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# Automotive Power Selection Guide 2018

Ultimate power – perfect control

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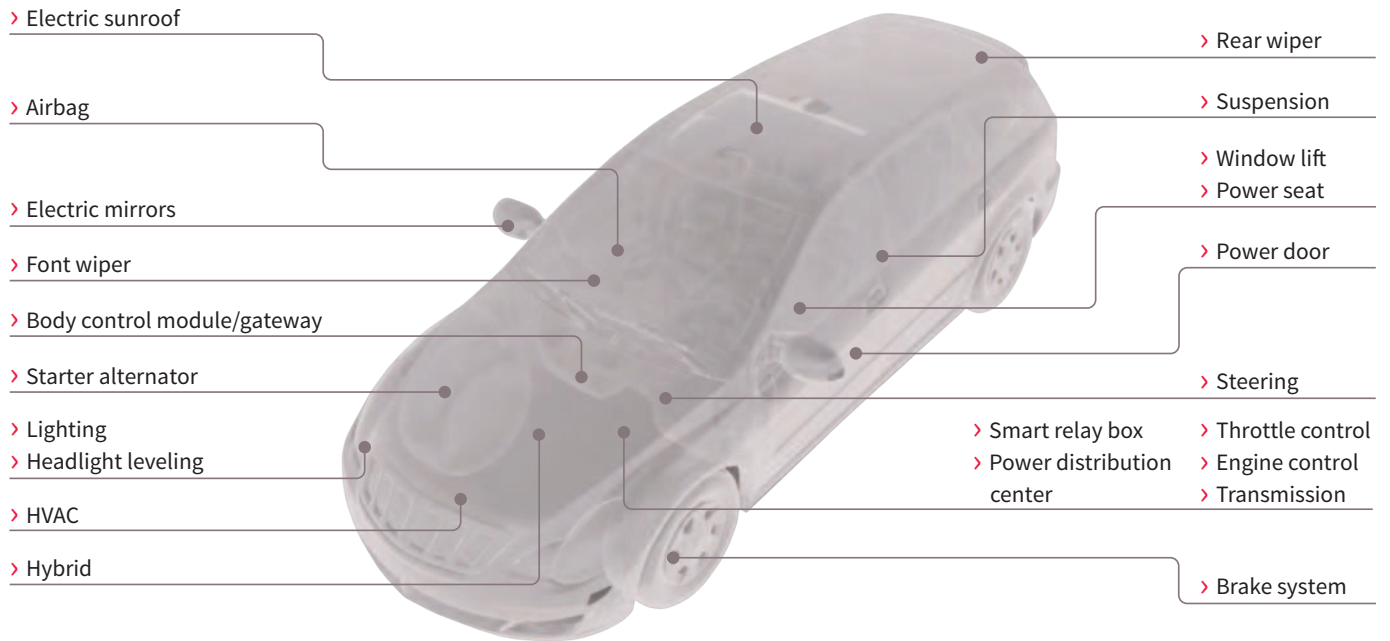
The ultimate power to control your applications including automotive, transportation, industrial, lighting and motor control.

For a comprehensive and reliable portfolio of products for automotive and other applications, look no further than the product range from Infineon. We have used our 40 years of experience of developing and producing products to meet the demands of the automotive market, and our innovative technologies to design and produce a large number of power products that meet all requirements of the automotive industry and also the transportation, lighting and motor-drive industries.

Our commitment to quality is demonstrated through our focus on automotive excellence, the most rigorous zero defect program in the industry.

This selection guide provides an overview of our ICs and their packages, which are automotive qualified (AEC-Q100 or AEC-Q101) and available for your current and future electronic system designs.

## Automotive applications



## Automotive power components used in other applications







# We shape the future of mobility

With microelectronics enabling clean, safe, smart cars

For leading solutions in automotive electronics from the pioneer in the industry, turn to Infineon Technologies. Choose our semiconductors for your body, powertrain, safety, and hybrid and electric vehicle applications and profit from products resulting from nearly 40 years of experience in automotive applications and standards. Our commitment to innovation and high quality means you can count on us to successfully drive your applications into the tomorrow and beyond.

- › Car IT-security and connectivity
- › Hybrid and electric powertrain
- › Safety and ADAS
- › Body and convenience
- › Powertrain

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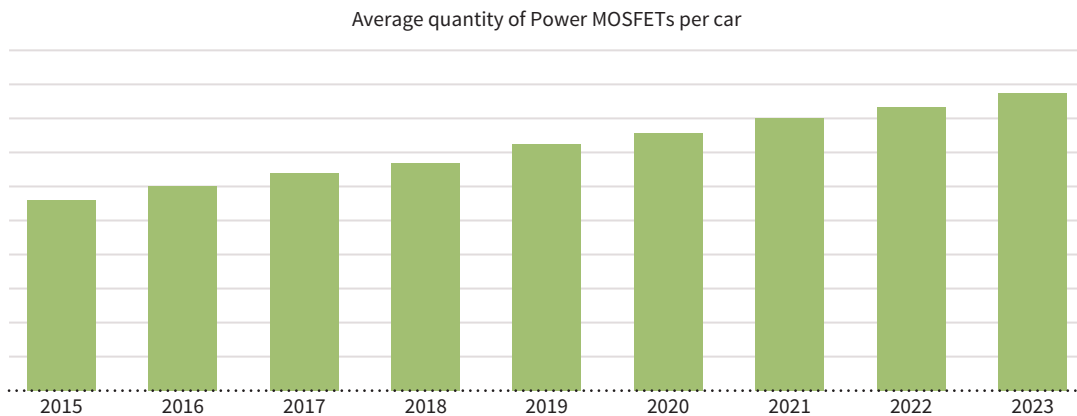
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# Automotive MOSFETs do contribute to your success

We offer you high quality beyond AEC-Q101

The amount of power MOSFETs per car continuously increases, as more features are embedded in every new car sold worldwide. The amount of MOSFETs becomes even higher in electric high-end cars where up to 400 MOSFETs can be found in a single car. For this reason it gets more and more important to use high quality Automotive MOSFETs.



All Automotive qualified MOSFETs are following the AEC-Q101 qualification standard. Infineon does more than that in order to achieve more robust products and a very low dpm rate.

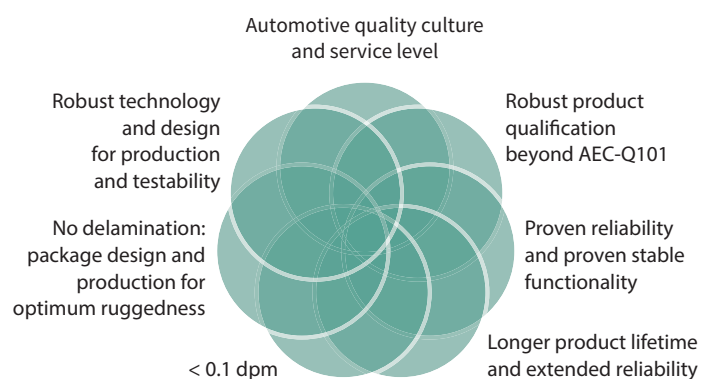
Why is AEC-Q101 not enough for us?

- > It may not cover “untypical or stringent” mission profiles
- > It does not provide any indication on the stability of the manufacturing process over the years
- > It doesn’t prove any dpm below 10 000

How do we achieve the best quality you can get in the market?

- > Robustness
  - Strong application know-how, good requirement capturing for product, technology and process roadmaps
  - Dedicated Automotive Design Goals based on 40 years of experience in automotive
  - Stringent product monitoring/process controls
  - Enhanced test coverage
- > Enhanced testing and qualification
  - More than just the datasheet parameters
  - Qualification beyond AEC-Q101
  - Usage of PAT (Part Average Testing) in front-end and back-end for power MOSFET

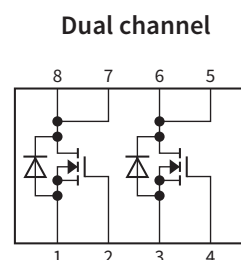
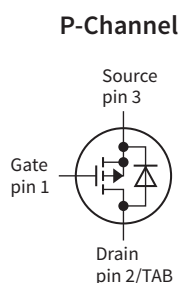
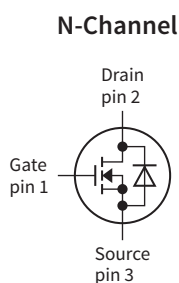
What have we achieved so far?



# OptiMOS™ Automotive MOSFETs

Infiniteon automotive MOSFET portfolio offers benchmark quality, wide voltage range and diversified package

- › Best in class  $R_{DS(on)}$  performance for increased system efficiency
- › Lowest switching and conduction power losses for increased thermal system reliability
- › Benchmark for quality and reliability
- › Wide voltage range from 24 to 300 V for N-Channel FET, and from 20 to 150 V for P-Channel FET
- › Robust green package for easy process handling
- › Diversified package portfolio caters to customers' needs for
  - Package size minimization (down to 11 mm<sup>2</sup> in S308)
  - High current capability (up to 300 A in TOLL)

