

Parametric filters

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Type number

Package name

Package

Product status

V_{DS} [max] (V)

$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (mOhm)

$R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ (mOhm)

$R_{DS(on)}$ [max] @ $V_{GS} = 2.5\text{ V}$ (mOhm)

I_D [max] (A)

Q_{GD} [typ] (nC)

Selection guide

Applications

Looking for

Type number	Package name	Package	Product status	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (mOhm)	$R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ (mOhm)	$R_{DS(on)}$ [max] @ $V_{GS} = 2.5\text{ V}$ (mOhm)	I_D [max] (A)	Q_{GD} [typ] (nC)
PSMN0R9-25YLC	LFPAK; Power-SO8	SOT669	Production	25	0.99	1.25	3.9	100	0.07
PSMN1R0-30YLC	LFPAK; Power-SO8	SOT669	Production	30	0.99	1.25	3.9	100	0.07
PSMN1R1-25YLC	LFPAK; Power-SO8	SOT669	Production	25	1.15	1.4	3.9	100	14
PSMN1R2-25YLC	LFPAK; Power-SO8	SOT669	Production	25	1.15	1.5	3.9	100	14.8
PSMN1R2-30YLC	LFPAK; Power-SO8	SOT669	Production	30	1.3	1.7	3.9	100	11
PSMN1R5-30YLC	LFPAK; Power-SO8	SOT669	Production	30	1.25	1.65	3.9	100	8.3
PSMN1R7-25YLC	LFPAK; Power-SO8	SOT669	Production	25	1.55	2.05	3.9	100	11.6
PSMN1R9-25YLC	LFPAK; Power-SO8	SOT669	Production	25	1.9	2.5	3.9	100	8.6
PSMN2R2-25YLC	LFPAK; Power-SO8	SOT669	Production	25	2.05	2.7	3.9	100	7.8
PSMN2R2-30YLC	LFPAK; Power-SO8	SOT669	Production	30	2.4	3.15	3.9	100	7.4
PSMN2R6-30YLC	LFPAK; Power-SO8	SOT669	Production	30	2.15	2.8	3.9	100	5.2
PSMN2R9-25YLC	LFPAK; Power-SO8	SOT669	Production	25	2.8	3.65	3.9	100	8
PSMN3R2-25YLC	LFPAK; Power-SO8	SOT669	Production	25	3.15	4.1	3.9	100	5.5
PSMN3R2-30YLC	LFPAK; Power-SO8	SOT669	Production	30	3.4	4.45	3.9	100	4.4
PSMN3R7-25YLC	LFPAK; Power-SO8	SOT669	Production	25	3.5	4.55	3.9	100	4
PSMN3R7-30YLC	LFPAK; Power-SO8	SOT669	Production	30	3.9	5.1	3.9	97	4.1
PSMN3R7-30YLC	LFPAK; Power-SO8	SOT669	Production	30	3.95	5.15	3.9	100	3

Power MOSFET Selection Guide 2012

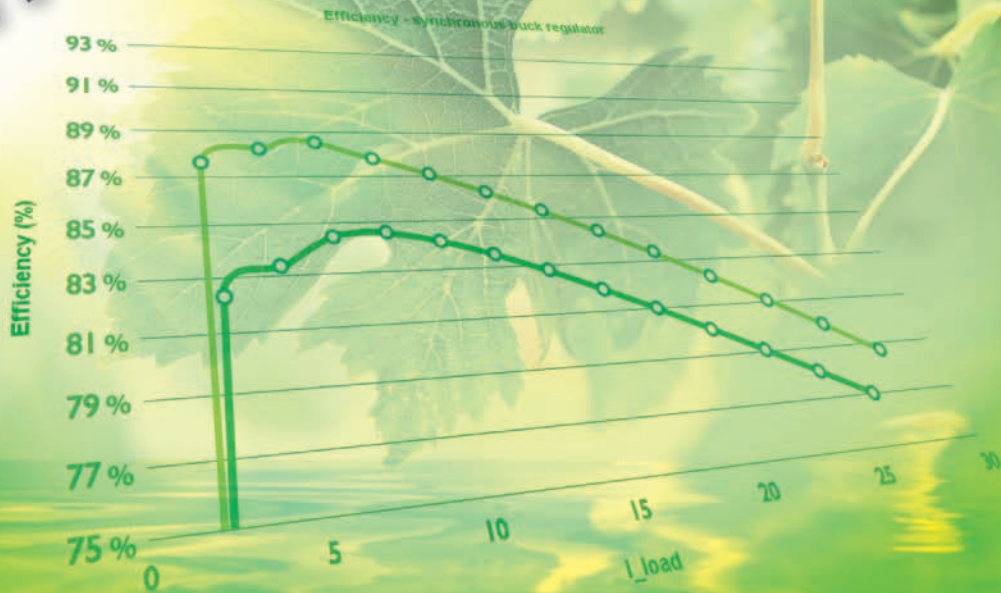
Smaller, faster, cooler



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Power MOSFETs - Smaller, faster, cooler



NXP MOSFETs are renowned for their quality, performance and reliability.



Whether you are designing a complex automotive system, a super high efficiency industrial power supply or a slimline portable PC, NXP has a range of smaller, faster, cooler MOSFETs to help you on your way.

For example our 25 V and 30 V MOSFETs in LPAK (Power-SO8 compatible) offer the lowest $R_{DS(ON)}$ of any devices in this category. We've also extended our range of TO220 devices to include new package types...

- ▶ Full Pack (TO220F) with integrated isolation for ease of assembly
- ▶ D²PAK for surface mount applications
- ▶ I²PAK for slimline notebook adapters and other height constrained application

A printed selection guide is by necessity a snapshot in time of our portfolio. To ensure that you stay up to date with our very latest product offerings please visit our newly designed website **www.nxp.com/mosfets** incorporating our market leading MOSFET parametric search tool.

Join My NXP **<http://www.nxp.com/my>** and you can also follow us on twitter @MOSFETs.

Benefits of Superjunction technology denoted by YLC part number

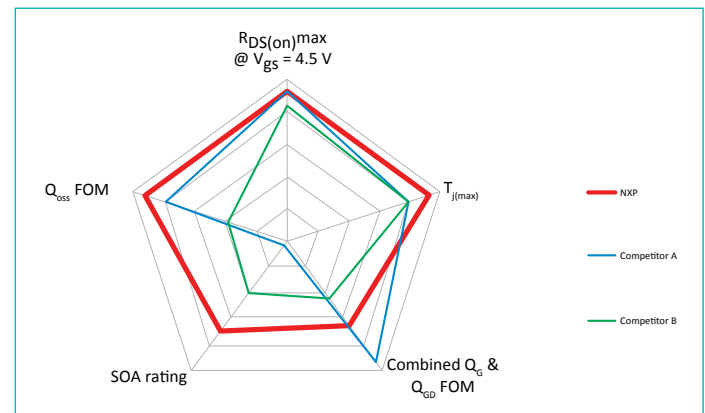
Many suppliers focus on two favourable indicators when defining MOSFET performance, but this only tells part of the story.

The spider chart below shows the relative performance of NextPower versus the leading MOSFET vendors, comparing the six most important MOSFET parameters required for high-performance & high reliability switching applications. The outside edge of the graph represents the 'best-in-class' performance, whilst scoring towards the centre of the graph represents a weakness.

- ▶ Low $R_{DS(on)}$ gives low I^2R losses and superior performance when used in a SYNC FET or power OR-ing application
- ▶ Low Q_{oss} gives reduced losses between the drain & source terminals since the energy stored in the output capacitance (C_{oss}) is wasted whenever the voltage changes across the output terminals
- ▶ SOA performance provides tolerance to overload & fault conditions. The graph shows the maximum allowable current for a 1 mS pulse at $V_{DS}=10$ V
- ▶ Low Miller charge (Q_{GD}) gives reduced switching losses between the MOSFET's drain & source terminals when the MOSFET turns ON or turns OFF
- ▶ Low gate charge (Q_g) gives reduced losses in the gate drive circuit since less energy is required to turn the MOSFET ON & OFF
- ▶ Superior junction temperature rating, $T_{j(max)}$, is proof that LFPAC is the most rugged Power-SO8 package available.

