



TFS-STAR

Distribution | Systemlösungen | Engineering

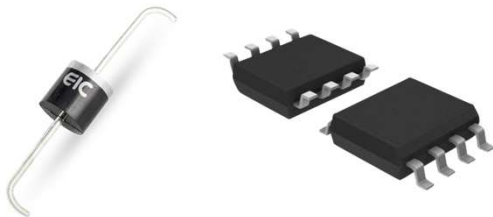
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Power Components Linecard



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- Power Discrete:
- Mosfets, IGBTs, Diodes, Rectifiers, Thyristors, Triacs
- Integrated Circuits:
- Power Management ICs & Special ICs
- Power Supplies:
- AC-DC & DC-DC Converters & LED Drivers
- Passive Components:
- Transformers & Inductors, Filters, Ceramic- & HV-Capacitors



	Mosfets (Discrete / Modules)	IGBTs (Discrete / Modules)	Diodes, Rectifiers, Thyristors, Triacs	Power Management ICs Special ICs	AC-DC Converters DC-DC Converters LED Drivers	Transformers Inductors Filters	Passive Components: HV-Capacitors, MLCC, E-Caps, Thermistors, Varistors, Resistors
UTC / Unisonic Technology	■	■	■	■	■		
YDS / Yuan Dean Scientific					■	■	■
Trinno Technology	■	■	■				
EIC Semi			■				
ACAP							■
Magic Power					■		
Fenghua Advanced Technology						■	■
CYG Way-On	■		■	■			■
Ansas Semiconductors	■		■				■



- Chinese Manufacturer (Shanghai)
- Founded 1996
- Certified due to ISO9001, ISO14001
Manufacturing according to ISO/TS16949
- Key products are UL, CSA und TÜV certified
- TVS & Mosfet AEC-Q certified
- Turnover 2018: 75 Mio. USD
- ~ 500 employees (70 R& D; 20 FAE)
- Very strong R&D orientation

Advantages:

- Broad target markets: Automotive / Consumer / Industry
- Big SuperJunction Mosfet lineup up to 900V
- Automotive certified TVS diodes
- Product strength in ESD & EOS protection

Semiconductor Components

- SJ Mosfet (600V- 900V)
- Thyristors
- ESD & EOS Devices
- TVS Diodes
- IC (LDO, Transceiver CLS)

Circuit Protection ICs

- PTC; CPTC
- Fuses; SMD; SCF
- MOV; GDT;



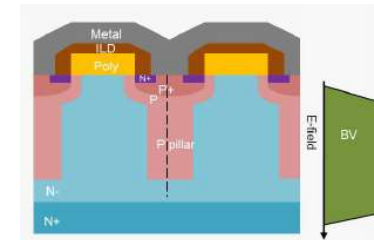


• Features

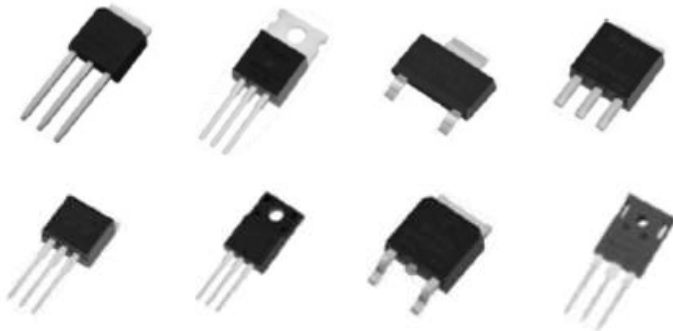
- Voltage Range 600V – 900V
- Ultra-Low RDS(on)
- Ultra low gate charge
- 100% Avalanche Rated & 100% avalanche tested
- Very cost-effective

• Application

- Charger/Adapter
- PC
- TV
- LED Lighting / Lamp ballast / EVG
- Server
- UPS



- Charge balance principle
- 1st SJ-MOS patent in 1993
- 1st commercial SJ-MOSFET in 1998
- Thinner EPI layer
- $R_{ds(on)} \cdot A \propto BV^{1.32}$



Power Components

WAYON

SJ-Mosfet



TFS-STAG

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- SuperJunction Target Application