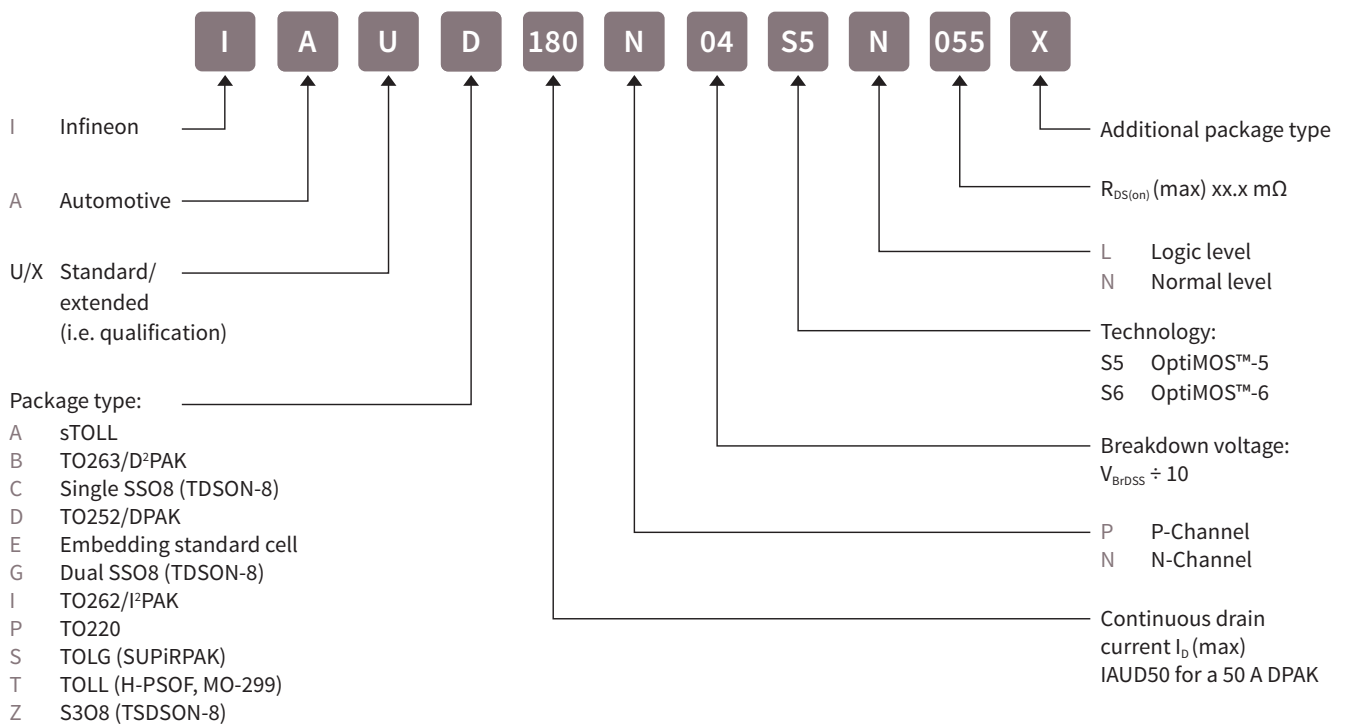


Polarity	Voltage class [V]	Trench MOSFET					Planar MOSFET			
		OptiMOS™-5	OptiMOS™-T2	OptiMOS™-T	Gen12.7 former IR MOSFETs	Gen10.7 former IR MOSFETs	Gen10.2 former IR MOSFETs	OptiMOS™	Gen7 former IR MOSFETs	Gen5 former IR MOSFETs
N-Channel	24						•			
N-Channel	30		•				•	•	•	•
N-Channel	40	•	•	•	•	•	•	•	•	
N-Channel	55						•	•	•	•
N-Channel	60		•			•	•	•	•	
N-Channel	75					•	•	•	•	
N-Channel	80	•	•							
N-Channel	100	•	•	•		•	•			•
N-Channel	120		•							
N-Channel	150					•				•
N-Channel	200					•				
N-Channel	250			•		•				
N-Channel	300					•				
P-Channel	20									•
P-Channel	30		•							•
P-Channel	40		•							
P-Channel	55									•
P-Channel	100									•
P-Channel	150									•
Dual N-Channel	2 x 30									•
Dual N-Channel	2 x 40		•		•					
Dual N-Channel	2 x 50									•
Dual N-Channel	2 x 55						•			•
Dual N-Channel	2 x 60		•							
Dual N-Channel	2 x 100		•							
Dual P-Channel	2 x 20									•
Dual P-Channel	2 x 30									•
Dual P-Channel	2 x 55									•
Dual N+P Channel	2 x 30									•
Dual N+P Channel	2 x 55									•

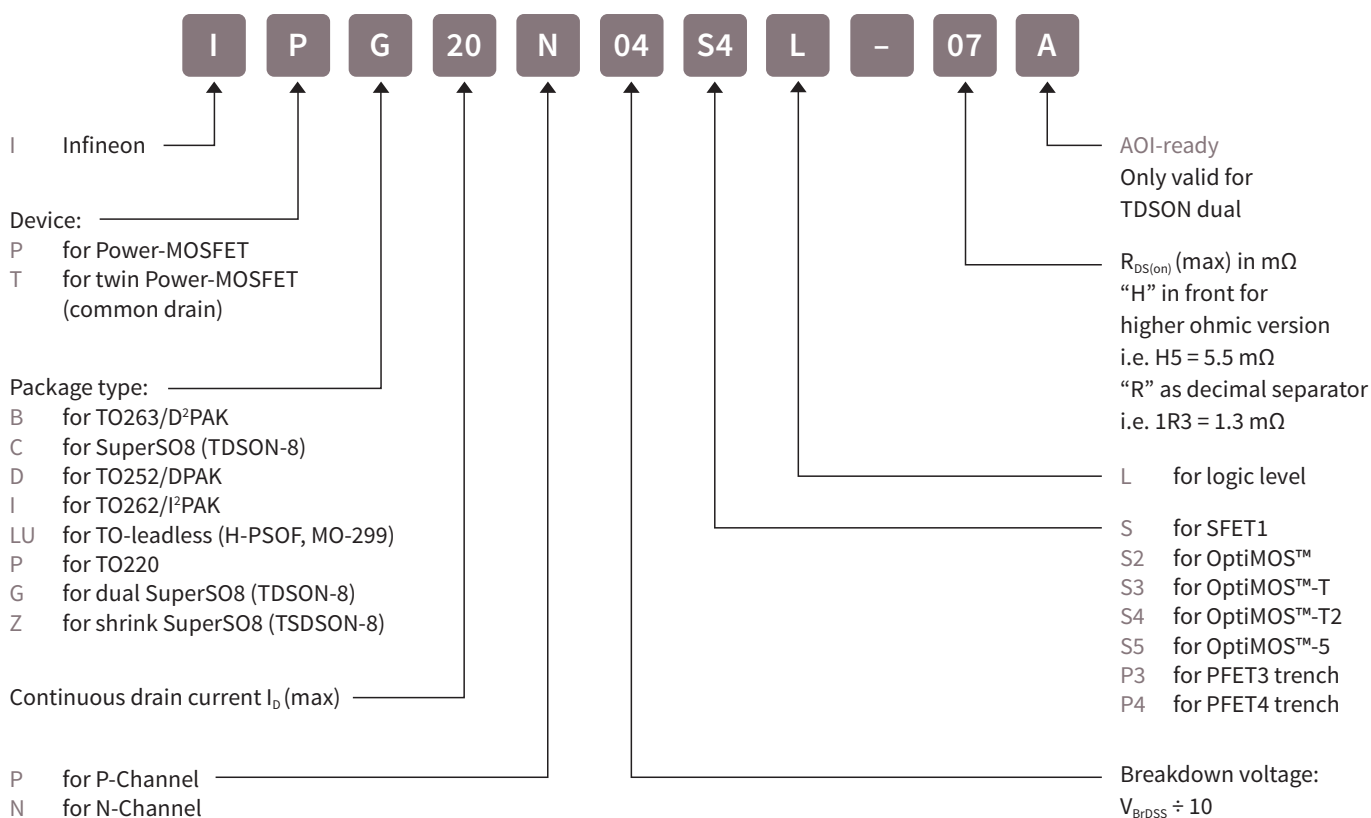




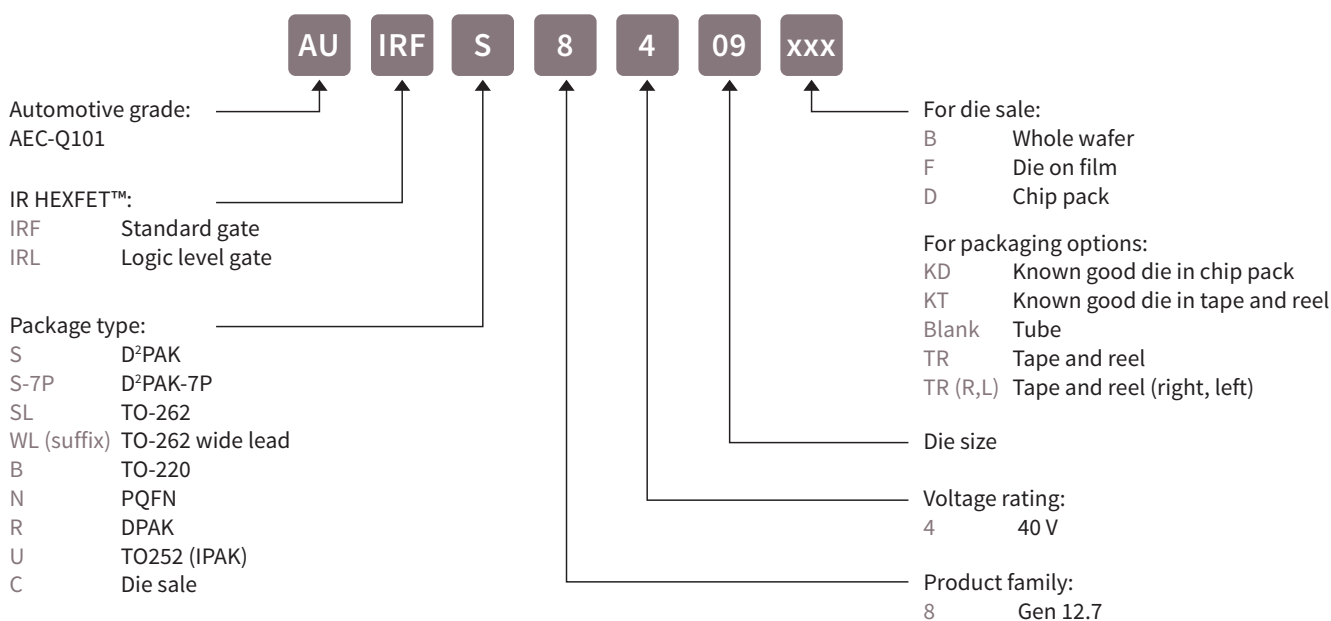
## Automotive MOSFET naming system for new products



## Infineon automotive MOSFET naming system



## Former IRF COOLiRFET™ naming system



# Automotive N-Channel MOSFETs

## 24 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF1324S-7P	Gen 10.2	1.00	240	0.50	2.00 ... 4.00	180	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRF1324WL	Gen 10.2	1.30	240	0.50	2.00 ... 4.00	120	Normal	TO-262 WideLead
AUIRF1324	Gen 10.2	1.50	195	0.50	2.00 ... 4.00	160	Normal	TO-220
AUIRFP2602	Gen 10.2	1.60	180	0.40	2.00 ... 4.00	260	Normal	TO-247
AUIRF1324S	Gen 10.2	1.65	195	0.50	2.00 ... 4.00	160	Normal	TO-263-3 (D <sup>2</sup> PAK)

## 30 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPB240N03S4L-R8	OptiMOS™-T2	0.76	240	0.50	1.00 ... 2.20	290	Logic	TO263-7-3
IPB240N03S4L-R9	OptiMOS™-T2	0.92	240	0.70	1.00 ... 2.20	230	Logic	TO263-7-3
IPB180N03S4L-H0	OptiMOS™-T2	0.95	180	0.60	1.00 ... 2.20	230	Logic	TO263-7-3
IPB180N03S4L-01	OptiMOS™-T2	1.05	180	0.80	1.00 ... 2.20	187	Logic	TO263-7-3
IPD90N03S4L-02	OptiMOS™-T2	2.20	90	1.10	1.00 ... 2.20	110	Logic	TO252-3 (DPAK)
IPB80N03S4L-02	OptiMOS™-T2	2.40	80	1.10	1.00 ... 2.20	110	Logic	TO263-3-2
AUIRF2903ZL	Gen 10.2	2.40	160	0.65	2.00 ... 4.00	160	Normal	TO-262
AUIRF2903ZS	Gen 10.2	2.40	160	0.65	2.00 ... 4.00	160	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPI80N03S4L-03	OptiMOS™-T2	2.70	80	1.10	1.00 ... 2.20	110	Logic	TO262-3
IPP80N03S4L-03	OptiMOS™-T2	2.70	80	1.10	1.00 ... 2.20	110	Logic	TO220-3
IPB120N03S4L-03	OptiMOS™-T2	3.00	120	1.90	1.00 ... 2.20	55	Logic	TO263-3-2
IPD90N03S4L-03	OptiMOS™-T2	3.30	90	1.60	1.00 ... 2.20	60	Logic	TO252-3 (DPAK)
IPB80N03S4L-03	OptiMOS™-T2	3.40	80	1.60	1.00 ... 2.20	60	Logic	TO263-3-2
IPD70N03S4L-04	OptiMOS™-T2	4.30	70	2.20	1.00 ... 2.20	37	Logic	TO252-3 (DPAK)
IPD50N03S4L-06	OptiMOS™-T2	5.50	50	2.70	1.00 ... 2.20	24	Logic	TO252-3 (DPAK)
IPD40N03S4L-08	OptiMOS™-T2	8.00	40	3.60	1.00 ... 2.20	15	Logic	TO252-3 (DPAK)
IPD30N03S4L-09	OptiMOS™-T2	9.00	30	3.60	1.00 ... 2.20	15	Logic	TO252-3 (DPAK)
IPD30N03S4L-14	OptiMOS™-T2	13.60	30	4.90	1.00 ... 2.20	11	Logic	TO252-3 (DPAK)
IPB22N03S4L-15	OptiMOS™-T2	14.60	22	4.90	1.00 ... 2.20	11	Logic	TO263-3-2