LFPAC is the best choice for demanding environments and where high reliability is required

Comparison of NextPower technology with key competitor types

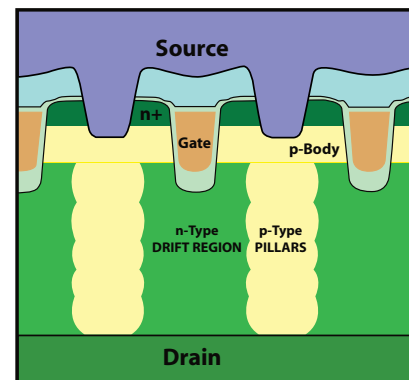


Superjunction technology

NextPower MOSFETs use 'Superjunction' silicon technology to deliver the optimum balance between low R_{DS} , low $Q_{G(tot)}$, low Q_{GD} , high SOA performance and low C_{oss} at 25 V and 30 V.

Superjunction technology combines the benefits of a lateral MOSFET, (low $Q_{g(tot)}$ and low Q_{GD}) with the benefits of a Trench-MOSFET (low $R_{DS(on)}$ and 20 V rugged GATE rating) resulting in a uniquely balanced specification.

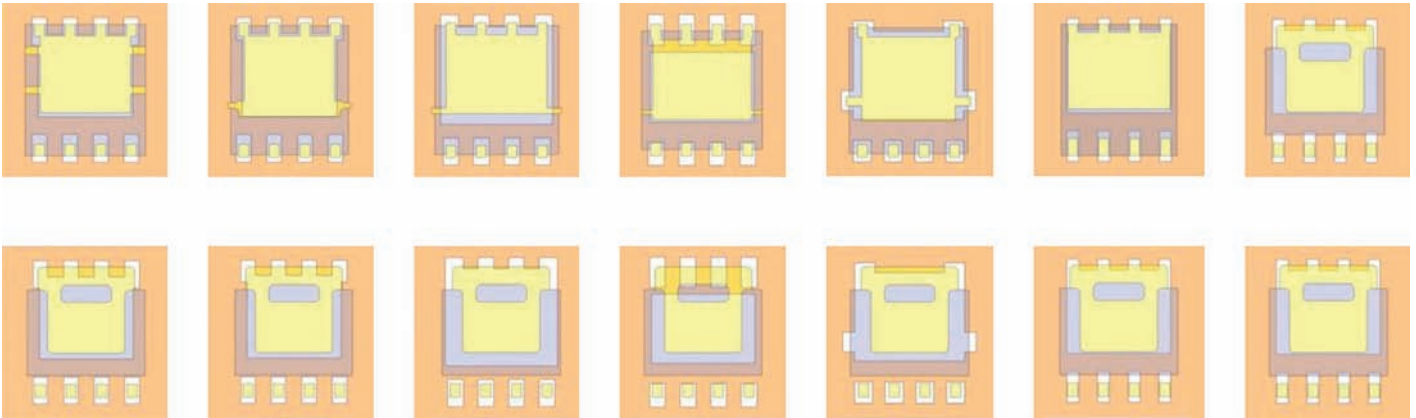
NextPower uses an optimized balance of the different resistance elements in the MOSFET to achieve a lower on-resistance for every cell. The low cell resistance means that NextPower types typically require fewer cells than competitor devices to achieve the same $R_{DS(on)}$, and a lower cell count provides lower $Q_{G(tot)}$, low Q_{GD} , low C_{oss} and superior 'Safe operating area' ruggedness.



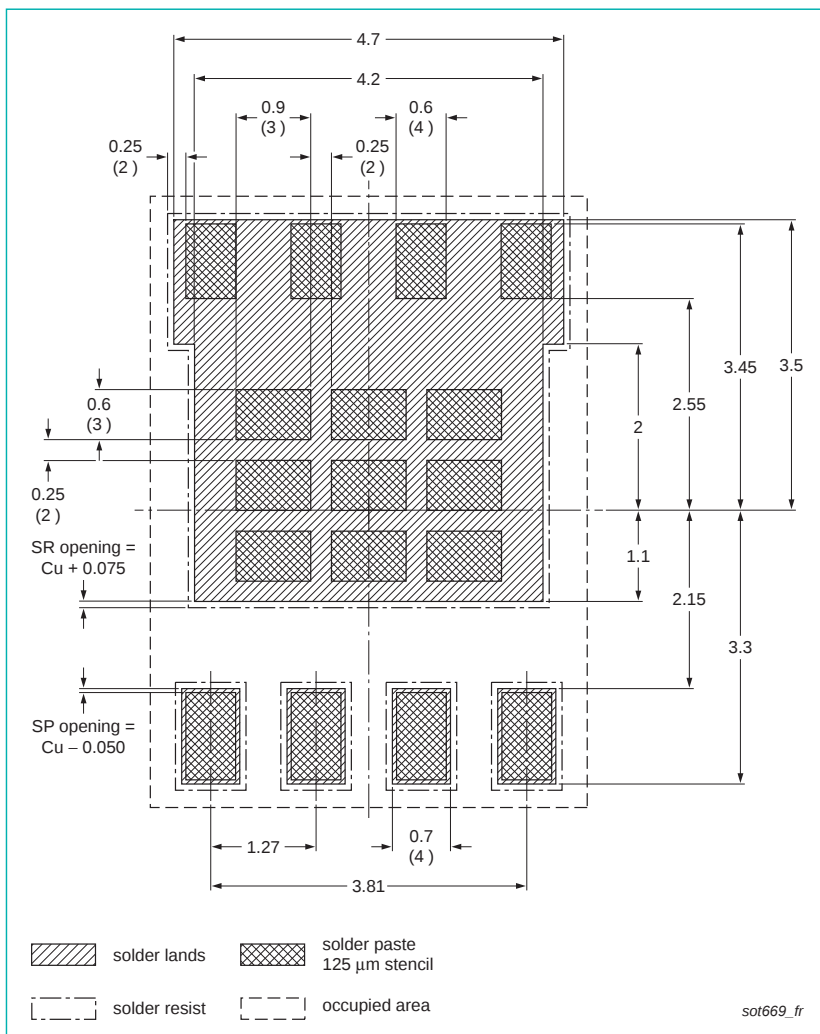
NextPower technology uses p-Type pillars to improve the breakdown voltage in the OFF state, and a heavily doped n-Type drift region to achieve exceptionally low ON resistance.

Since fewer cells are required to achieve a given R_{DS} rating, then gate charge (Q_g), Miller charge (Q_{GD}), output capacitance (C_{oss}) are all reduced and optimum ruggedness (denoted by the safe operating area characteristics) is achieved.

LFAK is footprint compatible with other Power-SO8 vendors



Through careful design of the PCB footprint, it is possible to design a universal footprint, such as the one shown below, that meets the requirements of various Power-SO8 manufacturers. The example universal footprint shows the solder resist & solder stencil details, which allow a PCB designer to create a footprint that is compatible with other Power-SO8 vendors.



Recommended universal Power-SO8 & LFAK footprint allows the following device types to be mounted to a single PCB design:

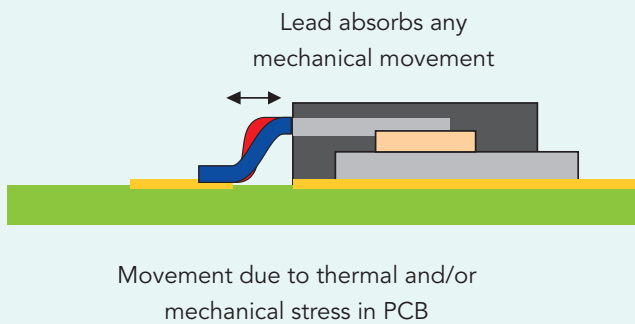
- ▶ **NXP LFAK** (SOT669 & SOT1023)
- ▶ **Infineon** PG-TDSON-8
- ▶ **Fairchild** Power 56
- ▶ **Vishay** PowerPAK SO-8
- ▶ **NEC** 8-pin HVSON
- ▶ **ON Semi** SO-8 FL
- ▶ **STM** PowerFLAT (6x5)
- ▶ **Renesas** LFAK

The original document can be downloaded at: http://www.nxp.com/documents/reflow_soldering/sot669_fr.pdf



Why Choose LFPAK?