SMPS



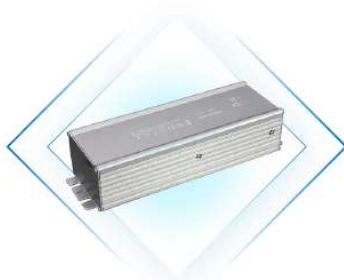
TV



Charger



Adapter



LED



Charging Pile



Server/UPS



PC



- Power Semiconductor Roadmap

Broad Range of SJ Mosfet:

- Ultra-low RDS(on)
- Ultra-low Gate Charge
- Broad voltage range up to 1200V
 - C2/C4/C5 Series corresponding to different Infineon Families with similar performance
- FD-Series with Fast Body Diode
- Broad range of packages





- SR-Family: 650V/700V Super Junction Power Mosfet

$R_{DS(on),max}$ [Ω]	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
0.6	WMO11N65SR	WMP11N65SR	WML11N65SR	WMK11N65SR	WMM11N65SR	WMN11N65SR	
0.38	WMO14N65SR	WMP14N65SR	WML14N65SR	WMK14N65SR	WMM14N65SR	WMN14N65SR	
0.35	WMO16N65SR	WMP16N65SR	WML16N65SR	WMK16N65SR	WMM16N65SR	WMN16N65SR	
0.198			WML26N65SR	WMK26N65SR	WMM26N65SR	WMN26N65SR	WMJ26N65SR
0.04							WMJ80N65SR*
0.03							WMJ90N65SR
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0.61	WMO11N70SR	WMP11N70SR	WML11N70SR	WMK11N70SR	WMM11N70SR	WMN11N70SR	
0.395	WMO14N70SR	WMP14N70SR	WML14N70SR	WMK14N70SR	WMM14N70SR	WMN14N70SR	
0.36	WMO16N70SR	WMP16N70SR	WML16N70SR	WMK16N70SR	WMM16N70SR	WMN16N70SR	
0.21			WML26N70SR	WMK26N70SR	WMM26N70SR	WMN26N70SR	WMJ26N70SR



- C4-Family: 500V Super Junction Power Mosfet

$R_{DS(on),max} [\Omega]$	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
0.95	WMO06N50C4	WMP06N50C4*	WML06N50C4	WMK06N50C4*	WMM06N50C4*	WMN06N50C4*	
0.65	WMO10N50C4	WMP10N50C4*	WML10N50C4	WMK10N50C4*	WMM10N50C4*	WMN10N50C4*	
0.48	WMO13N50C4	WMP13N50C4	WML13N50C4	WMK13N50C4	WMM13N50C4	WMN13N50C4	
0.3	WMO18N50C4	WMP18N50C4	WML18N50C4	WMK18N50C4	WMM18N50C4	WMN18N50C4	
0.27	WMO22N50C4	WMP22N50C4	WML22N50C4	WMK22N50C4	WMM22N50C4	WMN22N50C4	
0.16	WMO25N50C4	WMP25N50C4	WML25N50C4	WMK25N50C4	WMM25N50C4	WMN25N50C4	WMJ25N50C4
0.125			WML28N50C4	WMK28N50C4	WMM28N50C4	WMN28N50C4	WMJ28N50C4
0.085			WML40N50C4	WMK40N50C4	WMM40N50C4	WMN40N50C4	WMJ40N50C4