## 40 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF8739L2	Gen 12.7	0.60	375	0.44	2.20 ... 3.90	375.00	Normal	DirectFET™2 L8
AUIRFS8409-7P	Gen 12.7	0.69	360	0.40	2.20 ... 3.90	305.00	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRSL8409-7P	Gen 12.7	0.75	240	0.40	1.00 ... 2.40	177.00	Logic	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRFS8409-7P	Gen 12.7	0.75	240	0.40	2.20 ... 3.90	305.00	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
IPLU300N04S4-R8	OptiMOS™-T2	0.77	300	0.35	2.00 ... 4.00	221.00	Normal	HSOF-8-1 (H-PSOF)
IPB240N04S4-R9	OptiMOS™-T2	0.87	240	0.50	2.00 ... 4.00	220.00	Normal	TO263-7-3
IPB180N04S4-00	OptiMOS™-T2	0.98	180	0.50	2.00 ... 4.00	220.00	Normal	TO263-7-3
IPB240N04S4-1R0	OptiMOS™-T2	1.00	240	0.65	2.00 ... 4.00	170.00	Normal	TO263-7-3
IPB180N04S4L-H0	OptiMOS™-T2	1.00	180	0.60	1.20 ... 2.20	239.00	Logic	TO263-7-3
AUIRF7739L2	Gen 10.7	1.00	270	1.20	2.00 ... 4.00	220.00	Normal	DirectFET™2 L8
AUIRFS8408-7P	Gen 12.7	1.00	240	0.51	2.20 ... 3.90	210.00	Normal	TO263-7-3

1) See packages on page 134 to 136



## 40 V (Trench) (cont'd)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPB180N04S4-H0	OptiMOS™-T2	1.10	180	0.60	2.00 ... 4.00	173.00	Normal	TO263-7-3
IPC100N04S5L-1R1	OptiMOS™-5	1.10	100	1.00	1.20 ... 2.00	105.00	Logic	TDSO8-8-34 SuperSO8 single
IPLU300N04S4-1R1	OptiMOS™-T2	1.15	300	0.50	2.00 ... 4.00	116.00	Normal	HSOF-8-1 (H-PSOF)
IPB180N04S4L-01	OptiMOS™-T2	1.20	180	0.80	1.20 ... 2.20	188.00	Logic	TO263-7-3
AUIRFS8409	Gen 12.7	1.20	195	0.40	2.20 ... 3.90	300.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFL8409	Gen 12.7	1.20	195	0.40	2.20 ... 3.90	300.00	Normal	TO-262
IPC100N04S5-1R2	OptiMOS™-5	1.20	100	1.00	2.20 ... 3.40	99.00	Normal	TDSO8-8-34 SuperSO8 single
IPB180N04S4-01	OptiMOS™-T2	1.30	180	0.80	2.00 ... 4.00	135.00	Normal	TO263-7-3
AUIRFB8409	Gen 12.7	1.30	195	0.40	2.20 ... 3.90	300.00	Normal	TO-220
AUIRFS8407-7P	Gen 12.7	1.30	240	0.65	2.20 ... 3.90	150.00	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRF3004WL	Gen 10.7	1.40	240	0.40	2.00 ... 4.00	140.00	Normal	TO-262 WideLead
AUIRLS3034-7P	Gen 10.7	1.40	240	0.40	1.00 ... 2.50	120.00	Logic	TO-263-7 (D <sup>2</sup> PAK 7-leg)
IPB160N04S4L-H1	OptiMOS™-T2	1.50	160	0.90	1.20 ... 2.20	146.00	Logic	TO263-7-3
IPI120N04S4-01	OptiMOS™-T2	1.50	120	0.80	2.00 ... 4.00	135.00	Normal	TO262-3
IPB120N04S4-01	OptiMOS™-T2	1.50	120	0.80	2.00 ... 4.00	135.00	Normal	TO263-3-2
IPC100N04S5L-1R5	OptiMOS™-5	1.50	100	1.30	1.20 ... 2.00	70.00	Logic	TDSO8-8-34 SuperSO8 single
IPB160N04S4-H1	OptiMOS™-T2	1.60	160	0.90	2.00 ... 4.00	105.00	Normal	TO263-7-3
AUIRF7738L2	Gen 10.7	1.60	184	1.60	2.00 ... 4.00	129.00	Normal	DirectFET™2 L6
IPLU250N04S4-1R7	OptiMOS™-T2	1.70	250	0.80	2.00 ... 4.00	76.00	Normal	HSOF-8-1 (H-PSOF)
IPB120N04S4L-02	OptiMOS™-T2	1.70	120	0.95	1.20 ... 2.20	143.00	Logic	TO263-3-2
AUIRFP4004	Gen 10.2	1.70	195	0.40	2.00 ... 4.00	220.00	Normal	TO-247
IPC100N04S5-1R7	OptiMOS™-5	1.70	100	1.30	2.20 ... 3.40	62.00	Normal	TDSO8-8-34 SuperSO8 single
IPB120N04S4-02	OptiMOS™-T2	1.80	120	0.95	2.00 ... 4.00	103.00	Normal	TO263-3-2
AUIRFS8407	Gen 12.7	1.80	195	0.65	2.20 ... 3.90	150.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFL8407	Gen 12.7	1.80	195	0.65	2.20 ... 3.90	150.00	Normal	TO-262
IPD100N04S4L-02	OptiMOS™-T2	1.90	100	1.00	1.20 ... 2.20	126.00	Logic	TO252-3 (DPAK)
IPI120N04S4-01	OptiMOS™-T2	1.90	120	0.80	2.00 ... 4.00	135.00	Normal	TO262-3
AUIRF7737L2	Gen 10.7	1.90	156	1.80	2.00 ... 4.00	89.00	Normal	DirectFET™2 L6
AUIRF8736M2	Gen 12.7	1.90	137	2.40	2.20 ... 3.90	136.00	Normal	DirectFET™2 M4
IPC100N04S5L-1R9	OptiMOS™-5	1.90	100	1.50	1.20 ... 2.00	61.00	Logic	TDSO8-8-34 SuperSO8 single
IPC100N04S5-1R9	OptiMOS™-5	1.90	100	1.50	2.20 ... 3.40	50.00	Normal	TDSO8-8-34 SuperSO8 single
AUIRFR8405	Gen 12.7	1.98	100	0.92	2.20 ... 3.90	103.00	Normal	TO-252 (DPAK)
AUIRFU8405	Gen 12.7	1.98	100	0.92	2.20 ... 3.90	103.00	Normal	IPAK
IPD100N04S4-02	OptiMOS™-T2	2.00	100	1.00	2.00 ... 4.00	91.00	Normal	TO252-3 (DPAK)
AUIRFB8407	Gen 12.7	2.00	195	0.65	2.20 ... 3.90	150.00	Normal	TO-220
IPB90N04S4-02	OptiMOS™-T2	2.10	90	1.00	2.00 ... 4.00	91.00	Normal	TO263-3-2
IPI120N04S4-02	OptiMOS™-T2	2.10	120	0.95	2.00 ... 4.00	103.00	Normal	TO262-3
AUIRFL8405	Gen 12.7	2.30	120	0.92	2.20 ... 3.90	107.00	Normal	TO-262
IPD90N04S4-02	OptiMOS™-T2	2.40	90	1.00	2.00 ... 4.00	91.00	Normal	TO252-3 (DPAK)
IPB100N04S4-H2	OptiMOS™-T2	2.40	100	1.30	2.00 ... 4.00	70.00	Normal	TO263-3-2
IPI90N04S4-02	OptiMOS™-T2	2.50	90	1.00	2.00 ... 4.00	91.00	Normal	TO262-3
AUIRFB8405	Gen 12.7	2.50	120	0.92	2.20 ... 3.90	107.00	Normal	TO-220
IPC100N04S5L-2R6	OptiMOS™-5	2.60	100	2.00	1.20 ... 2.00	41.00	Logic	TDSO8-8-33 SuperSO8 single
IPI100N04S4-H2	OptiMOS™-T2	2.70	100	1.30	2.00 ... 4.00	70.00	Normal	TO262-3
IPP100N04S4-H2	OptiMOS™-T2	2.70	100	1.30	2.00 ... 4.00	70.00	Normal	TO220-3
IPZ40N04S5L-2R8	OptiMOS™-5	2.80	40	2.10	1.20 ... 2.00	39.00	Logic	TSDSON-8
IPC100N04S5-2R8	OptiMOS™-5	2.80	100	2.00	2.20 ... 3.40	34.00	Normal	TDSO8-8-33 SuperSO8 single
AUIRF7736M2	Gen 10.7	3.00	108	2.40	2.00 ... 4.00	72.00	Normal	DirectFET™2 M4
AUIRL7736M2	Gen 10.7	3.00	112	2.40	1.00 ... 2.50	52.00	Logic	DirectFET™2 M4
IPZ40N04S5-3R1	OptiMOS™-5	3.10	40	2.10	2.20 ... 3.40	31.00	Normal	TSDSON-8
AUIRFR8403	Gen 12.7	3.10	100	1.52	2.20 ... 3.90	66.00	Normal	TO-252 (DPAK)