- ▶ Reduced electrical resistance and inductance
- ▶ Outstanding thermal performance
- ▶ Rugged design, qualified to AEC-Q101 (stringent automotive standard)
- ▶ Easy to handle, solder and inspect
- ▶ Power-SO8 footprint compatible



LFPAK for mechanical & thermal ruggedness

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

20 V – 25 V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m Ω)	$R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5 	PHB66NQ03LT	25	10.5		66	12
DPAK (SOT428) 6.5 x 10.0 x 2.3 	PHD38N02LT	20			44.7	15.1
	PHD97NQ03LT	25	6.3	10.6	75	11.7
Power-SO8 (LFPACK) 5.0 x 6.0 x 1.1 	PH3120L	20	2.65	3.7	100	48.5
	PH2520U	20		2.7	100	78
	PSMN0R9-25YLC	25	0.99	1.25	100	51
	PSMN1R1-25YLC	25	1.15	1.5	100	39
	PSMN1R2-25YL	25	1.2	1.85	100	50.6
	PSMN1R2-25YLC	25	1.3	1.7	100	31
	PSMN1R5-25YL	25	1.5	2.2	100	36
	PSMN1R7-25YLC	25	1.9	2.5	100	28
	PSMN1R9-25YLC	25	2.05	2.7	100	27
	PSMN2R2-25YLC	25	2.4	3.15	100	18
	PSMN2R9-25YLC	25	3.15	4.1	100	16
	PSMN3R2-25YLC	25	3.4	4.45	100	14
	PSMN3R7-25YLC	25	3.9	5.1	97	10.1
	PSMN4R0-25YLC	25	4.5	5.8	84	10.9
	PSMN6R0-25YLB	25	6.1	7.9	73	9
	PSMN6R5-25YLC	25	6.5	8.5	64	8.4
	PSMN7R5-25YLC	25	7.4	9.8	56	7
	PSMN9R0-25YLC	25	9.1	12.3	46	5.6
	PSMN10-25YLC	25	10.6	14	39	5
	PSMN12-25YLC	25	12.6	16.6	33	3.8
SC-70 (SOT323) 2.0 x 1.25 x 0.95 	PMF280UN	20		340	1.02	
	PMF290XN	20		350	1	0.72
SC-75 (SOT416) 1.6 x 0.8 x 0.77 	PMR280UN	20		340	0.98	0.89
	PMR290UNE	20		380	0.7	0.45
	PMR290XN	20		350	0.97	0.72
SO8 (SOT96) 5.0 x 6.0 x 1.3 	PHKD6N02LT	20			10.9	15.3
	PSMN006-20K	20		5	32	32
SOT666 1.6 x 1.2 x 0.55 	PMDT290UNE	20		380	0.8	0.45
DFN1006-3 (SOT883) 1.0 x 0.6 x 0.5 	PMZ250UN	20		300	2.28	0.89
	PMZ270XN	20		340	2.15	0.72
TO-236AB (SOT23) 2.9 x 1.3 x 1.0 	BSH105	20		200	1.05	3.9
	PMV16UN	20		18	5.8	7.4
	PMV28UN	20		32	3.3	5.8
	PMV30UN	20		36	5.7	7.4
	PMV30XN	20		35	3.2	4.9
	PMV31XN	20		37	5.9	5.8
	PMV56XN	20		85	3.76	5.4
	SI2302DS	20		85	2.5	5.4
TSOP6 (SOT457) 2.9 x 1.5 x 1.0 	PMN34LN	20	34	40	5.7	13.1
	PMN55LN	20	65	82	4.1	13.1
	PMN23UN	20		28	6.3	10.6
	PMN25UN	20		27	6	6.4
	PMN27UN	20		34	5.7	10.6
TSSOP6 (SOT363) 2.0 x 1.25 x 0.95 	PMGD280UN	20		340	0.87	0.89
	PMGD290XN	20		350	0.86	0.72

30 V N-channel MOSFETs

Package	Typenumber	V _{DS} [max] (V)	R _{DS(on)} [max] @ V _{GS} = 10 V (mΩ)	R _{DS(on)} [max] @ V _{GS} = 4.5 V (mΩ)	I _D [max] (A)	Q _{G(tot)} [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5	<i>PSMNR90-30BL</i>	30	1	1.3	120	118
	<i>PSMNR1R6-30BL</i>	30	1.6	2.1	100	101
	<i>PSMNR1R8-30BL</i>	30	1.8	2.3	100	83
	<i>PSMNR2R0-30BL</i>	30	2	2.8	100	55
	<i>PSMNR2R7-30BL</i>	30	2.7	3.6	100	32
	<i>PSMNR3R4-30BL</i>	30	3.4	4.1	100	31
	<i>PSMNR4R3-30BL</i>	30	4.3	6.2	100	19
	<i>PSMNR022-30BL</i>	30	22	34	30	4.4
DFN3333-8 (SOT873-1) 3.3 x 3.3 x 1.0	PSMN3R5-30LL	30	3.6	5.6	40	18
	PSMN3R8-30LL	30	3.7	5.8	40	38
	PSMN5R8-30LL	30	5.8	8	40	24
	PSMN9R0-30LL	30	9	13	21	20.6
	PSMN013-30LL	30	13	19	21	12.2
	PSMN017-30LL	30	17	25	15	10
DPAK (SOT428) 6.5 x 10.0 x 2.3	PHD101NQ03LT	30	5.5		75	23
	PHD71NQ03LT	30	10		75	13.2
I ² PAK (SOT226) 10.0 x 14.0 x 4.5	PSMN1R1-30EL	30	1.3	1.4	120	118
Power-SO8 (LFPACK) 5.0 x 6.0 x 1.1	PSMN1R0-30YLC	30	1.15	1.4	100	50
	PSMN1R2-30YLC	30	1.25	1.65	100	38
	PSMN1R3-30YL	30	1.3	1.95	100	46.6
	PSMN1R5-30YL	30	1.5	1.9	100	36.2
	PSMN1R5-30YLC	30	1.55	2.05	100	30
	PSMN1R7-30YL	30	1.7	2.1	100	36.2
	PSMN2R0-30YL	30	2	2.63	100	30
	PSMN2R2-30YLC	30	2.15	2.8	100	26
	PSMN2R5-30YL	30	2.4	3.16	100	27
	PSMN2R6-30YLC	30	2.8	3.65	100	18
	PSMN3R0-30YL	30	3	4.04	100	21
	PSMN3R2-30YLC	30	3.5	4.55	100	14.2
	PSMN3R5-30YL	30	3.5	4.61	100	19
	PSMN3R7-30YLC	30	3.95	5.15	100	14
	PSMN4R0-30YL	30	4	5.25	100	17.6
	PSMN4R1-30YLC	30	4.35	5.7	92	11
	PSMN4R5-30YLC	30	4.8	6.1	84	9.6
	PSMN5R0-30YL	30	5	6.7	91	14.1
	PSMN6R0-30YL	30	6	7.87	79	11
	PSMN5R9-30YL	30	6.1	9	78	10.5
	PSMN6R0-30YLB	30	6.5	8.1	71	9
	PSMN7R0-30YL	30	7	9.1	76	10
	PSMN7R0-30YLC	30	7.1	8.9	61	7.9
	PSMN8R0-30YLC	30	7.9	10	54	7
	PSMN9R0-30YL	30	8	11.03	61	8.7
	PSMN8R0-30YL	30	8.3	12.2	62	9
	PSMN9R1-30YL	30	9.1	13.6	57	8.4
	PSMN9R5-30YLC	30	9.8	12.1	44	5
	PSMN011-30YL	30	10.7	16.1	51	7.3
	PSMN011-30YLC	30	11.6	14.5	37	4.9
	PSMN013-30YLC	30	13.6	16.9	32	4
SC-70 (SOT323) 2.0 x 1.25 x 0.95	NX3008NBKW	30		1400	0.35	0.52
	PMF370XN	30		440	0.87	0.65
	PMF400UN	30		480	0.83	0.89
SC-73 (SOT223) 6.5 x 7.0 x 1.8	PMT21EN	30	21	26	7.4	12.5
	PMT29EN	30	29	36	6	9.6
	BSP030	30	30		10	24
	BSP100	30	100	200	6	6
SC-75 (SOT416) 1.6 x 0.8 x 0.77	NX3008NBKT	30		1400	0.35	0.52
	PMR370XN	30		440	0.84	0.65
	PMR400UN	30		480	0.8	0.89