- C4-Family: 650V / 700V SuperJunction Mosfet

$R_{DS(on),max}$ [Ω]	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
1.14	WMO07N65C4	WMP07N65C4	WML07N65C4	WMK07N65C4	WMM07N65C4	WMN07N65C4	
0.78	WMO08N65C4	WMP08N65C4	WML08N65C4	WMK08N65C4	WMM08N65C4	WMN08N65C4	
0.6	WMO10N65C4	WMP10N65C4	WML10N65C4	WMK10N65C4	WMM10N65C4	WMN10N65C4	
0.38	WMO14N65C4	WMP14N65C4	WML14N65C4	WMK14N65C4	WMM14N65C4	WMN14N65C4	
0.3	WMO15N65C4	WMP15N65C4	WML15N65C4	WMK15N65C4	WMM15N65C4	WMN15N65C4	
0.19	WMO26N65C4	WMP26N65C4	WML26N65C4	WMK26N65C4	WMM26N65C4	WMN26N65C4	
0.16			WML28N65C4	WMK28N65C4	WMM28N65C4	WMN28N65C4	WMJ28N65C4
0.097			WML36N65C4	WMK36N65C4	WMM36N65C4	WMN36N65C4	WMJ36N65C4
0.07			WML53N65C4		WMM53N65C4	WMN53N65C4	WMJ53N65C4
0.039							WMJ80N65C4
0.029							WMJ90N65C4
0.023							WMJ99N65C4
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1.14	WMO07N70C4	WMP07N70C4*	WML07N70C4	WMK07N70C4*	WMM07N70C4*	WMN07N70C4*	
0.78	WMO08N70C4	WMP08N70C4*	WML08N70C4	WMK08N70C4*	WMM08N70C4*	WMN08N70C4*	
0.6	WMO10N70C4	WMP10N70C4*	WML10N70C4	WMK10N70C4*	WMM10N70C4*	WMN10N70C4*	
0.38	WMO14N70C4	WMP14N70C4*	WML14N70C4	WMK14N70C4*	WMM14N70C4*	WMN14N70C4*	
0.3	WMO15N70C4	WMP15N70C4*	WML15N70C4	WMK15N70C4*	WMM15N70C4*	WMN15N70C4*	



- EM / MM-Family: 650V / 700V SuperJunction Mosfet

$R_{DS(on),max} [\Omega]$	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
1.5	WMO05N65MM	WMP05N65MM	WML05N65MM	WMK05N65MM	WMM05N65MM	WMN05N65MM	
1.2	WMO06N65EM*	WMP06N65EM*	WML06N65EM*	WMK06N65EM*	WMM06N65EM*	WMN06N65EM*	
0.95	WMO08N65EM	WMP08N65EM*	WML08N65EM*	WMK08N65EM*	WMM08N65EM*	WMN08N65EM*	
0.6	WMO10N65EM	WMP10N65EM	WML10N65EM	WMK10N65EM	WMM10N65EM	WMN10N65EM	
0.39	WMO13N65EM	WMP13N65EM	WML13N65EM	WMK13N65EM	WMM13N65EM	WMN13N65EM	
0.28	WMO18N65EM	WMP18N65EM	WML18N65EM	WMK18N65EM	WMM18N65EM	WMN18N65EM	WMJ18N65EM
0.24	WMO20N65EM	WMP20N65EM	WML20N65EM	WMK20N65EM	WMM20N65EM	WMN20N65EM	WMJ20N65EM
0.19			WML25N65EM	WMK25N65EM	WMM25N65EM	WMN25N65EM	WMJ25N65EM
0.16			WML30N65EM	WMK30N65EM	WMM30N65EM	WMN30N65EM	WMJ30N65EM
0.06							WMJ60N65EM
0.043							WMJ80N65EM
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1.5	WMO05N70MM	WMP05N70MM	WML05N70MM	WMK05N70MM	WMM05N70MM	WMN05N70MM	
1.3	WMO06N70EM*	WMP06N70EM*	WML06N70EM*	WMK06N70EM*	WMM06N70EM*	WMN06N70EM*	
0.95	WMO08N70EM*	WMP08N70EM*	WML08N70EM*	WMK08N70EM*	WMM08N70EM*	WMN08N70EM*	
0.6	WMO10N70EM	WMP10N70EM	WML10N70EM	WMK10N70EM	WMM10N70EM	WMN10N70EM	
0.39	WMO13N70EM	WMP13N70EM	WML13N70EM	WMK13N70EM	WMM13N70EM	WMN13N70EM	
0.28	WMO18N70EM	WMP18N70EM	WML18N70EM	WMK18N70EM	WMM18N70EM	WMN18N70EM	WMJ18N70EM
0.25	WMO20N70EM	WMP20N70EM	WML20N70EM	WMK20N70EM	WMM20N70EM	WMN20N70EM	WMJ20N70EM
0.2			WML25N70EM	WMK25N70EM	WMM25N70EM	WMN25N70EM	WMJ25N70EM
0.16			WML30N70EM	WMK30N70EM	WMM30N70EM	WMN30N70EM	WMJ30N70EM