1) See packages on page 134 to 136

# Automotive N-Channel MOSFETs

40 V (Trench) (cont'd)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRFU8403	Gen 12.7	3.10	100	1.52	2.20 ... 3.90	66.00	Normal	IPAK
AUIRL1404Z	Gen 10.2	3.10	160	0.75	1.40 ... 2.70	75.00	Logic	TO-220
AUIRL1404ZL	Gen 10.2	3.10	160	0.75	1.40 ... 2.70	75.00	Logic	TO-262
AUIRL1404ZS	Gen 10.2	3.10	160	0.75	1.40 ... 2.70	75.00	Logic	TO-263-3 (D <sup>2</sup> PAK)
IPD90N04S4-03	OptiMOS™-T2	3.20	90	1.60	2.00 ... 4.00	51.00	Normal	TO252-3 (DPAK)
IPB80N04S4-03	OptiMOS™-T2	3.30	80	1.60	2.00 ... 4.00	51.00	Normal	TO263-3-2
AUIRFS8403	Gen 12.7	3.30	100	1.52	2.20 ... 3.90	62.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFL8403	Gen 12.7	3.30	100	1.52	2.20 ... 3.90	62.00	Normal	TO-262
IPC90N04S5L-3R3	OptiMOS™-5	3.30	90	2.40	1.20 ... 2.00	30.00	Logic	TDSO8-8-33 SuperSO8 single
IPC90N04S5-3R6	OptiMOS™-5	3.60	90	2.40	2.20 ... 3.40	24.50	Normal	TDSO8-8-33 SuperSO8 single
IPB120N04S4-04	OptiMOS™-T2	3.60	120	1.90	2.00 ... 4.00	42.00	Normal	TO263-3-2
IPI80N04S4-03	OptiMOS™-T2	3.70	80	1.60	2.00 ... 4.00	51.00	Normal	TO262-3
IPP80N04S4-03	OptiMOS™-T2	3.70	80	1.60	2.00 ... 4.00	51.00	Normal	TO220-3
AUIRF1404Z	Gen 10.2	3.70	160	0.75	2.00 ... 4.00	100.00	Normal	TO-220
AUIRF1404ZL	Gen 10.2	3.70	160	0.75	2.00 ... 4.00	100.00	Normal	TO-262
AUIRF1404ZS	Gen 10.2	3.70	160	0.75	2.00 ... 4.00	100.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPD90N04S4L-04	OptiMOS™-T2	3.80	90	2.10	1.20 ... 2.00	46.00	Logic	TO252-3 (DPAK)
IPB80N04S4L-04	OptiMOS™-T2	4.00	80	2.10	1.20 ... 2.00	46.00	Logic	TO263-3-2
IPD90N04S4-04	OptiMOS™-T2	4.10	90	2.10	2.00 ... 4.00	33.00	Normal	TO252-3 (DPAK)
IPB80N04S4-04	OptiMOS™-T2	4.20	80	2.10	2.00 ... 4.00	33.00	Normal	TO263-3-2
IPC70N04S5L-4R2	OptiMOS™-5	4.20	70	3.00	1.20 ... 2.00	22.00	Logic	TDSO8-8-33 SuperSO8 single
AUIRFR8401	Gen 12.7	4.25	100	1.90	2.20 ... 3.90	42.00	Normal	TO-252 (DPAK)
AUIRFU8401	Gen 12.7	4.25	100	1.90	2.20 ... 3.90	42.00	Normal	IPAK
IPI80N04S4L-04	OptiMOS™-T2	4.30	80	2.10	1.20 ... 2.00	46.00	Logic	TO262-3
IPP80N04S4L-04	OptiMOS™-T2	4.30	80	2.10	1.20 ... 2.00	46.00	Logic	TO220-3
IPC70N04S5-4R6	OptiMOS™-5	4.60	70	3.00	2.20 ... 3.40	18.20	Normal	TDSO8-8-33 SuperSO8 single
IPI80N04S4-04	OptiMOS™-T2	4.60	80	2.10	2.00 ... 4.00	33.00	Normal	TO262-3
IPP80N04S4-04	OptiMOS™-T2	4.60	80	2.10	2.00 ... 4.00	33.00	Normal	TO220-3
IPZ40N04S5L-4R8	OptiMOS™-5	4.80	40	3.50	1.20 ... 2.00	22.00	Logic	TSDSO8-8
AUIRF7734M2	Gen 10.7	4.90	72	3.30	2.00 ... 4.00	48.00	Normal	DirectFET™2-Medium
IPZ40N04S5-5R4	OptiMOS™-5	5.40	40	3.50	2.20 ... 3.40	17.00	Normal	TSDSO8-8
IPC50N04S5L-5R5	OptiMOS™-5	5.50	50	3.60	1.20 ... 2.00	17.00	Logic	TDSO8-8-33 SuperSO8 single
IPC50N04S5-5R8	OptiMOS™-5	5.80	50	3.60	1.20 ... 2.00	13.00	Normal	TDSO8-8-33 SuperSO8 single
AUIRFN8459	Gen 12.7	2 x 5.90	50	3.00	2.20 ... 3.90	40.00	Normal	PQFN 5x6 dual
IPB70N04S4-06	OptiMOS™-T2	6.20	70	2.60	2.00 ... 4.00	24.50	Normal	TO263-3-2
IPI70N04S4-06	OptiMOS™-T2	6.50	70	2.60	2.00 ... 4.00	24.50	Normal	TO262-3
IPP70N04S4-06	OptiMOS™-T2	6.50	70	2.60	2.00 ... 4.00	24.50	Normal	TO220-3
AUIRL7732S2	Gen 10.7	6.60	58	3.50	1.00 ... 2.50	24.00	Logic	DirectFET™2 SC
AUIRF7732S2	Gen 10.7	6.95	55	3.70	2.00 ... 4.00	30.00	Normal	DirectFET™2 SC
IPG20N04S4L-07A	OptiMOS™-T2	2 x 7.20	20	2.30	1.20 ... 2.20	39.00	Logic	TDSO8-8-10 SuperSO8 dual
IPD50N04S4L-08	OptiMOS™-T2	7.30	50	3.30	1.20 ... 2.00	23.00	Logic	TO252-3 (DPAK)
IPZ40N04S5L-7R4	OptiMOS™-5	7.40	40	4.40	1.20 ... 2.00	13.00	Logic	TSDSO8-8
IPG20N04S4-08A	OptiMOS™-T2	2 x 7.50	20	2.30	2.00 ... 4.00	28.00	Normal	TDSO8-8-10 SuperSO8 dual
IPI45N04S4L-08	OptiMOS™-T2	7.60	45	3.30	1.20 ... 2.00	23.00	Logic	TO262-3
IPP45N04S4L-08	OptiMOS™-T2	7.60	45	3.30	1.20 ... 2.00	23.00	Logic	TO220-3
IPD50N04S4-08	OptiMOS™-T2	7.90	50	3.30	2.00 ... 4.00	17.20	Normal	TO252-3 (DPAK)
IPG20N04S4L-08A	OptiMOS™-T2	2 x 8.10	20	2.80	1.20 ... 2.20	30.00	Logic	TDSO8-8-10 SuperSO8 dual
IPZ40N04S5-8R4	OptiMOS™-5	8.40	40	4.40	2.20 ... 3.40	10.30	Normal	TSDSO8-8
IPD50N04S4-10	OptiMOS™-T2	9.30	50	3.70	2.00 ... 4.00	14.00	Normal	TO252-3 (DPAK)
IPG20N04S4L-11A	OptiMOS™-T2	2 x 11.60	20	3.70	1.20 ... 2.20	20.00	Logic	TDSO8-8-10 SuperSO8 dual
IPG20N04S4-12A	OptiMOS™-T2	2 x 12.20	20	3.70	2.00 ... 4.00	14.00	Normal	TDSO8-8-10 SuperSO8 dual

1) See packages on page 134 to 136

## 55 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF3805L-7P	Gen 10.2	2.60	160	0.50	2.00 ... 4.00	130	Normal	TO-263CA 7 pin
AUIRF3805S-7P	Gen 10.2	2.60	160	0.50	2.00 ... 4.00	130	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRF3805	Gen 10.2	3.30	160	0.50	2.00 ... 4.00	190	Normal	TO-220
AUIRF3805L	Gen 10.2	3.30	160	0.50	2.00 ... 4.00	190	Normal	TO-262
AUIRF1405ZL	Gen 10.2	4.90	150	0.65	2.00 ... 4.00	120	Normal	TO-262
AUIRF1405ZS	Gen 10.2	4.90	150	0.65	2.00 ... 4.00	120	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF1405ZS-7P	Gen 10.2	4.90	120	0.65	2.00 ... 4.00	150	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRF3205Z	Gen 10.2	6.50	75	0.90	2.00 ... 4.00	76	Normal	TO-220
AUIRFR48Z	Gen 10.2	11.00	42	1.64	2.00 ... 4.00	40	Normal	TO-252 (DPAK)
AUIRFR2905Z	Gen 10.2	14.50	42	1.38	2.00 ... 4.00	29	Normal	TO-252 (DPAK)
AUIRFR4105Z	Gen 10.2	24.50	30	3.12	2.00 ... 4.00	18	Normal	TO-252 (DPAK)
AUIRLL024Z	Gen 10.2	60.00	5	n/a	2.00 ... 4.00	7	Normal	SOT-223

## 60 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF7749L2	Gen 10.7	1.50	345	0.50	2.00 ... 4.00	183.00	Normal	DirectFET™2 L8
IPB180N06S4-H1	OptiMOS™-T2	1.70	180	0.60	2.00 ... 4.00	208.00	Normal	TO263-7-3
AUIRLS3036-7P	Gen 10.7	1.90	240	0.40	1.00 ... 2.50	110.00	Logic	TO-263-7 (D <sup>2</sup> PAK 7-leg)
IPB120N06S4-H1	OptiMOS™-T2	2.00	120	0.60	2.00 ... 4.00	208.00	Normal	TO263-3-2
IPB120N06S4-02	OptiMOS™-T2	2.40	120	0.80	2.00 ... 4.00	150.00	Normal	TO263-3-2
IPP120N06S4-H1	OptiMOS™-T2	2.40	120	0.60	2.00 ... 4.00	208.00	Normal	TO220-3
AUIRLS3036	Gen 10.7	2.40	195	0.40	1.00 ... 2.50	91.00	Logic	TO-263-3 (D <sup>2</sup> PAK)
IPB120N06S4-03	OptiMOS™-T2	2.80	120	0.90	2.00 ... 4.00	125.00	Normal	TO263-3-2
IPI120N06S4-02	OptiMOS™-T2	2.80	120	0.80	2.00 ... 4.00	150.00	Normal	TO262-3
IPB90N06S4L-04	OptiMOS™-T2	3.40	90	1.00	1.20 ... 2.20	133.00	Logic	TO263-3-2
IPI90N06S4L-04	OptiMOS™-T2	3.40	90	1.00	1.20 ... 2.20	133.00	Logic	TO262-3
IPD100N06S4-03	OptiMOS™-T2	3.50	100	1.00	2.00 ... 4.00	99.00	Normal	TO252-3 (DPAK)
IPD90N06S4L-03	OptiMOS™-T2	3.50	90	1.00	1.20 ... 2.00	133.00	Logic	TO252-3 (DPAK)
IPB90N06S4-04	OptiMOS™-T2	3.70	90	1.00	1.20 ... 2.20	99.00	Normal	TO263-3-2
IPD90N06S4-04	OptiMOS™-T2	3.80	90	1.00	2.00 ... 4.00	99.00	Normal	TO252-3 (DPAK)
IPI90N06S4-04	OptiMOS™-T2	4.00	90	1.00	2.00 ... 4.00	99.00	Normal	TO262-3
AUIRFS3306	Gen 10.7	4.20	120	0.65	2.00 ... 4.00	85.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPD90N06S4L-05	OptiMOS™-T2	4.60	90	1.40	1.20 ... 2.20	83.00	Logic	TO252-3 (DPAK)
IPB80N06S4L-05	OptiMOS™-T2	4.80	80	1.40	1.20 ... 2.20	83.00	Logic	TO263-3-2
IPD90N06S4-05	OptiMOS™-T2	5.10	90	1.40	2.00 ... 4.00	62.00	Normal	TO252-3 (DPAK)
IPB80N06S4-05	OptiMOS™-T2	5.40	80	1.40	2.00 ... 4.00	62.00	Normal	TO263-3-2
IPI80N06S4-05	OptiMOS™-T2	5.40	80	1.40	2.00 ... 4.00	62.00	Normal	TO262-3
IPD90N06S4L-06	OptiMOS™-T2	6.30	90	1.90	1.20 ... 2.20	58.00	Logic	TO252-3 (DPAK)
IPB80N06S4L-07	OptiMOS™-T2	6.40	80	1.90	1.20 ... 2.20	58.00	Logic	TO263-3-2
IPI80N06S4L-07	OptiMOS™-T2	6.40	80	1.90	1.20 ... 2.20	58.00	Logic	TO262-3
IPD90N06S4-07	OptiMOS™-T2	6.90	90	1.90	2.00 ... 4.00	43.00	Normal	TO252-3 (DPAK)
AUIRF7648M2	Gen 10.7	7.00	68	2.40	3.00 ... 4.90	35.00	Normal	DirectFET™2 M4
IPB80N06S4-07	OptiMOS™-T2	7.10	80	1.90	2.00 ... 4.00	43.00	Normal	TO263-3-2
IPI80N06S4-07	OptiMOS™-T2	7.40	80	1.90	2.00 ... 4.00	43.00	Normal	TO262-3
IPD50N06S4L-08	OptiMOS™-T2	7.80	50	2.10	1.20 ... 2.20	49.00	Logic	TO252-3 (DPAK)
IPB45N06S4L-08	OptiMOS™-T2	7.90	45	2.10	1.20 ... 2.20	49.00	Logic	TO263-3-2