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

30 V N-channel MOSFETs

Package	Typenumber	V _{DS} [max] (V)	R _{DS(on)} [max] @ V _{GS} = 10 V (mΩ)	R _{DS(on)} [max] @ V _{GS} = 4.5 V (mΩ)	I _D [max] (A)	Q _{G(tot)} [typ] (nC)
SO8 (SOT96) 5.0 x 6.0 x 1.3	PHK31NQ03LT	30	4.4	5.6	30.4	33
	PSMN005-30K	30	5.5	8		34
	PHK28NQ03LT	30	6.5	7.7	23.7	30.3
	PHK18NQ03LT	30	8.9	12.5	20.3	10.6
	SI4410DY	30	13.5	20	10	21.5
	PHK13NQ03LT	30	20	26	13.8	10.7
	PHKD13NQ03LT	30	20	26	10.4	10.7
	PHN203	30	30	55	6.3	14.6
	PHN210T	30	100	200	3.4	6
	PHC21025	30	250	400		10
	PHK12NQ03LT	30		14	11.8	
SOT666 1.6 x 1.2 x 0.55	NX3008NBKV	30		1400	0.4	0.52
DFN1006-3 (SOT883) 1.0 x 0.6 x 0.5	PMZ1000UN	30		1000	0.48	0.89
	PMZ350XN	30		420	1.87	0.65
	PMZ390UN	30		460	1.78	0.89
TO-220AB (SOT78) 15.5 x 10.0 x 4.3	PSMN1R1-30PL	30	1.3	1.4	120	118
	PSMN1R6-30PL	30	1.7	2.1	100	101
	PSMN1R8-30PL	30	1.8	2.3	100	83
	PSMN2R0-30PL	30	2.1	2.8	100	55
	PSMN2R7-30PL	30	2.7	3.6	100	32
	PSMN3R4-30PL	30	3.4	4.1	100	31
	PSMN4R3-30PL	30	4.3	6.2	100	19
	PSMN022-30PL	30	22	34	30	4.4
TO-236AB (SOT23) 2.9 x 1.3 x 1.0	PMV22EN	30	22	29	5.2	8.6
	PMV37EN	30	36	47	3.1	6.5
	PMV45EN	30	42	54	5.4	9.4
	PMV60EN	30	55	72	4.7	9.4
	PMV117EN	30	117	190	2.5	4.6
	SI2304DS	30	117	190	1.7	4.6
	B5H108	30	120		1.9	6.4
	B5H103	30		400		2.1
	NX3008NBK	30		1400	0.4	0.52
	PMV20XN	30		25	4.8	6.4
	PMV40UN	30		47	4.9	9.3
	PMN20EN	30	20	25	6.7	12.4
	PMN25EN	30	23	31	6.2	9.6
TSOP6 (SOT457) 2.9 x 1.5 x 1.0	PMN35EN	30	31	43	5.1	6.2
	PMN38EN	30	38	46	5.4	6.1
	PMN40LN	30	38	45	5.4	13.8
	PMN45EN	30	40	50	5.2	6.1
	PMN49EN	30	47	60	4.6	8.8
	PMN34UN	30		46	4.9	9.9
	NX3008NBKS	30		1400	0.35	0.52
TSSOP6 (SOT363) 2.0 x 1.25 x 0.95	PMG370XN	30		440	0.96	0.65
	PMGD370XN	30		440	0.74	0.65
	PMGD400UN	30		480	0.71	0.89
	PMGD8000LN	30			0.125	0.35

Part numbering for NXP MOSFETs

MOSFET BRAND NAME			MOSFET type N-ch or P-ch	MOSFET on-resistance R _{DS(on)}			-	MOSFET voltage BV _{DS}	Package type	Gate threshold voltage	NextPower special features
P	S	M	N	1	R	7	-	25	Y	L	C
Power Silicon Max			N = N-ch	R95 = 0.95 mΩ			-	25 = 25 V	B = D ² PAK, SOT404	L = Logic-level	C = Optimised for Q _{g(fom)}
			P = P-ch	1R7 = 1.7 mΩ			-	30 = 30 V	D = DPAK, SOT428	S = Standard-level	B = integrated snubber
			X = Dual N-ch	014 = 14 mΩ			-	40 = 40 V	E = I ² PAK, SOT226		
			Y = Dual P-ch	125 = 125 mΩ			-	60 = 60 V	K = SO8, SOT96		
			Z = N-ch + P-ch				-	80 = 80 V	L = DFN3333-8, SOT873		
							-	100 = 100 V	P = TO220, SOT78		
							-	110 = 110 V	Y = L ² PAK, SOT669 & SOT1023		
							-	120 = 120 V	X = TO220F (FULLPACK), SOT186A		

40V – 50V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (mΩ)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5	<i>PSMN1R1-40BS</i>	40	1.4	120	136
	<i>PSMN2R2-40BS</i>	40	2.1	100	110
	<i>PSMN2R8-40BS</i>	40	2.8	100	71
	<i>PSMN4R5-40BS</i>	40	4.6	100	35
	<i>PSMN8R0-40BS</i>	40	7.6	77	21
DFN3333-8 (SOT873-1) 3.3 x 3.3 x 1.0	PSMN7R0-40LS	40	7	40	21.4
I ² PAK (SOT226) 10.0 x 14.0 x 4.5	PSMN1R5-40ES	40	1.6	120	136
Power-SO8 (LFPAK) 5.0 x 6.0 x 1.1	PSMN2R6-40YS	40	2.8	100	63
	PSMN3R3-40YS	40	3.3	100	49
	PSMN4R0-40YS	40	4.2	100	38
	PSMN5R8-40YS	40	5.7	90	28.8
	PSMN8R3-40YS	40	8.6	70	20
TO-220AB (SOT78) 15.5 x 10.0 x 4.3	PSMN014-40YS	40	14	46	12
	PSMN1R5-40PS	40	1.6	120	136
	PSMN2R2-40PS	40	2.1	100	110
	PSMN2R8-40PS	40	2.8	100	71
	PSMN4R5-40PS	40	4.6	100	35
TO-236AB (SOT23) 2.9 x 1.3 x 1.0	PSMN8R0-40PS	40	7.6	77	17
	BSN20	50	15000	0.173	

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

55V – 60V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (mΩ)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5	PHB191NQ06LT	55	3.7	75	95.6
	PHB21N06LT	55	70	19	
	PHB20N06T	55	75	20.3	11
	<i>PSMN1R7-60BS</i>	60	2	120	137
	<i>PSMN3R0-60BS</i>	60	3	100	130
	PSMN004-60B	60	3.6	75	168
	<i>PSMN4R6-60BS</i>	60	4.6	100	70.8
	<i>PSMN7R6-60BS</i>	60	7.8	92	38.7
	<i>PSMN015-60BS</i>	60	14.8	50	20.9
DFN3333-8 (SOT873-1) 3.3 x 3.3 x 1.0	PHB32N06LT	60	37	34	17
	PSMN014-60LS	60	14	40	19.6
DPAK (SOT428) 6.5 x 10.0 x 2.3	PHD20N06T	55	77	18	11
I ² PAK (SOT226) 10.0 x 14.0 x 4.5	PSMN2R0-60ES	60	2.2	120	137
	PSMN3R0-60ES	60	3	100	130
Power-SO8 (LFPAK) 5.0 x 6.0 x 1.1	PSMN5R5-60YS	60	5.2	100	56
	PSMN7R0-60YS	60	6.4	89	45
	PSMN8R5-60YS	60	8	76	39
	PSMN012-60YS	60	11.1	59	28.4
	PSMN017-60YS	60	15.7	44	20
	PSMN030-60YS	60	24.7	29	13

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

55 V – 60 V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10$ V (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
SC-70 (SOT323) 2.0 x 1.25 x 0.95	B5H121	55		0.3	1
	PMF780SN	60	920	0.57	1.05
	2N7002BKW	60	1600	0.31	0.5
	2N7002PW	60	1600	0.31	0.6
	B5S138BKW	60	1600	0.32	0.6
	B5S138PW	60	1600	0.32	0.72
	PMF3800SN	60	4500	0.26	0.85
SC-73 (SOT223) 6.5 x 7.0 x 1.8	PHT6N06T	55	150	5.5	
	PHT6N06LT	55		5.5	4.5
	PHT8N06LT	55		7.5	11.2
SC-75 (SOT416) 1.6 x 0.8 x 0.77	PMR780SN	60	920	0.55	1.05
	2N7002BKT	60	1600	0.29	0.5
	2N7002PT	60	1600	0.31	0.6
SOT666 1.6 x 1.2 x 0.55	2N7002BKV	60	1600	0.34	0.5
	2N7002PV	60	1600	0.35	0.6
DFN1006-3 (SOT883) 1.0 x 0.6 x 0.5	PMZ760SN	60	900	1.22	1.05
	2N7002BKM	60	1600	0.45	0.5
TO-220AB (SOT78) 15.5 x 10.0 x 4.3	PHP191NQ06LT	55	3.7	75	95.6
	PHP20N06T	55	75	20.3	11
	PSMN2R0-60PS	60	2.2	120	137
	PSMN3R0-60PS	60	3	100	130
	PSMN4R6-60PS	60	4.6	100	70.8
	PSMN7R6-60PS	60	7.8	92	38.7
	PSMN015-60PS	60	14.8	50	20.9
TO-236AB (SOT23) 2.9 x 1.3 x 1.0	B5H111	55		0.335	1
	2N7002BK	60	1600	0.35	0.5
	2N7002CK	60	1600	0.3	1.09
	2N7002P	60	1600	0.36	0.6
	B5S138BK	60	1600	0.36	0.6
	B5S138P	60	1600	0.36	0.72
	2N7002F	60	2000	0.475	0.69
	2N7002E	60	3000	0.385	0.69
	2N7002K	60	3900	0.34	
	2N7002	60	5000	0.3	
	PMBF170	60	5000	0.3	
TSSOP6 (SOT363) 2.0 x 1.25 x 0.95	PMGD780SN	60	920	0.49	1.05
	2N7002BKS	60	1600	0.3	0.5
	2N7002PS	60	1600	0.32	0.6
	B5S138PS	60	1600	0.32	0.72

