8					BUK9Y14-40B
13		58	1.8					BUK7Y13-40B
18.7	27	34	2.53					***BUK9Y27-40B***
25		35	2.53					***BUK7Y25-40B***

Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

Automotive TrenchMOS part numbering



55 V N-channel Automotive TrenchMOS

R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	I2PAK (SOT226)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1
2.6		100	0.45			***BUK762R6-55C***		
2.7			0.45			***BUK662R7-55C***		
3			0.59	***BUK653R0-55C***	***BUK6E3R0-55C***			
3.2		100	0.45	***BUK753R2-55C***				
3.5			0.59	***BUK653R5-55C***		***BUK663R5-55C***		
3.7	4.2	75	0.5	BUK954R2-55B		BUK964R2-55B		
4		75	0.5			BUK764R0-55B		
4		75	0.5	BUK754R0-55B				
4.6			0.74	***BUK654R6-55C***		***BUK664R4-55C***		
5.4	6	75	0.58	BUK9506-55B	BUK9E06-55B	BUK9606-55B		
5.8	6.3	75	0.58		BUK9E06-55A	BUK9606-55A		
6		75	0.59	BUK7506-55B		BUK7606-55B		
6.3		75	0.5	BUK7506-55A		BUK7606-55A		
7			0.95	***BUK6507-55C***		***BUK6607-55C***	***BUK6207-55C***	
7	8.4	75	0.74	BUK9508-55B	BUK9E08-55B	BUK9608-55B		
7.1		75	0.74	BUK7507-55B	BUK7E07-55B	BUK7607-55B		
7.5	8	75	0.59			BUK9608-55A		
8	9	75	0.71			BUK9609-55A		
8		75	0.59	BUK7508-55A		BUK7608-55A		
9	10	75	0.75	BUK9510-55A		BUK9610-55A		
9		75	0.71	BUK7509-55A		BUK7609-55A		
9.2	12	65	1.42					***BUK9Y12-55B***
10	11	75	0.9	BUK9511-55A		BUK9611-55A		
10	12	75	0.95	BUK9512-55B		BUK9612-55B	BUK9212-55B	
10		75	0.5	BUK7510-55AL		BUK7610-55AL	BUK7210-55B	
11		75	0.95	BUK7511-55B	BUK7E11-55B	BUK7611-55B		
12		75	0.95				BUK7212-55B	
12		64	1.42					***BUK7Y12-55B***
13	14	73	1	BUK9514-55A		BUK9614-55A		
13.6	15	62	1.3				BUK9215-55A	
14		73	0.9	BUK7514-55A		BUK7614-55A		
15	16	66	1.1	BUK9516-55A				
15		62	1.3				BUK7215-55A	
16		65	1.1	BUK7516-55A				

Types in ***bold red italic underline*** represent products in development

55 V N-channel Automotive TrenchMOS

R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)	SC-73 (SOT223)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1	6.5 x 3.5 x 1.65
16	18	61	1.1	BUK9518-55A	BUK9618-55A			
17.3	19	46	1.8				BUK9Y19-55B	
17.6	19	55	1.3			BUK9219-55A		
18	20	54	1.2	BUK9520-55A	BUK9620-55A			
18		47	1.76				***BUK7Y18-55B***	
19		55	1.3			BUK7219-55A		
20		54	1.2	BUK7520-55A	BUK7620-55A			
20	22	48	1.5			BUK9222-55A		
21.7	24	46	1.4	BUK9524-55A	BUK9624-55A			
22		48	1.5			BUK7222-55A		
22	25	43	1.6			BUK9225-55A		
25		43	1.6			BUK7225-55A		
25	28	42	1.56		BUK9628-55A			
27	30	38	1.7			BUK9230-55A		
28		42	1.5	BUK7528-55A	BUK7628-55A			
29	32	12	15					BUK9832-55A
30		38	1.7			BUK7230-55A		
32	35	34	1.8	BUK9535-55A	BUK9635-55A			
33	37	32	1.94			BUK9237-55A		
35		35	1.75	BUK7535-55A	BUK7635-55A			
35		28	2.53				***BUK7Y35-55B***	
36	40	26	2.5				BUK9Y40-55B	
37		32	1.9			BUK7237-55A		
40	45	28	2.1			BUK9245-55A		
68	75	20	2.4	BUK9575-55A	BUK9675-55A			
69	77	18	3			BUK9277-55A		
73	80	7	15					BUK9880-55A
75		20	2.4	BUK7575-55A	BUK7675-55A			
77		18	2.9			BUK7277-55A		
80		7	15					BUK7880-55A
125	140	11	4.1			BUK92150-55A		
137	150	13	2.8	BUK95150-55A				
137	150	5.5	15					BUK98150-55A
150		11	4.1	BUK75150-55A		BUK72150-55A		
150		5.5	15					BUK78150-55A