1) See packages on page 134 to 136



# Automotive N-Channel MOSFETs

## 60 V (Trench) (cont'd)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPI45N06S4L-08	OptiMOS™-T2	8.20	45	2.10	1.20 ... 2.20	49.00	Logic	TO262-3
AUIRF1010EZS	Gen 10.2	8.50	75	1.11	2.00 ... 4.00	58.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPD50N06S4-09	OptiMOS™-T2	9.00	50	2.10	2.00 ... 4.00	36.00	Normal	TO252-3 (DPAK)
IPI45N06S4-09	OptiMOS™-T2	9.40	45	2.10	2.00 ... 4.00	36.00	Normal	TO262-3
IPP45N06S4-09	OptiMOS™-T2	9.40	45	2.10	2.00 ... 4.00	36.00	Normal	TO220-3
IPG20N06S4L-11	OptiMOS™-T2	2 x 11.20	20	2.30	1.20 ... 2.20	41.00	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S4L-11A	OptiMOS™-T2	2 x 11.20	20	2.30	1.20 ... 2.20	41.00	Logic	TDSON-8-10 SuperSO8 dual
IPD50N06S4L-12	OptiMOS™-T2	12.00	50	3.00	1.20 ... 2.20	30.00	Logic	TO252-3 (DPAK)
IPG20N06S4L-14	OptiMOS™-T2	2 x 13.70	20	3.00	1.20 ... 2.20	30.00	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S4L-14A	OptiMOS™-T2	2 x 13.70	20	3.00	1.20 ... 2.20	30.00	Logic	TDSON-8-10 SuperSO8 dual
IPG20N06S4-15	OptiMOS™-T2	2 x 15.50	20	3.00	2.00 ... 4.00	22.00	Normal	TDSON-8-4 SuperSO8 dual
IPG20N06S4-15A	OptiMOS™-T2	2 x 15.50	20	3.00	2.00 ... 4.00	22.00	Normal	TDSON-8-10 SuperSO8 dual
AUIRFR3806	Gen 10.7	15.80	43	2.12	2.00 ... 4.00	22.00	Normal	TO-252 (DPAK)
IPD30N06S4L-23	OptiMOS™-T2	23.00	30	4.20	1.20 ... 2.20	16.10	Logic	TO252-3 (DPAK)
IPG20N06S4L-26	OptiMOS™-T2	2 x 26.00	20	4.50	1.20 ... 2.20	15.00	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S4L-26A	OptiMOS™-T2	2 x 26.00	20	4.50	1.20 ... 2.20	15.00	Logic	TDSON-8-10 SuperSO8 dual
IPD25N06S4L-30	OptiMOS™-T2	30.00	25	5.10	1.20 ... 2.20	12.50	Logic	TO252-3 (DPAK)
AUIRF7640S2	Gen 10.7	36.00	21	5.00	3.00 ... 5.00	7.30	Normal	DirectFET™2 SB

## 75 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF7759L2	Gen 10.7	2.30	160	1.20	2.00 ... 4.00	200	Normal	DirectFET™2 L8
AUIRFS3107	Gen 10.7	3.00	195	0.40	2.00 ... 4.00	160	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPP80N08S4-06	OptiMOS™-T2	5.50	80	1.00	2.00 ... 4.00	70	Normal	TO220-3
AUIRFN7107	Gen 10.7	8.50	76	1.20	2.00 ... 4.00	52	Normal	PQFN 5x6 mm

1) See packages on page 134 to 136

## 80 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IAUT300N08S5N012	OptiMOS™-5	1.20	300	0.40	2.20 ... 3.80	178	Normal	HSOF-8 (HPSOF-8)
IPB180N08S4-02	OptiMOS™-T2	2.20	180	0.54	2.00 ... 4.00	167	Normal	TO263-7-3
IPB120N08S4-03	OptiMOS™-T2	2.50	120	0.54	2.00 ... 4.00	167	Normal	TO263-3-2
IPI120N08S4-03	OptiMOS™-T2	2.50	120	0.54	2.00 ... 4.00	167	Normal	TO262-3
IPP120N08S4-03	OptiMOS™-T2	2.50	120	0.54	2.00 ... 4.00	167	Normal	TO220-3
IAUT165N08S5N029	OptiMOS™-5	2.90	165	0.90	2.20 ... 3.80	70	Normal	HSOF-8 (HPSOF-8)
IPB160N08S4-03	OptiMOS™-T2	3.20	160	0.72	2.00 ... 4.00	112	Normal	TO263-7-3
IPB120N08S4-04	OptiMOS™-T2	4.10	120	0.84	2.00 ... 4.00	95	Normal	TO263-3-2
IPI120N08S4-04	OptiMOS™-T2	4.10	120	0.84	2.00 ... 4.00	95	Normal	TO262-3
IPP120N08S4-04	OptiMOS™-T2	4.10	120	0.84	2.00 ... 4.00	95	Normal	TO220-3
IPB140N08S4-04	OptiMOS™-T2	4.20	140	0.90	2.00 ... 4.00	80	Normal	TO263-7-3
IPP80N07S4-05	OptiMOS™-T2	5.20	80	1.00	2.00 ... 4.00	69	Normal	TO220-3
IPD90N08S4-05	OptiMOS™-T2	5.30	90	1.00	2.00 ... 4.00	68	Normal	TO252-3 (DPAK)
IPB80N08S4-06	OptiMOS™-T2	5.50	80	1.00	2.00 ... 4.00	70	Normal	TO263-3-2
IPI80N08S4-06	OptiMOS™-T2	5.50	80	1.00	2.00 ... 4.00	70	Normal	TO262-3
IPD50N08S4-13	OptiMOS™-T2	13.20	50	2.10	2.00 ... 4.00	30	Normal	TO252-3 (DPAK)

## 100 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IAUT300N10S5N015	OptiMOS™-5	1.50	300	0.40	2.20 ... 3.80	166.00	Normal	HSOF-8 (HPSOF-8)
IPB180N10S4-02	OptiMOS™-T2	2.50	180	0.50	2.00 ... 3.50	156.00	Normal	TO263-7-3
IPB180N10S4-03	OptiMOS™-T2	3.30	180	0.60	2.00 ... 3.50	108.00	Normal	TO263-7-3
IAUT150N10S5N035	OptiMOS™-5	3.50	150	0.90	2.20 ... 3.80	67.00	Normal	HSOF-8 (HPSOF-8)
IPB120N10S4-03	OptiMOS™-T2	3.50	120	0.60	2.00 ... 3.50	108.00	Normal	TO263-3-2
IPI120N10S4-03	OptiMOS™-T2	3.50	120	0.60	2.00 ... 3.50	108.00	Normal	TO262-3
IPP120N10S4-03	OptiMOS™-T2	3.50	120	0.60	2.00 ... 3.50	108.00	Normal	TO220-3
AUIRF7769L2	Gen 10.7	3.50	124	1.20	2.00 ... 4.00	200.00	Normal	DirectFET™2 L8
AUIRSL4030-7P	Gen 10.7	3.90	190	0.40	1.00 ... 2.50	93.00	Logic	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRSL4030	Gen 10.7	4.30	180	0.40	1.00 ... 2.50	87.00	Logic	TO-263-3 (D <sup>2</sup> PAK)
AUIRF7769L2	Gen 10.7	4.40	114	1.20	3.00 ... 5.00	81.00	Normal	DirectFET™2 L8
AUIRFP4110	Gen 10.7	4.50	120	0.40	2.00 ... 4.00	150.00	Normal	TO-247
IPB120N10S4-05	OptiMOS™-T2	5.00	120	0.80	2.00 ... 3.50	70.00	Normal	TO263-3-2
IPI120N10S4-05	OptiMOS™-T2	5.00	120	0.80	2.00 ... 3.50	70.00	Normal	TO262-3
IPP120N10S4-05	OptiMOS™-T2	5.00	120	0.80	2.00 ... 3.50	70.00	Normal	TO220-3
AUIRFS4310Z	Gen 10.7	6.00	120	0.60	2.00 ... 4.00	120.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPD90N10S4L-06	OptiMOS™-T2	6.60	90	1.10	1.10 ... 2.10	75.00	Logic	TO252-3 (DPAK)
IPD90N10S4-06	OptiMOS™-T2	6.70	90	1.10	2.00 ... 3.50	52.00	Normal	TO252-3 (DPAK)
AUIRFS4310	Gen 10.2	7.00	75	0.50	2.00 ... 4.00	170.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFB4410	Gen 10.2	10.00	75	0.61	2.00 ... 4.00	120.00	Normal	TO-220
AUIRL7766M2	Gen 10.7	10.00	51	2.40	1.00 ... 2.50	44.00	Logic	DirectFET™2 M4
IPB70N10S3-12	OptiMOS™-T	11.30	70	1.20	2.00 ... 4.00	51.00	Normal	TO263-3-2
IPI70N10S3-12	OptiMOS™-T	11.60	70	1.20	2.00 ... 4.00	51.00	Normal	TO262-3
IPD60N10S4L-12	OptiMOS™-T2	12.00	60	1.60	1.10 ... 2.10	38.00	Logic	TO252-3 (DPAK)
IPP70N10S3L-12	OptiMOS™-T	12.10	70	1.20	1.20 ... 2.40	60.00	Logic	TO220-3
IPD60N10S4-12	OptiMOS™-T2	12.20	60	1.60	2.00 ... 3.50	26.00	Normal	TO252-3 (DPAK)
AUIRFB4610	Gen 10.2	14.00	73	0.77	2.00 ... 4.00	90.00	Normal	TO-220
AUIRFN7110	Gen 10.7	14.50	58	1.20	2.00 ... 4.00	49.00	Normal	PQFN 5x6 mm

1) See packages on page 134 to 136

# Automotive N-Channel MOSFETs

## 100 V (Trench) (cont'd)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{th,jc}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
IPB50N10S3L-16	OptiMOS™-T	15.40	70	1.50	1.20 ... 2.40	49.00	Logic	TO263-3-2
IPI50N10S3L-16	OptiMOS™-T	15.70	50	1.50	1.20 ... 2.40	49.00	Logic	TO262-3
IPP50N10S3L-16	OptiMOS™-T	15.70	50	1.50	1.20 ... 2.40	49.00	Logic	TO220-3
AUIRF3710ZS	Gen 10.2	18.00	59	0.92	2.00 ... 4.00	82.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
IPG20N10S4L-22A	OptiMOS™-T2	2 x 22.00	20	2.50	1.10 ... 2.10	21.00	Logic	TDSO8-8-10 SuperSO8 dual
IPD35N10S3L-26	OptiMOS™-T	24.00	35	2.10	1.20 ... 2.40	39.00	Logic	TO252-3 (DPAK)
AUIRF540ZS	Gen 10.2	26.50	36	1.64	2.00 ... 4.00	42.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFR540Z	Gen 10.2	26.50	36	1.64	2.00 ... 4.00	42.00	Normal	TO-252 (DPAK)
AUIRF540Z	Gen 10.2	26.50	36	1.64	2.00 ... 4.00	43.00	Normal	TO-220
IPD30N10S3L-34	OptiMOS™-T	31.00	30	2.60	1.20 ... 2.40	24.00	Logic	TO252-3 (DPAK)
AUIRF7647S2	Gen 10.7	31.00	24	3.70	3.00 ... 5.00	14.00	Normal	DirectFET™2 SC
IPG20N10S4L-35A	OptiMOS™-T2	2 x 35.00	20	3.50	1.10 ... 2.10	13.40	Logic	TDSO8-8-10 SuperSO8 dual
IPG20N10S4-36A	OptiMOS™-T2	2 x 36.00	20	3.50	2.00 ... 3.50	9.40	Normal	TDSO8-8-10 SuperSO8 dual
IPG16N10S4-61A	OptiMOS™-T2	2 x 61.00	16	5.20	2.00 ... 3.50	5.40	Normal	TDSO8-8-10 SuperSO8 dual
IPG16N10S4L-61A	OptiMOS™-T2	2 x 61.00	16	5.20	1.10 ... 2.10	8.50	Logic	TDSO8-8-10 SuperSO8 dual
AUIRF7665S2	Gen 10.7	62.00	14	5.00	3.00 ... 5.00	8.00	Normal	DirectFET™2 SB
AUIRFU120Z	Gen 10.2	190.00	9	4.28	2.00 ... 4.00	7.00	Normal	IPAK