75 V – 80 V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10$ V (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5 	PSMN005-75B	75	5	75	165
	PSMN008-75B	75	8.5	75	122.8
	PHB110NQ08T	75	9	75	113.1
	PHB29N08T	75		27	19
	<i>PSMN2R8-80BS</i>	80	3	120	139
	<i>PSMN3R3-80BS</i>	80	3.5	120	111
	<i>PSMN4R4-80BS</i>	80	4.3	120	111
	<i>PSMN5R0-80BS</i>	80	4.7	100	87
	<i>PSMN6R5-80BS</i>	80	6.9	100	71
	<i>PSMN8R7-80BS</i>	80	8.7	90	52
DFN3333-8 (SOT873-1) 3.3 x 3.3 x 1.0 	<i>PSMN012-80BS</i>	80	11	74	36
	<i>PSMN017-80BS</i>	80	17	50	26
I ² PAK (SOT226) 10.0 x 14.0 x 4.5 	<i>PSMN050-80BS</i>	80	46	22	9
	PSMN023-80LS	80	23	34	21
	PSMN3R3-80ES	80	3.3	120	139
Power-SO8 (LFPAK) 5.0 x 6.0 x 1.1 	PSMN3R5-80ES	80	3.5	120	139
	PSMN4R3-80ES	80	4.3	120	111
	PSMN8R2-80YS	80	8.5	82	55
	PSMN011-80YS	80	11	67	45
	PSMN013-80YS	80	12.9	60	37
	PSMN018-80YS	80	18	45	26
	PSMN026-80YS	80	27.5	34	20
TO-220AB (SOT78) 15.5 x 10.0 x 4.3 	PSMN045-80YS	80	45	24	12.5
	PHP79NQ08LT	75	16	73	30
	PHP29N08T	75		27	19
	PSMN3R3-80PS	80	3.3	120	139
	PSMN3R5-80PS	80	3.5	120	139
	PSMN4R4-80PS	80	4.1	100	112
	PSMN4R3-80PS	80	4.3	120	111
	PSMN5R0-80PS	80	4.7	100	87
	PSMN6R5-80PS	80	6.9	100	71
	PSMN8R7-80PS	80	8.7	90	52
	PSMN012-80PS	80	11	74	36
	PSMN017-80PS	80	17	50	26
	PSMN050-80PS	80	46	22	9

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

TrenchMOS - PH types part numbering

<u>P</u>	<u>H</u>	<u>P</u>	<u>4</u>	<u>4</u>	<u>N</u>	<u>Q</u>	<u>0</u>	<u>3</u>	<u>L</u>	<u>T</u>
MOSFET Brand name	Package type	Current rating I_D (A)	MOSFET type N-ch or P-ch	Q-Trench	MOSFET voltage V_{DSS}	Gate threshold voltage	Trench MOS			
PH	B = D ² PAK	44 = 44 A	N = N-ch	Q = low gate charge Q_{GD}	02 = 20 V	'Blank' = Standard level	T = Trench			
PH	D = DPAK	33 = 33 A	P = P-ch		03 = 25 - 30 V	L = logic level				
PH	P = TO220AB	20 = 20 A			06 = 55 - 60 V					
PH	T = SOT223	12 = 12 A			08 = 75 - 80 V					
PH	X = SOT186A (isolated TO220AB)				10 = 100 V					
PH	K = SO8				11 = 110 V					
PH	KD = Dual SO8				15 = 150 V					

100V N-channel MOSFETs

Package	Typenumber	V _{DS} [max] (V)	R _{DS(on)} [max] @ V _{GS} = 10 V (mΩ)	I _D [max] (A)	Q _{g(tot)} [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5 	<i>PSMN3R8-100BS</i>	100	3.9	120	170
	<i>PSMN5R6-100BS</i>		5.6	100	141
	<i>PSMN7R0-100BS</i>	100	6.8	100	125
	PSMN009-100B	100	8.8	75	156
	<i>PSMN9R5-100BS</i>	100	9.6	89	82
	<i>PSMN013-100BS</i>	100	13.9	68	59
	PSMN015-100B	100	15	75	90
	<i>PSMN016-100BS</i>	100	16	57	49
	PHB45NQ10T	100	25	47	61
	<i>PSMN027-100BS</i>	100	26.8	37	30
	PHB47NQ10T	100	28	47	66
	PSMN034-100BS	100	34.5	32	23.8
DFN3333-8 (SOT873-1) 3.3 x 3.3 x 1.0 	PSMN035-100LS	100	32	27	23
DPAK (SOT428) 6.5 x 10.0 x 2.3 	PSMN025-100D	100	25	47	61
I ² PAK (SOT226) 10.0 x 14.0 x 4.5 	PSMN4R3-100ES	100	4.3	120	170
	PSMN5R0-100ES	100	5	120	170
	PSMN7R0-100ES	100	6.8	100	125
	PSMN013-100ES	100	13.9	68	59
Power-SO8 (LFPAK) 5.0 x 6.0 x 1.1 	PSMN012-100YS	100	12	60	64
	PSMN016-100YS	100	16.3	51	54
	PSMN020-100YS	100	20.5	43	41
	PSMN028-100YS	100	27.5	42	33
	PSMN039-100YS	100	39.5	28.1	23
	PSMN069-100YS	100	72.4	17	14
SC-73 (SOT223) 6.5 x 7.0 x 1.8 	PHT6NQ10T	100	90	6.5	21
	PHT4NQ10T	100	250	3.5	7.4
	BSP110	100		0.52	
	PHT4NQ10LT	100		3.5	6.8
SO8 (SOT96) 5.0 x 6.0 x 1.3 	PHK12NQ10T	100	28	11.6	35
	PSMN038-100K	100	38		43
	PHK03NQ10T	100	90	3	21
TO-220AB (SOT78) 15.5 x 10.0 x 4.3 	PSMN4R3-100PS	100	4.3	120	170
	PSMN5R0-100PS	100	5	120	170
	PSMN5R6-100PS	100	5.6	100	141
	PSMN7R0-100PS	100	6.8	100	125
	PSMN009-100P	100	8.8	75	156
	PSMN9R5-100PS	100	9.6	89	82
	PSMN013-100PS	100	13.9	68	59
	PSMN015-100P	100	15	75	90
	PSMN016-100PS	100	16	57	49
	PHP45NQ10T	100	25	47	61
	PSMN027-100PS	100	26.8	37	30
	PSMN034-100PS	100	34.5	32	23.8
	PHP18NQ10T	100	90	18	21
TO-220F (SOT186A) 15.5 x 10.0 x 4.3 	<i>PSMN5R6-100XS</i>	100	5.6	61.8	145
	<i>PSMN7R0-100XS</i>	100	6.8	55	121
	<i>PSMN9R5-100XS</i>	100	9.6	44.2	81.5
	<i>PSMN013-100XS</i>	100	13.9	35.2	57.5
	<i>PSMN016-100XS</i>	100	16	32.1	46.2
	<i>PSMN027-100XS</i>	100	26.8	23.4	30
TO-236AB (SOT23) 2.9 x 1.3 x 1.0 	PMV213SN	100	250	1.9	7
	BSH114	100	500	0.85	4.6
	BSS123	100	6000	0.15	
	BST82	100		0.19	

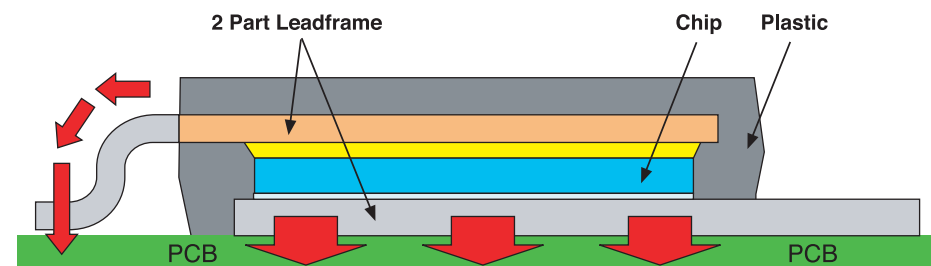
Types in ***bold red italic underline*** represent products in development