- M3/S-Family: 800V SJ-Mosfet

$R_{DS(on),max} [\Omega]$	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
4.0	WMO03N80M3	WMP03N80M3	WML03N80M3	WMK03N80M3	WMM03N80M3	WMN03N80M3	
2.3	WMO05N80M3	WMP05N80M3	WML05N80M3	WMK05N80M3	WMM05N80M3	WMN05N80M3	
2.0	WMO06N80M3	WMP06N80M3	WML06N80M3	WMK06N80M3	WMM06N80M3	WMN06N80M3	
1.8	WMO07N80M3	WMP07N80M3	WML07N80M3	WMK07N80M3	WMM07N80M3	WMN07N80M3	
1.38	WMO08N80M3	WMP08N80M3	WML08N80M3	WMK08N80M3	WMM08N80M3	WMN08N80M3	
1.03	WMO10N80M3	WMP10N80M3	WML10N80M3	WMK10N80M3	WMM10N80M3	WMN10N80M3	
0.8	WMO11N80M3	WMP11N80M3	WML11N80M3	WMK11N80M3	WMM11N80M3	WMN11N80M3	
0.62	WMO12N80M3	WMP12N80M3	WML12N80M3	WMK12N80M3	WMM12N80M3	WMN12N80M3	WMJ12N80M3
0.48	WMO13N80M3	WMP13N80M3	WML13N80M3	WMK13N80M3	WMM13N80M3	WMN13N80M3	WMJ13N80M3
0.36			WML15N80M3	WMK15N80M3	WMM15N80M3	WMN15N80M3	WMJ15N80M3
0.26			WML25N80M3	WMK25N80M3	WMM25N80M3	WMN25N80M3	WMJ25N80M3
0.195			WML30N80M3	WMK30N80M3	WMM30N80M3	WMN30N80M3	WMJ30N80M3
0.128			WML35N80M3				WMJ35N80M3
0.075							WMJ65N80M3*
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1.5	WMO80R1K0S	WMP80R1K0S	WML80R1K0S	WMK80R1K0S	WMM80R1K0S	WMN80R1K0S	
1.1	WMO80R850S	WMP80R850S	WML80R850S	WMK80R850S	WMM80R850S	WMN80R850S	
0.83	WMO80R720S	WMP80R720S	WML80R720S	WMK80R720S	WMM80R720S	WMN80R720S	
0.5	WMO80R600S	WMP80R600S	WML80R600S	WMK80R600S	WMM80R600S	WMN80R600S	
0.36	WMO80R350S	WMP80R350S	WML80R350S	WMK80R350S	WMM80R350S	WMN80R350S	WMJ80R350S
0.26	WMO80R260S	WMP80R260S	WML80R260S	WMK80R260S	WMM80R260S	WMN80R260S	WMJ80R260S



- S-/C2-Family: 900V/ 950V Super Junction Power Mosfet

$R_{DS(on),max}$ [Ω]	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
5.2	WMO03N90C2	WMP03N90C2	WML03N90C2	WMK03N90C2	WMM03N90C2	WMN03N90C2	
3.1	WMO05N90C2	WMP05N90C2	WML05N90C2	WMK05N90C2	WMM05N90C2	WMN05N90C2	
2.5	WMO06N90C2	WMP06N90C2	WML06N90C2	WMK06N90C2	WMM06N90C2	WMN06N90C2	
2.0	WMO07N90C2	WMP07N90C2	WML07N90C2	WMK07N90C2	WMM07N90C2	WMN07N90C2	
1.37	WMO09N90C2	WMP09N90C2	WML09N90C2	WMK09N90C2	WMM09N90C2	WMN09N90C2	
1.5	WMO90R1K5S	WMP90R1K5S	WML90R1K5S	WMK90R1K5S	WMM90R1K5S	WMN90R1K5S	
1.1	WMO90R1K1S	WMP90R1K1S	WML90R1K1S	WMK90R1K1S	WMM90R1K1S	WMN90R1K1S	
0.83	WMO90R830S	WMP90R830S	WML90R830S	WMK90R830S	WMM90R830S	WMN90R830S	
0.5	WMO90R500S	WMP90R500S	WML90R500S	WMK90R500S	WMM90R500S	WMN90R500S	WMJ90R500S
0.36	WMO90R360S	WMP90R360S	WML90R360S	WMK90R360S	WMM90R360S	WMN90R360S	WMJ90R360S
0.26	WMO90R260S	WMP90R260S	WML90R260S	WMK90R260S	WMM90R260S	WMN90R260S	WMJ90R260S
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2.7	WMO05N95C2	WMP05N95C2	WML05N95C2	WMK05N95C2	WMM05N95C2	WMN05N95C2	
1.85	WMO07N95C2	WMP07N95C2	WML07N95C2	WMK07N95C2	WMM07N95C2	WMN07N95C2	
1.1	WMO08N95C2	WMP08N95C2	WML08N95C2	WMK08N95C2	WMM08N95C2	WMN08N95C2	
0.86	WMO11N95C2	WMP11N95C2	WML11N95C2	WMK11N95C2	WMM11N95C2	WMN11N95C2	
0.55			WML12N95C2	WMK12N95C2	WMM12N95C2	WMN12N95C2	WMJ12N95C2
0.44			WML15N95C2	WMK15N95C2	WMM15N95C2	WMN15N95C2	WMJ15N95C2