## 120 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{th,jc}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
IPB100N12S3-05	OptiMOS™-T	4.80	100	0.50	2.00 ... 4.00	139	Normal	TO263-3
IPI100N12S3-05	OptiMOS™-T	5.10	100	0.50	2.00 ... 4.00	139	Normal	TO262-3
IPP100N12S3-05	OptiMOS™-T	5.10	100	0.50	2.00 ... 4.00	139	Normal	TO220-3
IPD70N12S3-11	OptiMOS™-T	11.10	70	1.20	2.00 ... 4.00	51	Normal	TO252-3 (DPAK)
IPI70N12S3-11	OptiMOS™-T	11.30	70	1.20	2.00 ... 4.00	51	Normal	TO262-3
IPP70N12S3-11	OptiMOS™-T	11.30	70	1.20	2.00 ... 4.00	51	Normal	TO220-3
IPB70N12S3-11	OptiMOS™-T	11.30	70	1.20	2.00 ... 4.00	51	Normal	TO263-3
IPD70N12S3L-12	OptiMOS™-T	11.50	70	1.20	1.20 ... 2.40	59	Logic	TO252-3 (DPAK)
IPI70N12S3L-12	OptiMOS™-T	11.80	70	1.20	1.20 ... 2.40	59	Logic	TO262-3
IPP70N12S3L-12	OptiMOS™-T	11.80	70	1.20	1.20 ... 2.40	59	Logic	TO220-3
IPB70N12S3L-12	OptiMOS™-T	11.80	70	1.20	1.20 ... 2.40	59	Logic	TO263-3
IPD50N12S3L-15	OptiMOS™-T	15.00	50	1.50	1.20 ... 2.40	44	Logic	TO252-3 (DPAK)
IPI50N12S3L-15	OptiMOS™-T	15.40	50	1.50	1.20 ... 2.40	44	Logic	TO262-3
IPP50N12S3L-15	OptiMOS™-T	15.40	50	1.50	1.20 ... 2.40	44	Logic	TO220-3
IPB50N12S3L-15	OptiMOS™-T	15.40	50	1.50	1.20 ... 2.40	44	Logic	TO263-3
IPD35N12S3L-24	OptiMOS™-T	24.00	35	2.10	1.20 ... 2.40	30	Logic	TO252-3 (DPAK)
IPB35N12S3L-26	OptiMOS™-T	26.30	35	2.10	1.20 ... 2.40	30	Logic	TO263-3
IPD30N12S3L-31	OptiMOS™-T	31.00	30	2.60	1.20 ... 2.40	24	Logic	TO252-3 (DPAK)

1) See packages on page 134 to 136



## 150 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRFP4568	Gen 10.7	5.90	171	0.29	3.00 ... 5.00	151	Normal	TO-247
AUIRFS4115-7P	Gen 10.7	11.80	105	0.40	3.00 ... 5.00	73	Normal	TO-263-7 (D <sup>2</sup> PAK 7-leg)
AUIRFS4115	Gen 10.7	12.10	99	0.40	3.00 ... 5.00	77	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFR4615	Gen 10.7	42.00	33	1.05	3.00 ... 5.00	26	Normal	TO-252 (DPAK)
AUIRF7675M2	Gen 10.7	56.00	18	3.30	3.00 ... 5.00	21	Normal	DirectFET™2 M2

## 200 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRFR4620	Gen 10.7	78	24	1.05	3.00 ... 5.00	25	Normal	TO-252 (DPAK)

## 250 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
IPB64N25S3-20	OptiMOS™ T	20	64.00	0.50	2.00 ... 4.00	67	Normal	TO263-3-2
AUIRF7799L2	Gen 10.7	32	35.00	1.20	3.00 ... 5.00	110	Normal	DirectFET™2 L8
IPB17N25S3-100	OptiMOS™ T	100	17.00	1.40	2.00 ... 4.00	14	Normal	TO263-3-2
IPP17N25S3-100	OptiMOS™ T	100	17.00	1.40	2.00 ... 4.00	14	Normal	TO220-3
AUIRFR4292	Gen 10.7	345	9.30	1.50	3.00 ... 5.00	13	Normal	TO-252 (DPAK)
IPD5N25S3-430	OptiMOS™-T	430	5.00	3.70	2.00 ... 4.00	5	Normal	TO252-3 (DPAK)

## 300 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRFP4409	Gen 10.7	69	38	0.44	3.00 ... 5.00	83	Normal	TO-247
AUIRFS6535	Gen 10.7	185	19	0.71	3.00 ... 5.00	38	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFS6535	Gen 10.7	185	19	0.71	3.00 ... 5.00	38	Normal	TO-262

1) See packages on page 134 to 136

# Automotive N-Channel MOSFETs

## 30 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPD50N03S2L-06	OptiMOS™	6.40	50.00	1.10	1.20 ... 2.00	50	Logic	TO252-3 (DPAK)
AUIRL2203N	Gen 7	7.00	75.00	0.85	1.00 ... 3.00	60	Logic	TO-220
IPD50N03S2-07	OptiMOS™	7.30	50.00	1.10	2.10 ... 4.00	52	Normal	TO252-3 (DPAK)
IPD30N03S2L-10	OptiMOS™	10.00	30.00	1.50	1.20 ... 2.00	31	Logic	TO252-3 (DPAK)
AUIRF7805Q	Gen 5	11.00	13.00	20.00	1.00 ... 3.00	11	Logic	SO-8 (DSO-8)
IPD30N03S2L-20	OptiMOS™	20.00	30.00	2.50	1.20 ... 2.00	14	Logic	TO252-3 (DPAK)
AUIRF7313Q	Gen 5	2 x 29.00	7.00	20.00	1.00 ... 3.00	22	Logic	SO-8 (DSO-8)
AUIRF7303Q	Gen 5	2 x 50.00	4.90	20.00	1.00 ... 3.00	14	Logic	SO-8 (DSO-8)

## 40 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPB160N04S2L-03	OptiMOS™	2.70	160	0.50	1.20 ... 2.00	230	Logic	TO263-7-3
IPB160N04S2-03	OptiMOS™	2.90	160	0.50	2.10 ... 4.00	123	Normal	TO263-7-3
IPB100N04S2-04	OptiMOS™	3.30	100	0.50	2.10 ... 4.00	172	Normal	TO263-3-2
IPB80N04S2-04	OptiMOS™	3.40	80	0.50	2.10 ... 4.00	127	Normal	TO263-3-2
IPB80N04S2-H4	OptiMOS™	3.70	80	0.50	1.20 ... 2.00	103	Normal	TO263-3-2
IPI80N04S2-04	OptiMOS™	3.70	80	0.50	2.10 ... 4.00	170	Normal	TO262-3
AUIRL1404S	Gen 7	4.00	75	0.75	1.00 ... 3.00	93	Logic	TO-263-3 (D <sup>2</sup> PAK)
IPI80N04S2-H4	OptiMOS™	4.00	80	0.50	2.10 ... 4.00	148	Normal	TO262-3
AUIRF1404S	Gen 7	4.00	75	0.75	2.00 ... 4.00	131	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF1404	Gen 7	4.00	75	0.75	2.00 ... 4.00	131	Normal	TO-220
AUIRFR3504	Gen 7	9.20	87	1.09	2.00 ... 4.00	48	Normal	TO-252 (DPAK)
AUIRF3504	Gen 7	9.20	87	1.09	2.00 ... 4.00	48	Normal	TO-220
AUIRF7484Q	Gen 7	10.00	14	20.00	1.00 ... 2.00	69	Logic	SO-8 (DSO-8)

## 50 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF7103Q	Gen 5	2 x 130	3	20.00	1.00 ... 3.00	10	Logic	SO-8 (DSO-8)

## 55 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPB100N06S2L-05	OptiMOS™	4.40	100	0.50	1.20 ... 2.00	170.00	Logic	TO263-3-2
IPB100N06S2-05	OptiMOS™	4.70	100	0.50	2.10 ... 4.00	130.00	Normal	TO263-3-2
IPB80N06S2L-H5	OptiMOS™	4.70	80	0.50	1.20 ... 2.00	145.00	Logic	TO263-3-2
IPI100N06S2L-05	OptiMOS™	4.70	100	0.50	1.20 ... 2.00	170.00	Logic	TO220-3
AUIRF2805	Gen 7	4.70	75	0.45	2.00 ... 4.00	150.00	Normal	TO-220
IPB80N06S2-05	OptiMOS™	4.80	80	0.50	2.10 ... 4.00	130.00	Normal	TO263-3-2
IPI80N06S2L-05	OptiMOS™	4.80	80	0.50	1.20 ... 2.00	170.00	Logic	TO262-3
IIPP80N06S2L-H5	OptiMOS™	5.00	80	0.50	1.20 ... 2.00	145.00	Logic	TO220-3
AUIRFBA1405	Gen 5	5.00	174	0.45	2.00 ... 4.00	170.00	Normal	TO-220
IPB80N06S2-H5	OptiMOS™	5.20	80	0.50	2.10 ... 4.00	116.00	Normal	TO263-3-2
AUIRF1405	Gen 7	5.30	75	0.45	2.00 ... 4.00	170.00	Normal	TO-220
AUIRFP1405	Gen 7	5.30	95	0.49	2.00 ... 4.00	120.00	Normal	TO-247
IIPP80N06S2-H5	OptiMOS™	5.50	80	0.50	2.10 ... 4.00	116.00	Normal	TO220-3