105 V – 150 V N-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5 	PSMN030-150B	150	30	55.5	98
	PSMN035-150B	150	35	50	79
	PHB45NQ15T	150	42	45.1	32
DPAK (SOT428) 6.5 x 10.0 x 2.3 	PSMN063-150D	150	63	29	55
Power-SO8 (LFAK) 5.0 x 6.0 x 1.1 	PSMN059-150Y	150	59	43	27.9
SO8 (SOT96) 5.0 x 6.0 x 1.3 	PHK5NQ15T	150	75	5	29
	PSMN085-150K	150	85		40
TO-220AB (SOT78) 15.5 x 10.0 x 4.3 	PHP45NQ11T	105	25	47	60
	PSMN015-110P	110	15	75	90
	PHP27NQ11T	110	50	27.6	30
	PHP23NQ11T	110	70	23	22
	PHP18NQ11T	110	90	18	21
	PSMN030-150P	150	30	55.5	98
	PSMN035-150P	150	35	50	79
	PHP30NQ15T	150	63	29	55
	PHP28NQ15T	150	65	28.5	24

Power-SO8 (LFAK) Design

- Low Thermal resistance
- Low Electrical resistance
- Low Inductance



200 V – 300 V N-channel MOSFETs

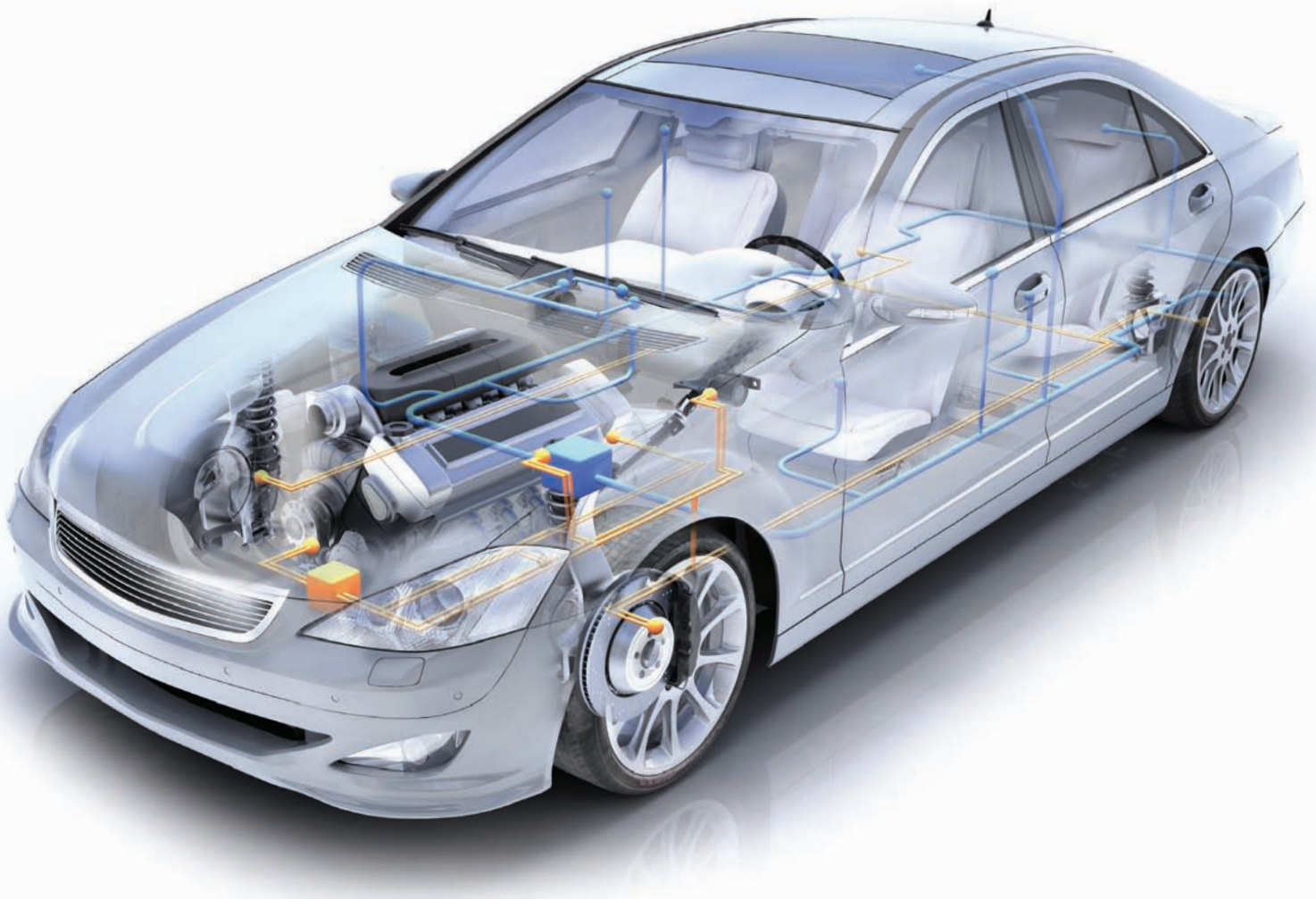
Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
D ² PAK (SOT404) 10.0 x 15.0 x 4.5 	PSMN057-200B	200	57	39	96
	PSMN070-200B	200	70	35	77
	PHB33NQ20T	200	77	32.7	32.2
	PHB20NQ20T	200	130	20	65
DFN3333-8 3.3 x 3.3 x 1.0 	PML2605N	200	294	8.8	13.3
	PML3405N	220	386	7.3	13.2
DPAK (SOT428) 6.5 x 10.0 x 2.3 	PSMN130-200D	200	130	20	65
	PHD9NQ20T	200	400	8.7	24
Power-SO8 (LFPACK) 5.0 x 6.0 x 1.1 	PSMN102-200Y	200	102	21.5	30.7
SC-73 (SOT223) 6.5 x 7.0 x 1.8 	BSP122	200	2500	0.55	
	BSP89	240	5000	0.375	
	BSP126	250	5000	0.375	
	BSP130	300	6000	0.35	
SO8 (SOT96) 5.0 x 6.0 x 1.3 	PSMN165-200K	200	165		40
	PHC2300	300	6000		6.24
SOT89 4.5 x 2.5 x 1.5 	BSS87	200	3000	0.4	
TO-220AB (SOT78) 15.5 x 10.0 x 4.3 	PSMN057-200P	200	57	39	96
	PSMN070-200P	200	70	35	77
	PHP33NQ20T	200	77	32.7	32.2
	PHP20NQ20T	200	130	20	65
	PHP9NQ20T	200	400	8.7	24

P-channel MOSFETs

Package	Typenumber	V_{DS} [max] (V)	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m Ω)	$R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ (m Ω)	I_D [max] (A)	$Q_{G(tot)}$ [typ] (nC)
DFN2020-6 (SOT1118) 2.0 x 2.0 x 0.65	PMDPB65UP	-20		70	-3.5	4.5
SC-70 (SOT323) 2.0 x 1.25 x 0.95	BSS84AKW	-50	7500		-0.15	0.26
	NX3008PBKW	-30		4100	-0.2	0.55
	PMF170XP	-20		200	-1	2.6
SC-73 (SOT223) 6.5 x 7.0 x 1.8	BSP230	-300	17000			
	BSP225	-250	15000		-0.225	
	BSP220	-200	12000		-0.225	
	BSP250	-30	250	400		
SC-75 (SOT416) 1.6 x 0.8 x 0.77	BSS84AKT	-50	7500		-0.15	0.26
	NX3008PBKT	-30		4100	-0.2	0.55
	PMR670UPE	-20		850	-0.48	0.76
SO8 (SOT96) 5.0 x 6.0 x 1.3	PMK30EP	-30	19	30	-14.9	50
	PMK35EP	-30	19	35	-14.9	42
	PHP225	-30	250	400		10
	PMK50XP	-20		50	-7.9	10
	PHK04P02T	-16		120	-4.66	7.2
SOT666 1.6 x 1.2 x 0.55	BSS84AKV	-50	7500		-0.17	0.26
	NX3008PBKV	-30		4100	-0.22	0.55
	PMDT670UPE	-20		850	-0.55	0.76
DFN1006-3 (SOT883) 1.0 x 0.6 x 0.5	BSS84AKM	-50	7500		-0.23	0.26
SOT89 4.5 x 2.5 x 1.5	BSS192	-240	12000		-0.2	
TO-236AB (SOT23) 2.9 x 1.3 x 1.0	BSH201	-60	2500		-0.3	
	BSS84AK	-50	7500		-0.18	0.26
	BSS84	-50	10000		-0.13	
	BSH202	-30	900		-0.52	
	BSH203	-30		900	-0.47	2.2
	NX3008PBK	-30		4100	-0.23	0.55
	NX2301P	-20		120	-2	4.5
	PMV160UP	-20		210	-1.2	3.3
	PMV32UP	-20		36	-4	15.5
	PMV48XP	-20		55	-3.5	8.5
	PMV65XP	-20		76	-3.9	7.6
	BSH205	-12			-0.75	
TSOP6 (SOT457) 2.9 x 1.5 x 1.0	PMN27UP	-20		32	-5.7	21
	PMN34UP	-20		40	-5	15.5
	PMN48XP	-20		55	-4.1	8.7
	BSH207	-12			-1.52	
TSSOP6 (SOT363) 2.0 x 1.25 x 0.95	BSS84AKS	-50	7500		-0.16	0.26
	NX3008PBKS	-30		4100	-0.2	0.55
	PMG85XP	-20		115	-2	4.8