- C2-Family: 1000V/1050V Super Junction Power Mosfet

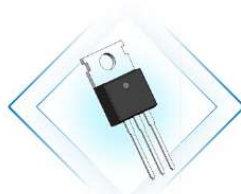
$R_{DS(on),max} [\Omega]$	TO-252	TO-251	TO-220F	TO-220	TO-263	TO-262	TO-247
3.5	WMO05N100C2	WMP05N100C2	WML05N100C2	WMK05N100C2	WMM05N100C2	WMN05N100C2	
2.5	WMO07N100C2	WMP07N100C2	WML07N100C2	WMK07N100C2	WMM07N100C2	WMN07N100C2	
1.4	WMO10N100C2	WMP10N100C2	WML10N100C2	WMK10N100C2	WMM10N100C2	WMN10N100C2	
0.8			WML12N100C2	WMK12N100C2	WMM12N100C2	WMN12N100C2	WMJ12N100C2
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3.5	WMO05N105C2	WMP05N105C2	WML05N105C2	WMK05N105C2	WMM05N105C2	WMN05N105C2	
2.5	WMO07N105C2	WMP07N105C2	WML07N105C2	WMK07N105C2	WMM07N105C2	WMN07N105C2	
1.4	WMO10N105C2	WMP10N105C2	WML10N105C2	WMK10N105C2	WMM10N105C2	WMN10N105C2	
0.8			WML12N105C2	WMK12N105C2	WMM12N105C2	WMN12N105C2	WMJ12N105C2