1) See packages on page 134 to 136

## 55 V (Planar) (cont'd)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
IPB80N06S2L-06	OptiMOS™	6.00	80	0.60	1.20 ... 2.00	114.00	Logic	TO263-3-2
IPB80N06S2-07	OptiMOS™	6.30	80	0.60	2.10 ... 4.00	86.00	Normal	TO263-3-2
IPI80N06S2-07	OptiMOS™	6.60	80	0.60	2.10 ... 4.00	86.00	Normal	TO262-3
IPP80N06S2-07	OptiMOS™	6.60	80	0.60	2.10 ... 4.00	86.00	Normal	TO220-3
IPB80N06S2L-07	OptiMOS™	6.70	80	0.70	1.20 ... 2.00	95.00	Logic	TO263-3-2
IPP80N06S2L-07	OptiMOS™	7.00	80	0.70	1.20 ... 2.00	95.00	Logic	TO220-3
IPB80N06S2-08	OptiMOS™	7.70	80	0.70	2.10 ... 4.00	72.00	Normal	TO263-3-2
IPI80N06S2-08	OptiMOS™	8.00	80	0.70	2.10 ... 4.00	72.00	Normal	TO262-3
AUIRF3205	Gen 5	8.00	75	0.75	2.00 ... 4.00	97.00	Normal	TO-220
AUIRF3305	Gen 5	8.00	140	0.45	2.00 ... 4.00	100.00	Normal	TO-220
AUIRFP064N	Gen 5	8.00	110	0.75	2.00 ... 4.00	113.00	Normal	TO-247
IPB80N06S2L-09	OptiMOS™	8.20	80	0.80	1.20 ... 2.00	82.00	Logic	TO263-3-2
IPP80N06S2L-09	OptiMOS™	8.50	80	0.80	1.20 ... 2.00	82.00	Logic	TO220-3
IPB80N06S2-09	OptiMOS™	8.80	80	0.80	2.10 ... 4.00	60.00	Normal	TO263-3-2
IPP80N06S2-09	OptiMOS™	9.10	80	0.80	2.10 ... 4.00	60.00	Normal	TO220-3
IPP80N06S2L-09	OptiMOS™	11.00	80	0.95	1.20 ... 2.00	62.00	Logic	TO220-3
IPB77N06S2-12	OptiMOS™	11.70	77	0.95	2.10 ... 4.00	45.00	Normal	TO263-3-2
IPP77N06S2-12	OptiMOS™	12.00	77	0.95	2.10 ... 4.00	45.00	Normal	TO220-3
IPD50N06S2L-13	OptiMOS™	12.70	50	1.10	1.20 ... 2.00	52.00	Logic	TO252-3 (DPAK)
IPD30N06S2L-13	OptiMOS™	13.00	30	1.10	1.20 ... 2.00	52.00	Logic	TO252-3 (DPAK)
AUIRFZ48N	Gen 7	14.00	64	0.95	2.00 ... 4.00	54.00	Normal	TO-220
IPD50N06S2-14	OptiMOS™	14.40	50	1.10	2.10 ... 4.00	39.00	Normal	TO252-3 (DPAK)
IPD30N06S2-15	OptiMOS™	14.70	30	1.10	1.20 ... 2.00	39.00	Normal	TO252-3 (DPAK)
AUIRFZ46NL	Gen 7	16.50	39	1.40	2.00 ... 4.00	48.00	Normal	TO-262
AUIRFZ44N	Gen 7	17.50	49	1.50	2.00 ... 4.00	42.00	Normal	TO-220
IPD30N06S2L-23	OptiMOS™	23.00	30	1.50	1.20 ... 2.00	33.00	Logic	TO252-3 (DPAK)
IPD30N06S2-23	OptiMOS™	23.00	30	1.50	2.10 ... 4.00	25.00	Normal	TO252-3 (DPAK)
AUIRLR2905	Gen 5	27.00	42	1.40	1.00 ... 2.00	36.00	Logic	TO-252 (DPAK)
BSP603S2L	OptiMOS™	33.00	5.2	20.00	1.20 ... 2.00	31.00	Logic	SOT223
IPD26N06S2L-35	OptiMOS™	35.00	30	2.20	1.20 ... 2.00	10.00	Logic	TO252-3 (DPAK)
IPG20N06S2L-35	OptiMOS™	2 x 35.00	20	2.30	1.20 ... 2.20	18.00	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S2L-35A	OptiMOS™	2 x 35.00	20	2.30	1.20 ... 2.20	18.00	Logic	TDSON-8-10 SuperSO8 dual
IPD25N06S2-40	OptiMOS™	40.00	29	2.20	2.10 ... 4.00	14.00	Normal	TO252-3 (DPAK)
AUIRFIZ34N	Gen 5	40.00	21	4.10	2.00 ... 4.00	23.00	Normal	TO-220 FullPak
AUIRFZ34N	Gen 5	40.00	29	2.20	2.00 ... 4.00	23.00	Normal	TO-220
AUIRLL2705	Gen 5	40.00	5	120.00	1.00 ... 3.00	32.00	Logic	SOT-223
AUIRF7341Q	Gen 5	2 x 50.00	5.1	20.00	1.00 ... 3.00	29.00	Logic	SO-8 (DSO-8)
IPG20N06S2L-50	OptiMOS™	2 x 50.00	20	2.90	1.20 ... 2.20	12.40	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S2L-50A	OptiMOS™	2 x 50.00	20	2.90	1.20 ... 2.20	12.40	Logic	TDSON-8-10 SuperSO8 dual
AUIRLZ24NS	Gen 5	60.00	18	3.30	1.00 ... 2.00	7.00	Logic	TO-263-3 (D <sup>2</sup> PAK)
IPD15N06S2L-64	OptiMOS™	64.00	19	3.20	1.20 ... 2.00	11.00	Logic	TO252-3 (DPAK)
AUIRLL024N	Gen 5	65.00	4	120.00	1.00 ... 2.00	7.00	Logic	SOT-223
AUIRLR024N	Gen 5	65.00	17	3.30	1.00 ... 2.00	10.00	Logic	TO-252 (DPAK)
IPG20N06S2L-65	OptiMOS™	2 x 65.00	20	3.50	1.20 ... 2.20	10.00	Logic	TDSON-8-4 SuperSO8 dual
IPG20N06S2L-65A	OptiMOS™	2 x 65.00	20	3.50	1.20 ... 2.20	10.00	Logic	TDSON-8-10 SuperSO8 dual
AUIRFZ24NS	Gen 5	70.00	17	3.30	2.00 ... 4.00	13.00	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRFL024N	Gen 5	75.00	3	120.00	2.00 ... 4.00	12.00	Normal	SOT-223
IPD14N06S2-80	OptiMOS™	80.00	17	3.20	2.10 ... 4.00	8.00	Normal	TO252-3 (DPAK)
AUIRLL014N	Gen 5	140.00	3	120.00	1.00 ... 2.00	10.00	Logic	SOT-223
AUIRLR014N	Gen 5	140.00	10	5.30	1.00 ... 3.00	5.00	Logic	TO-252 (DPAK)
AUIRFL014N	Gen 5	160.00	2	120.00	2.00 ... 4.00	7.00	Normal	SOT-223

1) See packages on page 134 to 136

# Automotive N-Channel MOSFETs

## 60 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRF7478Q	Gen 7	26	7	20	1.00 ... 3.00	21	Logic	SO-8 (DSO-8)

## 75 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRFP2907	Gen 7	4.50	90	0.32	2.00 ... 4.00	410	Normal	TO-247
IPB100N08S2L-07	OptiMOS™	6.50	100	0.50	1.20 ... 2.00	185	Logic	TO263-3-2
IPB100N08S2-07	OptiMOS™	6.80	100	0.50	2.10 ... 4.00	153	Normal	TO263-3-2
IPB80N08S2L-07	OptiMOS™	6.80	80	0.50	1.20 ... 2.00	186	Logic	TO263-3-2
IPP100N08S2L-07	OptiMOS™	6.80	100	0.50	1.20 ... 2.00	182	Logic	TO220-3
IPB80N08S2-07	OptiMOS™	7.10	80	0.50	2.10 ... 4.00	182	Normal	TO263-3-2
IPP100N08S2-07	OptiMOS™	7.10	100	0.50	2.10 ... 4.00	144	Normal	TO220-3
IPI100N08S2-07	OptiMOS™	7.10	100	0.50	2.10 ... 4.00	144	Normal	TO262-3
IPP80N08S2L-07	OptiMOS™	7.10	80	0.50	1.20 ... 2.00	183	Logic	TO220-3
IPI80N08S2-07	OptiMOS™	7.40	80	0.50	2.10 ... 4.00	144	Normal	TO262-3
AUIRF3007	Gen 7	12.60	75	0.74	2.00 ... 4.00	89	Normal	TO-220
AUIRF2807	Gen 7	13.00	75	0.65	2.00 ... 4.00	107	Normal	TO-220
IPD30N08S2L-21	OptiMOS™	20.50	30	1.10	1.20 ... 2.00	43	Logic	TO252-3 (DPAK)
IPD30N08S2-22	OptiMOS™	21.50	30	1.10	2.10 ... 4.00	44	Normal	TO252-3 (DPAK)
IPD22N08S2L-50	OptiMOS™	50.00	22	2.00	1.20 ... 2.00	21	Logic	TO252-3 (DPAK)

## 100 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRLR3410	Gen 5	105	15	1.90	1.00 ... 2.00	23	Logic	TO-252 (DPAK)
AUIRLR120N	Gen 5	185	11	3.10	1.00 ... 2.00	13	Logic	TO-252 (DPAK)

## 150 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRF3415	Gen 5	42	43	0.75	2.00 ... 4.00	133	Normal	TO-220
AUIRF3315S	Gen 5	82	21	1.60	2.00 ... 4.00	63	Normal	TO-263-3 (D <sup>2</sup> PAK)

1) See packages on page 134 to 136



# Automotive P-Channel MOSFETs

## 30 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
IPB80P03P4L-04	OptiMOS™-P2	4.10	-80	1.10	-2.00 ... -1.00	125	Logic	TO263-3-2
IPP80P03P4L-04	OptiMOS™-P2	4.40	-80	1.10	-2.00 ... -1.00	125	Logic	TO220-3
IPD90P03P4L-04	OptiMOS™-P2	4.50	-90	1.10	-2.00 ... -1.00	100	Logic	TO252-3 (DPAK)
IPD90P03P4-04	OptiMOS™-P2	4.50	-90	1.10	-4.00 ... -2.00	100	Normal	TO252-3 (DPAK)
IPB80P03P4-05	OptiMOS™-P2	4.70	-80	1.10	-4.00 ... -2.00	100	Normal	TO263-3-2
IPD80P03P4L-07	OptiMOS™-P2	6.80	-80	1.70	-2.00 ... -1.00	80	Logic	TO252-3 (DPAK)
IPB80P03P4L-07	OptiMOS™-P2	6.90	-80	1.70	-2.00 ... -1.00	63	Logic	TO263-3-2
IPD50P03P4L-11	OptiMOS™-P2	10.50	-50	2.60	-2.00 ... -1.00	42	Logic	TO252-3 (DPAK)
IPB45P03P4L-11	OptiMOS™-P2	10.80	-45	2.60	-2.00 ... -1.00	42	Logic	TO263-3-2

## 40 V (Trench)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
IPB180P04P4L-02	OptiMOS™-P2	2.40	-100	1.00	-2.20 ... -1.70	220	Logic	TO263-7-3
IPB180P04P4-03	OptiMOS™-P2	2.80	-100	1.00	-4.00 ... -2.00	190	Normal	TO263-7-3
IPB120P04P4L-03	OptiMOS™-P2	3.00	-120	1.10	-2.20 ... -1.70	180	Logic	TO263-3-2
IPP120P04P4L-03	OptiMOS™-P2	3.40	-120	1.10	-2.20 ... -1.70	180	Logic	TO220-3
IPB120P04P4-04	OptiMOS™-P2	3.60	-120	1.10	-4.00 ... -2.00	158	Normal	TO263-3-2
IPB80P04P4L-04	OptiMOS™-P2	4.20	-90	1.20	-2.20 ... -1.70	135	Logic	TO263-3-2
IPD90P04P4L-04	OptiMOS™-P2	4.30	-90	1.20	-2.20 ... -1.70	135	Logic	TO252-3 (DPAK)
IPD90P04P4-05	OptiMOS™-P2	4.70	-90	1.20	-4.00 ... -2.00	118	Normal	TO252-3 (DPAK)
IPB80P04P4-05	OptiMOS™-P2	4.90	-80	1.20	-4.00 ... -2.00	118	Normal	TO263-3-2
IPB80P04P4L-06	OptiMOS™-P2	6.40	-80	1.70	-2.20 ... -1.70	71	Logic	TO263-3-2
IPD85P04P4L-06	OptiMOS™-P2	6.40	-85	1.70	-2.20 ... -1.70	80	Logic	TO252-3 (DPAK)
IPB80P04P4-07	OptiMOS™-P2	7.30	-80	1.70	-4.00 ... -2.00	71	Normal	TO263-3-2
IPD85P04P4-07	OptiMOS™-P2	7.30	-85	1.70	-4.00 ... -2.00	69	Normal	TO252-3 (DPAK)
IPD70P04P4L-08	OptiMOS™-P2	7.80	-70	2.00	-2.20 ... -1.70	63	Logic	TO252-3 (DPAK)
IPD70P04P4-09	OptiMOS™-P2	8.90	-70	2.00	-4.00 ... -2.00	54	Normal	TO252-3 (DPAK)
IPB70P04P4-09	OptiMOS™-P2	9.30	-70	2.00	-4.00 ... -2.00	54	Normal	TO263-3-2
IPD50P04P4L-11	OptiMOS™-P2	10.60	-50	2.60	-2.20 ... -1.70	45	Logic	TO252-3 (DPAK)
IPD50P04P4-13	OptiMOS™-P2	12.60	-50	2.60	-4.00 ... -2.00	39	Normal	TO252-3 (DPAK)

1) See packages on page 134 to 136

# Automotive P-Channel MOSFETs

## 20 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF7207Q	Gen 5	60	-5.00	n/a	-1.60 ... -0.70	15	Logic	SO-8 (DSO-8)
AUIRF7304Q	Gen 5	2 x 90	-4.30	n/a	-1.60 ... -0.70	15	Logic	SO-8 (DSO-8)