Types in ***bold red italic underline*** represent products in development

75 V N-channel Automotive TrenchMOS

R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	I2PAK (SOT226)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1
3.7			0.45			***BUK663R7-75C***		
4			0.45	***BUK654R0-75C***	***BUK6E4R0-75C***			
4		100	0.45			BUK764R0-75C		
4.3		100	0.45	BUK754R3-75C	BUK7E4R3-75C			
4.8			0.59			***BUK664R8-75C***		
5			0.59	***BUK655R0-75C***				
5.5	6.1	75	0.5	BUK9506-75B		BUK9606-75B		
5.6		75	0.5	BUK7506-75B		BUK7606-75B		
7		100	0.74	***BUK6507-75C***		***BUK6607-75C***		
8.5	9	75	0.65	**BUK9509-75A**		BUK9609-75A		
9		75	0.65	BUK7509-75A		BUK7609-75A		
10		71	0.95	***BUK6510-75C***		***BUK6610-75C***		
11			0.95				***BUK6211-75C***	
13		75	0.95	BUK7513-75B		BUK7613-75B		
14		70	0.95				BUK7214-75B	
14	16.4	67	0.95	BUK9516-75B		BUK9616-75B		
15	17	64	0.95				BUK9217-75B	
16.2	19	48	1.42					***BUK9Y19-75B***
18		49	1.42					***BUK7Y18-75B***
22	23	53	1.1	BUK9523-75A		BUK9623-75A		
23		53	1.1	BUK7523-75A		BUK7623-75A		
24.6	26	45	1.3				BUK9226-75A	
26		45	1				BUK7226-75A	
28		35	1.76					***BUK7Y28-75B***
28	30	34	1.8					BUK9Y30-75B
49.8	58	20	2.53					***BUK9Y58-75B***
54		21	2.53					***BUK7Y54-75B***

Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

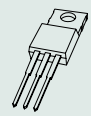
100 V N-channel Automotive TrenchMOS

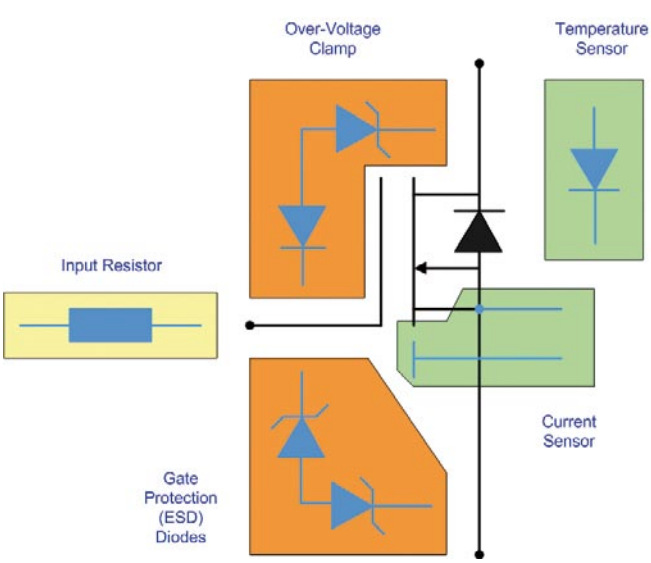
R_{DSon} (max) @ 10 V (mΩ)	R_{DSon} (max) @ 5 V (mΩ)	I_D (max) @ 25 °C (A)	$R_{th(j-mb)}$ (max) (K/W)	3-lead TO-220AB (SOT78A)	D2PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)	SC-73 (SOT223)
				15.5 x 10.0 x 4.3	11.0 x 10.0 x 4.3	6.0 x 6.6 x 2.3	3.95 x 4.9 x 1.1	6.5 x 3.5 x 1.65
9.7	10	75	0.5	BUK9510-100B	BUK9610-100B			
10		75	0.5	BUK7510-100B	BUK7610-100B			
14.4	15	75	0.65	BUK9515-100A	BUK9615-100A			
15		75	0.65	BUK7515-100A				
18.5	20	63	0.75	BUK9520-100B	BUK9620-100B			
19		64	0.75		BUK7619-100B			
19	20	63	0.75	BUK9520-100A				
20		63	0.75	BUK7520-100A	BUK7620-100A			
26		49	0.95	BUK7526-100B	BUK7626-100B			
27	28	49	0.9		BUK9628-100A			
27		48	0.95			BUK7227-100B		
27	29	46	0.95	BUK9529-100B	BUK9629-100B			
28	30	47	0.95			BUK9230-100B		
28		47	0.9	BUK7528-100A	BUK7628-100A			
31.2	34	35	1.42				***BUK9Y34-100B***	
33		35	1.42				***BUK7Y33-100B***	
34	35	41	1	BUK9535-100A	BUK9635-100A			
35		41	1	BUK7535-100A	BUK7635-100A			
38.6	40	33	1.3			BUK9240-100A		
39	40	39	0.95		BUK9640-100A			
40		37	1.1	BUK7540-100A	BUK7640-100A			
40		34	1.3			BUK7240-100A		
49	53	23	2				BUK9Y53-100B	
53		24	1.76				***BUK7Y53-100B***	
58	60	26	1.4		BUK9660-100A			
60		26	1.4		BUK7660-100A			
72	75	23	1.5	BUK9575-100A	BUK9675-100A			
72	75	21	1.7			BUK9275-100A		
72	75	7	15					BUK9875-100A
75		23	1.5	BUK7575-100A	BUK7675-100A			
75		21	1.7			BUK7275-100A		
95.7	104	14	2.53				***BUK9Y104-100B***	
102		15	2.53				***BUK7Y102-100B***	
173	180	11	2.8	BUK95180-100A	BUK96180-100A			
173	180	4.6	15					BUK98180-100A