- WAYON New Package Innovation



SOT-223-2L



TO-220 ISO



TO-220F SL

New fullpak type through-hole TO packages



19mm

Standard
TO-220F



17.8mm

New
Wayon
TO-220F N



15.3mm

New
Wayon
O-220F NL



15mm

New
Wayon
TO-220F SL



- SJ-Mosfet in small packages

SOT223-2L Package

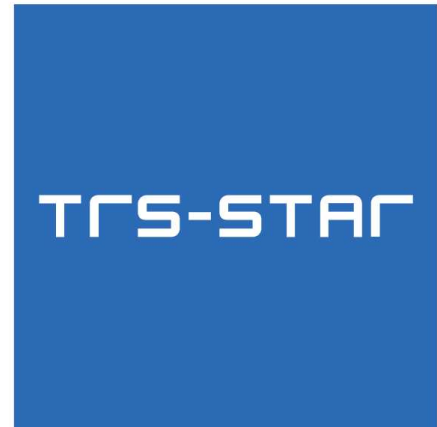
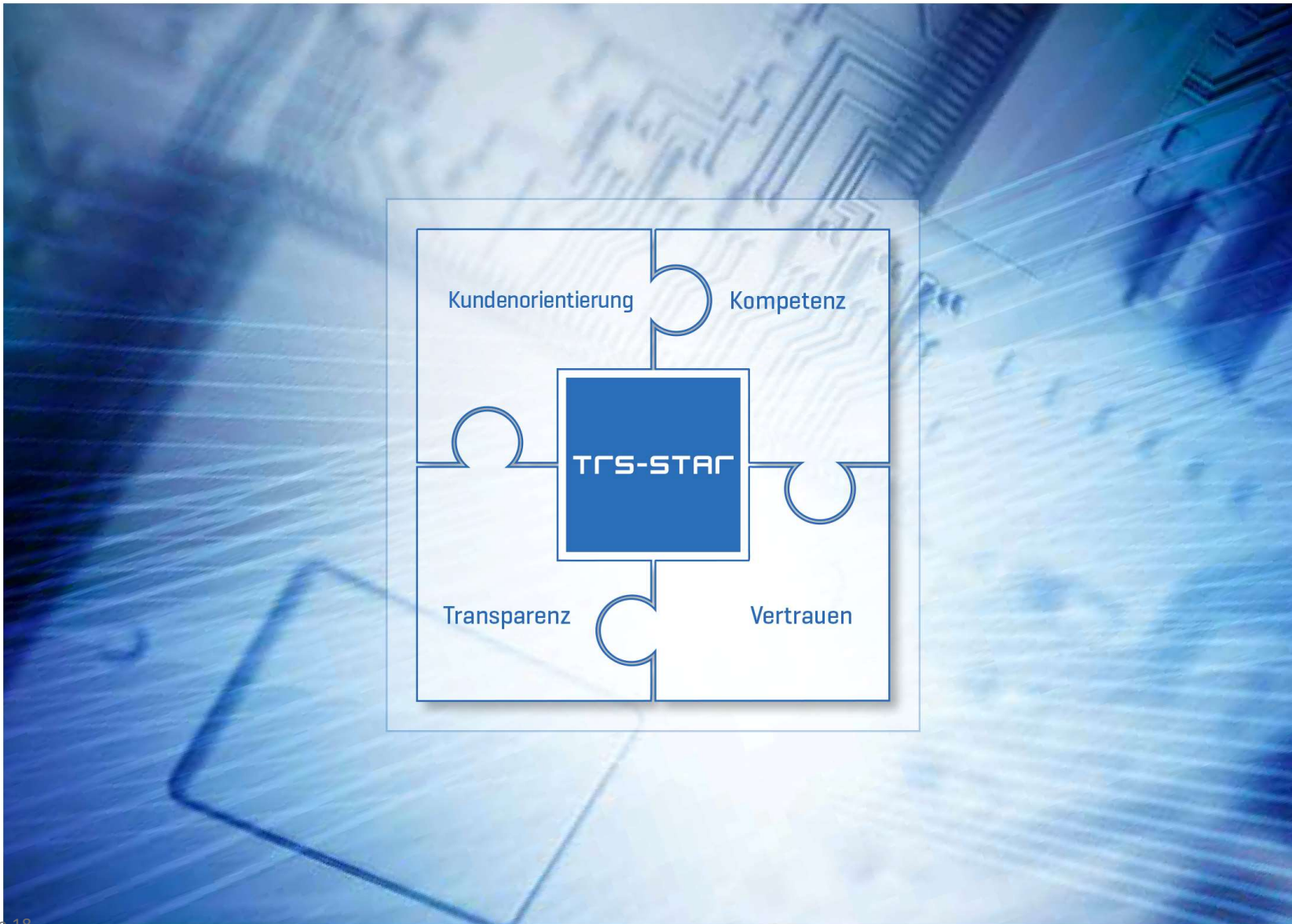
Rdson,max [Ω]	600V	650V	700V	800V	900V
2.5					WMF06N90C2
2.1				WMF06N80M3	
2.0	WMF04N60C2	WMF04N65C2			
1.6		WMF05N65MM	WMF05N70MM		
1.2	WMF07N60C4	WMF07N65C4			
0.80	WMF08N60C4	WMF08N65C4			
0.61	WMF10N60C4	WMF10N65C4			

PDFN5*6 Package

RDS(on) ,max[Ω]	600V	650V
0.40		WMB13N65EM
0.39	WMB14N60C4	WMB14N60C4
0.30		WMB18N65EM

PDFN8*8 Package

RDS(on) ,max[Ω]	600V	650V	700V
0.39	WMZ14N60C4	WMZ13N65EM	
0.25			WMZ20N70EM
0.2	WMZ26N60C4	WMZ26N65C4	
0.2	WMZ28N60F2		
0.102	WMZ36N60C4	WMZ36N65C4	
0.072	WMZ53N60C4	WMZ53N65C4	
0.079	WMZ53N60F2	WMZ53N65F2	



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