Multi-chip MOSFETs

Package	Typenumber	V_{DS} [max] (V)	channel type	$R_{DS(on)}$ [max] @ $V_{GS} = 10\text{ V}$ (m Ω)	$R_{DS(on)}$ [max] @ $V_{GS} = 4.5\text{ V}$ (m Ω)	I_D [max] (A)
DFN2020-6 (SOT1118) 2.0 x 2.0 x 0.65	PMDPB65UP	P	-20		70	-3.5
SO8 (SOT96) 5.0 x 6.0 x 1.3	PHP225	P	-30	250	400	
	PHKD6N02LT	N	20			10.9
	PHKD13N03LT	N	30	20	26	10.4
	PHN203	N	30	30	55	6.3
	PHN210T	N	30	100	200	3.4
	PHC21025	N/P	30	250	400	
	PHKD3NQ10T	N	100	90		3
SOT666 1.6 x 1.2 x 0.55	PHC2300	N/P	300	6000		
	BSS84AKV	P	-50	7500		-0.17
	NX3008CBKV	N/P	-30		1400	0.4
	NX3008PBKV	P	-30		4100	-0.22
	PMDT290UCE	N/P	-20		380	0.8
	PMDT670UPE	P	-20		850	-0.55
	PMDT290UNE	N	20		380	0.8
	NX3008NBKV	N	30		1400	0.4
TSSOP6 (SOT363) 2.0 x 1.25 x 0.95	2N7002BKV	N	60	1600		0.34
	2N7002PV	N	60	1600		0.35
	BSS84AKS	P	-50	7500		-0.16
	NX3008CBKS	N/P	-30		1400	0.35
	NX3008PBKS	P	-30		4100	-0.2
	PMGD290XN	N	20		350	0.86
	NX3008NBKS	N	30		1400	0.35
	PMGD370XN	N	30		440	0.74
	PMGD400UN	N	30		480	0.71
	PMGD8000LN	N	30			0.125
	PMGD780SN	N	60	920	1400	0.49
	2N7002BKS	N	60	1600		0.3
	2N7002PS	N	60	1600		0.32
	BSS138PS	N	60	1600		0.32



Power MOSFETs for Automotive Applications

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)	I ² PAK (SOT226)	D ² PAK-7 (SOT427)	D ² PAK (SOT404)	DPAK (SOT428)	LFAK (SOT669)
									
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1
1.6	2.5	120	0.49				BUK661R6-30C		
1.8		100	0.45				BUK761R8-30C		
1.9	2.8	120	0.57				BUK661R8-30C		
2.2	3	120	0.45	BUK652R0-30C	BUK6E2R0-30C				
2.4	2.8	75	0.5	BUK952R8-30B			BUK962R8-30B		
2.4	3	120	0.59	BUK652R1-30C					
2.7		75	0.5	BUK752R7-30B	BUK7E2R7-30B		BUK762R7-30B		
2.8	3.9	100	0.74				BUK662R5-30C		
3.0	4.0	75	0.59		BUK9E04-30B				
3.3	4.4	100	0.74	BUK653R3-30C					
3.4		75	0.59	BUK753R4-30B			BUK763R4-30B		
3.8	5.8	100	0.95	BUK653R7-30C					
3.9	5.2	100	0.95				BUK663R5-30C		
4.5	6	90	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	
5.2	7.5	90	1.17					BUK625R2-30C	
6	7	75	1.42						BUK9Y07-30B
7		75	1.42						BUK7Y07-30B
7		75	0.95	BUK7507-30B			BUK7607-30B	BUK7207-30B	
9	11	59	2						BUK9Y11-30B
9.8	15	50	1.87					BUK6209-30C	
10		67	1.76						BUK7Y10-30B
11	13	75	1					BUK9213-30A	
12	14	63	1.4					BUK9214-30A	
13		55	1.4					BUK6213-30A	
14	22	37	2.52					BUK6213-30C	
19	22	37	2.53						BUK9Y22-30B
20		39	2.53						BUK7Y20-30B

Types in **bold red** represent new products

Automotive TrenchMOS Part Numbering

Automotive
Qualified MOSFET

BUK a b rRr - vv X

Technology
6 = intermediate level TrenchMOS
7 = standard level TrenchMOS
9 = logic level TrenchMOS

Package identifier
2 = DPAK (SOT428)
5 = TO220 (SOT78x)
6 = D²PAK (SOT404)
8 = SOT223
C = 7 pin D²PAK (SOT427)
E = I²PAK (SOT226)
Y = LFAK (SOT669)

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

Voltage rating

R_{DSon} in mΩ where
R = decimal point

brb582

40 V N-channel Automotive TrenchMOS

$R_{DS(on)}$ [max] @ 10 V [mΩ]	$R_{DS(on)}$ [max] @ 5 V [mΩ]	I_D [max] @ 25 °C [A]	$R_{th(j-mb)}$ [max] [K/W]	3-lead TO-220AB (SOT78A) 	I ² PAK (SOT226) 	D ² PAK-7 (SOT427) 	D ² PAK (SOT404) 	DPAK (SOT428) 	LFAK (SOT669) 
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1
1.44	2.1	220	0.48			<i>BUK6C1R5-40C</i>			
1.9	2.6	120	0.45				<i>BUK661R9-40C</i>		
2		100	0.45				BUK762R0-40C		
2.3	3.1	120	0.45	<i>BUK652R3-40C</i>	<i>BUK6E2R3-40C</i>				
2.3	3.2	120	0.59				<i>BUK662R4-40C</i>		
2.3		100	0.45	BUK752R3-40C	BUK7E2R3-40C				
2.7	3.8	120	0.59	<i>BUK652R6-40C</i>					
2.8	3.2	100	0.5	BUK953R2-40B	BUK9E3R2-40B		BUK963R2-40B		
3.1		75	0.5	BUK753R1-40B			BUK763R1-40B		
3.2	4.8	100	0.74				<i>BUK663R2-40C</i>		
3.6	5.3	100	0.74	<i>BUK653R4-40C</i>	<i>BUK6E3R4-40C</i>				
3.6		100	0.74				<i>BUK763R6-40C</i>		
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		100	0.74	<i>BUK754R0-40C</i>					
4		75	0.74						
4.3		75	0.59	BUK754R3-40B			BUK764R3-40B		
4.5		75	0.5	BUK7504-40A	BUK7E04-40A		BUK7604-40A		
4.6	6.1	100	0.95				<i>BUK664R6-40C</i>		
4.8	6.5	100	0.95	<i>BUK654R8-40C</i>					
5.0	6.4	75	0.74	BUK9506-40B			BUK9606-40B		
5.0	6.9	90	0.95					<i>BUK625R0-40C</i>	
5.0		75	0.95					<i>BUK725R0-40C</i>	
5.2		75	0.74	BUK755R2-40B			BUK765R2-40B		
6.2	8.8	90	1.17					<i>BUK626R2-40C</i>	
7	9	75	0.95	BUK9509-40B			BUK9609-40B	BUK9209-40B	
7		75	0.95						
8	9	75	1.42						<i>BUK9Y09-40B</i>
8		75	0.95	BUK7508-40B			BUK7608-40B		
8		75	1.42						<i>BUK7Y08-40B</i>
8		75	0.95					BUK7208-40B	
11	14	56	1.8						BUK9Y14-40B
11.2	16.3	50	1.87					<i>BUK6212-40C</i>	
13		58	1.8						BUK7Y13-40B
16	23	42	2.52					<i>BUK6218-40C</i>	
24	27	34	2.53						<i>BUK9Y27-40B</i>
25		35	2.53						<i>BUK7Y25-40B</i>