## 30 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF7416Q	Gen 5	20	-10.00	n/a	-2.00 ... -1.00	61	Logic	SO-8 (DSO-8)
AUIRF7316Q	Gen 5	2 x 58	-4.90	n/a	-3.00 ... -1.00	23	Logic	SO-8 (DSO-8)

## 55 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF4905	Gen 5	20	-74.00	0.75	-4.00 ... -2.00	120	Normal	TO-220
AUIRF4905L	Gen 5	20	-74.00	0.75	-4.00 ... -2.00	120	Normal	TO-262
AUIRF4905S	Gen 5	20	-74.00	0.75	-4.00 ... -2.00	120	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF5305	Gen 5	65	-28.00	1.40	-4.00 ... -2.00	42	Normal	TO-252 (DPAK)
AUIRF9Z34N	Gen 5	100	-17.00	2.20	-4.00 ... -2.00	23	Normal	TO-220
AUIRF7342Q	Gen 5	2 x 105	-3.40	n/a	-3.00 ... -1.00	26	Logic	SO-8 (DSO-8)
AUIRF5505	Gen 5	110	-18.00	2.20	-4.00 ... -2.00	21	Normal	TO-252 (DPAK)
AUIRF9024N	Gen 5	175	-11.00	3.30	-4.00 ... -2.00	13	Normal	TO-252 (DPAK)

## 100 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF5210S	Gen 5	60	-38	0.75	-4.00 ... -2.00	150	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF9540N	Gen 5	117	-23	1.10	-4.00 ... -2.00	65	Normal	TO-220
AUIRF5410	Gen 5	205	-13	1.90	-4.00 ... -2.00	39	Normal	TO-252 (DPAK)

## 150 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$R_{thJC}$ (max) [K/W]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/ logic level	Package <sup>1)</sup>
AUIRF6218S	Gen 5	150	-27	0.61	-5.00 ... -3.00	71	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF6215S	Gen 5	290	-13	1.40	-4.00 ... -2.00	44	Normal	TO-263-3 (D <sup>2</sup> PAK)
AUIRF6215	Gen 5	290	-13	1.40	-4.00 ... -2.00	44	Normal	TO-220
AUIRF6215	Gen 5	295	-13	1.40	-4.00 ... -2.00	44	Normal	TO-252 (DPAK)

1) See packages on page 134 to 136

# Automotive N+P-Channel MOSFETs

## 30 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRF7319Q	Gen 5	29/58	5.80/-4.90	1.00 ... 3.00	22.00/23.00	Logic	SO-8 (DSO-8)
AUIRF7379Q	Gen 5	45/90	5.80/-4.30	1.00 ... 3.00	25.00/25.00	Logic	SO-8 (DSO-8)
AUIRF7309Q	Gen 5	50/100	4.70/-3.50	1.00 ... 3.00	25.00/25.00	Logic	SO-8 (DSO-8)
AUIRF9952Q	Gen 5	100/250	3.50/-2.30	1.00 ... 3.00	6.90/6.10	Logic	SO-8 (DSO-8)

## 55 V (Planar)



Product name	Technology	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Normal/logic level	Package <sup>1)</sup>
AUIRF7343Q	Gen 5	50/105	4.70/-3.40	1.00 ... 3.00	24/26	Logic	SO-8 (DSO-8)

1) See packages on page 134 to 136

# Small Signal MOSFETs

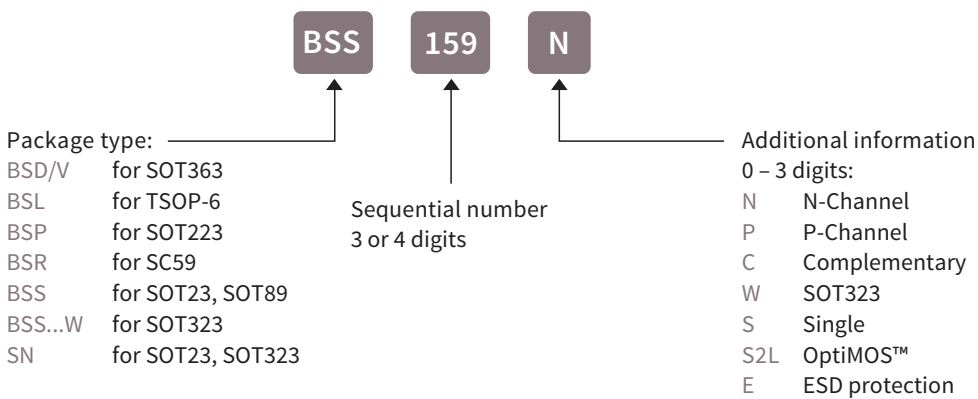
Infineon offers a full range of Small Signal MOSFETs qualified according AEC-Q101.

## The portfolio includes

- > Polarity: N-Channel enhancement, N-Channel depletion and P-Channel MOSFETs
- > Voltage classes: -250 ... 800 V
- >  $V_{GS}$  rating: 10 V (normal level), 4.5 V (logic level), 2.5 V (super logic level), 1.8 V (ultra logic level)
- > Packages: SOT223, SOT89, TSOP-6 (single and dual), SC59, SOT23, SOT323, SOT363 (single and dual)
- > Configuration: single, dual, complementary (n+p pairs)
- > Additional features: the products with names ending with "E" have an Integrated ESD protection

SC59 is an enhanced version of the SOT23: it's footprint compatible with SOT23, but allows a bigger chip inside, therefore a lower  $R_{DS(on)}$ .

## Naming system



[www.infineon.com/smallsignalmosfets](http://www.infineon.com/smallsignalmosfets)  
[www.infineon.com/complementary](http://www.infineon.com/complementary)  
[www.infineon.com/pchannel](http://www.infineon.com/pchannel)  
[www.infineon.com/depletion](http://www.infineon.com/depletion)



## N-Channel MOSFETs

Voltage	Product name	$R_{DS(on)}$ @ 10 V [mΩ]	$I_D$ [A]	$V_{GS(th)}$ (min-max) [V]	$Q_G$ (typ) [nC]	Technology	Package <sup>1)</sup>
20 V	BSR202N	21 <sup>2)</sup>	3.80	0.70 ... 1.20	5.80	OptiMOS™2	SC59
	BSL802SN	22 <sup>3)</sup>	7.50	0.30 ... 0.75	4.70	OptiMOS™2	TSOP-6/6
	BSL202SN	22 <sup>2)</sup>	7.50	0.70 ... 1.20	5.80	OptiMOS™2	TSOP-6/6
	BSR802N	23 <sup>3)</sup>	3.70	0.30 ... 0.75	4.70	OptiMOS™2	SC59
	BSL205N	50 <sup>2)</sup>	2.50	0.70 ... 1.20	2.10	OptiMOS™2	TSOP-6/6 dual
	BSS205N	50 <sup>2)</sup>	2.50	0.70 ... 1.20	2.10	OptiMOS™2	SOT23
	BSL806N	57 <sup>3)</sup>	2.30	0.30 ... 0.75	1.70	OptiMOS™2	TSOP-6/6 dual
	BSS806N	57 <sup>3)</sup>	2.30	0.30 ... 0.75	1.70	OptiMOS™2	SOT23
	BSL207N	70 <sup>2)</sup>	2.10	0.70 ... 1.20	2.10	OptiMOS™2	TSOP-6/6 dual
	BSL214N	140 <sup>2)</sup>	1.50	0.70 ... 1.20	0.80	OptiMOS™2	TSOP-6/6 dual
	BSS214N	140 <sup>2)</sup>	1.50	0.70 ... 1.20	0.80	OptiMOS™2	SOT23
	BSS214NW	140 <sup>2)</sup>	1.50	0.70 ... 1.20	0.80	OptiMOS™2	SOT323
	BSD214SN	140 <sup>2)</sup>	1.50	0.70 ... 1.20	0.80	OptiMOS™2	SOT363
	BSS816NW	160 <sup>3)</sup>	1.40	0.30 ... 0.75	0.60	OptiMOS™2	SOT323
30 V	BSR302N	23	3.70	1.20 ... 2.00	4.40	OptiMOS™2	SC59
	BSL302SN	25	7.10	1.20 ... 2.00	4.40	OptiMOS™2	TSOP-6/6
	BSL306N	57	2.30	1.20 ... 2.00	1.60	OptiMOS™2	TSOP-6/6 dual
	BSS306N	57	2.30	1.20 ... 2.00	1.50	OptiMOS™2	SOT23
	BSS316N	160	1.40	1.20 ... 2.00	0.60	OptiMOS™2	SOT23
	BSD316SN	160	1.40	1.20 ... 2.00	0.60	OptiMOS™2	SOT363
	BSS67052L	650	0.54	1.20 ... 2.00	1.70	OptiMOS™	SOT23
	BSS606N	60	3.20	1.30 ... 2.30	3.70	OptiMOS™3	SOT89
	BSL606SN	60	4.50	1.30 ... 2.30	3.70	OptiMOS™3	TSOP-6/6
	BSR606N	60	2.30	1.30 ... 2.30	3.70	OptiMOS™3	SC59
60 V	BSP318S	90	2.60	1.20 ... 2.00	14.00	SIPMOS™	SOT223
	BSP320S	120	2.90	2.10 ... 4.00	9.70	SIPMOS™	SOT223
	BSP295	300	1.80	0.80 ... 1.80	14.00	SIPMOS™	SOT223
	2N7002DW	3000	0.30	1.50 ... 2.50	0.40	OptiMOS™	SOT363 dual
	BSS138N	3500	0.23	0.60 ... 1.40	1.00	SIPMOS™	SOT23
	BSS138W	3500	0.28	0.60 ... 1.40	1.00	SIPMOS™	SOT223
	SN7002N	5000	0.20	0.80 ... 1.80	1.00	SIPMOS™	SOT23
	BSS7728N	5000	0.20	1.30 ... 2.30	1.00	SIPMOS™	SOT23
	SN7002W	5000	0.23	0.80 ... 1.80	1.00	SIPMOS™	SOT323
	100 V	BSL372SN	220	2.00	0.80 ... 1.80	9.50	OptiMOS™
BSP372N		230	1.80	0.80 ... 1.80	9.50	OptiMOS™	SOT223
BSL373SN		230	2.00	2.10 ... 4.00	6.20	OptiMOS™	TSOP-6/6
BSP373N		240	1.80	2.10 ... 4.00	6.20	OptiMOS™	SOT223
BSL296SN		460	1.40	0.80 ... 1.80	2.70	OptiMOS™	TSOP-6/6
BSP296N		600	1.20	0.80 ... 1.80	4.50	OptiMOS™	SOT223
BSS123N		6000	0.19	0.80 ... 1.80	0.60	OptiMOS™	SOT23
200 V	BSS119N	6000	0.19	1.30 ... 2.30	0.60	OptiMOS™	SOT23
	BSP297	1800	0.66	0.80 ... 1.80	12.90	SIPMOS™	SOT223
240 V	BSP89	6000	0.35	0.80 ... 1.80	4.30	SIPMOS™	SOT223
	BSP88	6000	0.35	0.60 ... 1.40	4.50	SIPMOS™	SOT223
	BSS87	6000	0.26	0.80 ... 1.80	3.70	SIPMOS™	SOT89
	BSS131	14,000	0.11	0.80 ... 1.80	2.10	SIPMOS™	SOT23
400 V	BSP298	3000	0.50	2.10 ... 4.00	-	SIPMOS™	SOT223
	BSP324	25,000	0.17	1.30 ... 2.30	4.50	SIPMOS™	SOT223
500 V	BSP299	4000	0.40	2.10 ... 4.00	-	SIPMOS™	SOT223

1) See packages on page 134 to 136

2)  $R_{DS(on)}$  at 4.5 V3)  $R_{DS(on)}$  at 2.5 V

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