Types in ***bold red italic underline*** represent products in development

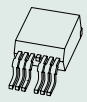
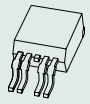
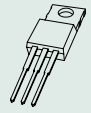
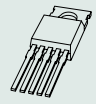
TrenchPLUS MOSFETs

TrenchPLUS is a range of standard MOSFETs with additional protection features, such as current and temperature sensing components, overvoltage clamps, and gate protection (ESD) diodes. The system microcontroller can use data gathered from these sensors to implement cost-effective protection features, thus eliminating the need to design with protected power devices. All the standard products listed below offer one or more "PLUS" features. Custom versions can be developed for high-volume applications.

V_{DS} (V)	R_{DSon} (max) @10 V (mΩ)	R_{DSon} (max) @5 V (mΩ)	I_D (max) @25 °C (A)	Temp Sense	Gate Source Clamps	Gate Drain Clamps	Current Sensing	Gate Resistor	Surface Mount Package		Leaded Package	
									7-pin D2PAK (SOT427)	5-pin D2PAK (SOT426)	TO220AB (SOT78C)	5-pin TO220 (SOT263B-01)
												
									11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	15.0 x 10.0 x 4.5	15.0 x 10.0 x 4.5
34	3.3		75		✓	✓		✓			BUK7L3R3-34BRC	
34	6		75		✓	✓		✓			BUK7L06-34ARC	
34	11		75		✓	✓		✓			BUK7L11-34ARC	
40	4.1		75	✓						BUK714R1-40BT		BUK794R1-40BT
40	5		75		✓		✓			BUK7105-40AIE		BUK7905-40AIE
40	5		75	✓	✓					BUK7105-40ATE		BUK7905-40ATE
40	5		75				✓					BUK7905-40AI
40	6		75	✓	✓		✓		BUK7C06-40AITE			
40	6.6	7	75	✓	✓	✓				BUK9107-40ATC		BUK9907-40ATC
40	7		75	✓	✓	✓				BUK7107-40ATC		BUK7907-40ATC
40	8		75		✓		✓			BUK7108-40AIE		BUK7908-40AIE
55	6.6	7	75	✓	✓					BUK9107-55ATE		BUK9907-55ATE
55	7		75		✓		✓			BUK7107-55AIE		BUK7907-55AIE
55	7		75	✓	✓					BUK7107-55ATE		BUK7907-55ATE
55	8		75	✓	✓		✓		BUK7C08-55AITE			
55	9	10	75	✓			✓		BUK9C10-55BIT			