Types in **bold red** represent new products - 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)	I ² PAK (SOT226)	D ² PAK-7 (SOT427)	D ² PAK (SOT404)	DPAK (SOT428)	LFPACK (SOT669)	SC-73 (SOT223)
										
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1	6.5 x 7.0 x 1.8
2.41		170	0.48			BUK6C2R1-55C				
2.7	3.8	120	0.45				BUK662R7-55C			
3.2	4.2	120	0.45	BUK653R2-55C	BUK6E3R2-55C					
3.4	4.3	120	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						
4.9	6.6	100	0.74				BUK664R4-55C			
5.4	6	75	0.58	BUK9506-55B	BUK9E06-55B		BUK9606-55B			
5.4	7	92.6	0.74	BUK654R6-55C						
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			
6.5	8.7	100	0.95				BUK6607-55C			
7	8.4	75	0.74	BUK9508-55B	BUK9E08-55B		BUK9608-55B			
7	9	72	0.95	BUK6507-55C						
7.1		75	0.74	BUK7507-55B	BUK7E07-55B		BUK7607-55B			
7.5	8	75	0.59				BUK9608-55A			
7.8	10	90	0.95					BUK6207-55C		
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			
9.6	13.2	78	1.17					BUK6210-55C		
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	12	65	1.42						BUK9Y12-55B	
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	18	61	1.1	BUK9518-55A			BUK9618-55A			
16		65	1.1	BUK7516-55A						
17	19	46	1.8						BUK9Y19-55B	

Types in **bold red** represent new products

55 V N-channel Automotive TrenchMOS

R _{DS(on)} [max] @ 10 V [mΩ]	R _{DS(on)} [max] @ 5 V [mΩ]	I _D [max] @ 25 °C [A]	R _{th(j-mb)} [max] [K/W]	3-lead TO-220AB (SOT78A)	I ² PAK (SOT226)	D ² PAK-7 (SOT427)	D ² PAK (SOT404)	DPAK (SOT428)	LFPACK (SOT669)	SC-73 (SOT223)
										
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1	6.5 x 7.0 x 1.8
17.6	19	55	1.3					BUK9219-55A		
18	20	54	1.2	BUK9520-55A			BUK9620-55A			
18		47	1.76						BUK7Y18-55B	
19	24.5	44	1.87					BUK6217-55C		
19		55	1.3					BUK7219-55A		
20	22	48	1.5					BUK9222-55A		
20		54	1.2	BUK7520-55A			BUK7620-55A			
21.7	24	46	1.4	BUK9524-55A			BUK9624-55A			
22	25	43	1.6					BUK9225-55A		
22		48	1.5					BUK7222-55A		
25	28	42	1.56				BUK9628-55A			
25		43	1.6					BUK7225-55A		
27	30	38	1.7					BUK9230-55A		
28		42	1.5	BUK7528-55A			BUK7628-55A			
29	32	12	15							BUK9832-55A
29	38	31	2.52					BUK6228-55C		
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** represent new products

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)	I ² PAK (SOT226)	D ² PAK-7 (SOT427)	D ² PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)
									
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1
3.56		140	0.48			BUK6C3R3-75			
4.0	5.3	120	0.45				BUK663R7-75C		
4.0		100	0.45				BUK764R0-75C		
4.2	5.3	120	0.45	BUK654R0-75C	BUK6E4R0-75C				
4.3		100	0.45	BUK754R3-75C	BUK7E4R3-75C				
5.0	6.3	120	0.59				BUK664R8-75C		
5.3	6.5	120	0.59	BUK655R0-75C					
5.5	6.1	75	0.5	BUK9506-75B			BUK9606-75B		
5.6		75	0.5	BUK7506-75B			BUK7606-75B		
7.6	9.1	100	0.74	BUK6507-75C			BUK6607-75C		
8.5	9	75	0.65	BUK9509-75A			BUK9609-75A		
9.0		75	0.65	BUK7509-75A			BUK7609-75A		
10.4	12.4	77	0.95	BUK6510-75C			BUK6610-75C		
11	13.2	74	0.95					BUK6211-75C	
13		75	0.95	BUK7513-75B			BUK7613-75B		
14	16.4	67	0.95	BUK9516-75B			BUK9616-75B		
14		70	0.95					BUK7214-75B	
15	17	64	0.95					BUK9217-75B	
15	18	57	1.17					BUK6215-75C	
18	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	30	34	1.8						BUK9Y30-75B
28		35	1.76						BUK7Y28-75B
29	35	33	1.87					BUK6226-75C	
46	56	16	2.52					BUK6246-75C	
53	58	20	2.53						BUK9Y58-75B
54		21	2.53						BUK7Y54-75B

Types in **bold red** represent new products

100V 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)	I ² PAK (SOT226)	D ² PAK (SOT404)	DPAK (SOT428)	LFPAK (SOT669)	SC-73 (SOT223)
									
				15.5 x 10.0 x 4.3	10.0 x 14.0 x 4.5	10.0 x 15.0 x 4.5	6.5 x 10.0 x 2.3	5.0 x 6.0 x 1.1	6.5 x 7.0 x 1.8
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	20	63	0.75	BUK9520-100A					
19		64	0.75			BUK7619-100B			
20		63	0.75	BUK7520-100A		BUK7620-100A			
26		49	0.95	BUK7526-100B		BUK7626-100B			
27	28	49	0.9			BUK9628-100A			
27	29	46	0.95	BUK9529-100B		BUK9629-100B			
27		48	0.95				BUK7227-100B		
28	30	47	0.95				BUK9230-100B		
28		47	0.9	BUK7528-100A		BUK7628-100A			
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		
99	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

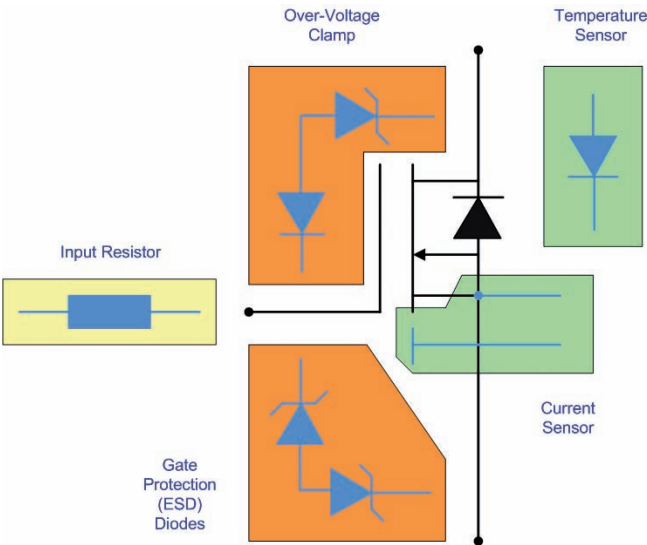
Types in **bold red** represent new products

TrenchPLUS MOSFETs

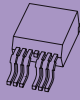
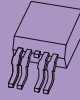
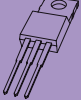
TrenchPLUS is a range of standard MOSFETs with additional protection features, such as current and temperature sensing components, overvoltage clamps, and gate protection (ESD) diodes. The system microcontroller can use data gathered from these

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)	$R_{DS(on)}$ (max) @ 10 V (m Ω)	$R_{DS(on)}$ (max) @ 5 V (m Ω)	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 D ² PAK (SOT427)	5-pin D ² PAK (SOT426)	SO20 (SOT163)	TO220AB (SOT78C)	5-pin TO220 (SOT263B-01)
													
									10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	13.0 x 10.0 x 2.65	15.0 x 10.0 x 4.5	10.0 x 19.0 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)	$R_{DS(on)}$ (max) @ 10 V (mΩ)	$R_{DS(on)}$ (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 D ² PAK (SOT427)	5-pin D ² PAK (SOT426)	SO20 (SOT163)	TO220AB (SOT78C)	5-pin TO220 (SOT263B-01)
													
									10.0 x 15 x 4.5	10.0 x 15.0 x 4.5	13.0 x 10.0 x 2.65	15.0 x 10.0 x 4.5	10.0 x 19.0 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				

Automotive TrenchPLUS Part Numbering

Automotive
Qualified MOSFET

BUK a b rRr - vv X ddd

Technology
7 = Standard level TrenchMOS
9 = Logic level TrenchMOS

Package identifier
1 = 5 pin D²PAK (SOT426)
9 = 5 pin TO220 (SOT263B-01)
C = 7 pin D²PAK (SOT427)
L = TO220AB (SOT78C)
M = SO20 (SOT163)

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

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

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

Voltage rating

brb583

Notes

[illegible]

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