TrenchPLUS MOSFETs

V_{DS} (V)	R_{DSon} (max) @10 V (mΩ)	R_{DSon} (max) @5 V (mΩ)	I_D (max) @25 °C (A)	Temp Sense	Gate Source Clamps	Gate Drain Clamps	Current Sensing	Gate Resistor	Surface Mount Package			Leaded Package	
									7-pin D2PAK (SOT427)	5-pin D2PAK (SOT426)	SO20 (SOT163)	TO220AB (SOT78C)	5-pin TO220 (SOT263B-01)
													
									11.0 x 10.0 x 4.3	11.0 x 10.0 x 4.3	13.0 x 7.5 x 2.65	15.0 x 10.0 x 4.5	15.0 x 10.0 x 4.5
55	9+23	10+25	17+9	✓			✓				**BUK9MGP-55PTS**		
55	14+14	15+15	13+13	✓			✓				BUK9MJJ-55PSS		
55	14+14	15+15	13+13	✓			✓				**BUK9MJJ-55PTT**		
55	14+90	15+100	13+4	✓			✓				BUK9MJT-55PRF		
55	23+23	25 + 25	9+9	✓			✓				**BUK9MPP-55PRR**		
55	27+27	30+30	8+8	✓			✓				BUK9MMM-55PNN		
55	45+45	50+50	6+6	✓			✓				**BUK9MLL-55PLL**		
55	56+56	65+65	5+5	✓			✓				BUK9MRR-55PGG		
65	6,5	7	75	✓			✓		***BUK9C07-65BIT***				
65	9,2	10	75	✓			✓		***BUK9C10-65BIT***				
65	11+11	12+12	15+15	✓			✓				***BUK9MHH-65PNN***		
65	13+13	14+14	13+13	✓			✓				***BUK9MFF-65PSS***		
65	16+16	17+17	11+11	✓			✓				***BUK9MJJ-65PLL***		
65	25+25	27+27	8+8	✓			✓				***BUK9MPP-65PLL***		
65	33+33	36+36	7+7	✓			✓				***BUK9MNN-65PKK***		
65	61+61	67+67	5+5	✓			✓				***BUK9MRR-65PKK***		
65	90+90	100+100	4+4	✓			✓				***BUK9MTT-65PBB***		
75	7		75	✓	✓					BUK7109-75ATE			BUK7909-75ATE
75	9		75		✓		✓			BUK7109-75AIE			BUK7909-75AIE
75	10		75	✓	✓		✓		BUK7C10-75AITE				

Types in **bold red** represent new products
Types in ***bold red italic underline*** represent products in development

Automotive TrenchPLUS part numbering

Automotive qualified MOSFET

BUKabrr-vvXddd

Technology
7 = standard level TrenchMOS
9 = logic level TrenchMOS

Package identifier
1 = 5 pin D2PAK (SOT426)
9 = SOT263B-01
C = 7 pin D2PAK (SOT427)
L = SOT78C

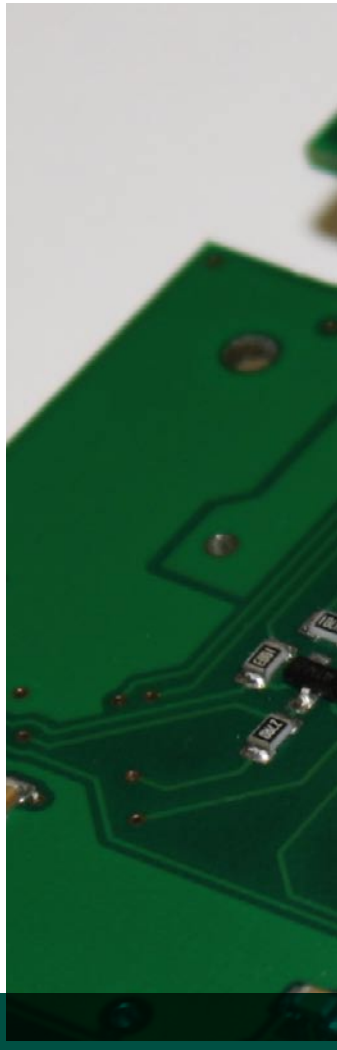
$R_{DS(ON)}$ in mΩ where R = decimal point

Features
C = Gate-Drain and Gate-Source clamps
E = ESD protection
I = Current sensor
R = Gate resistor
T = Temperature sensor

Generation
A = TrenchMOS generation 2
B = TrenchMOS generation 3
C = TrenchMOS generation 4

Voltage rating

msd993



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