

WeEn Semiconductors

PRODUCT SELECTION GUIDE

2022 WeEn Semiconductors

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Date of release: May 2022

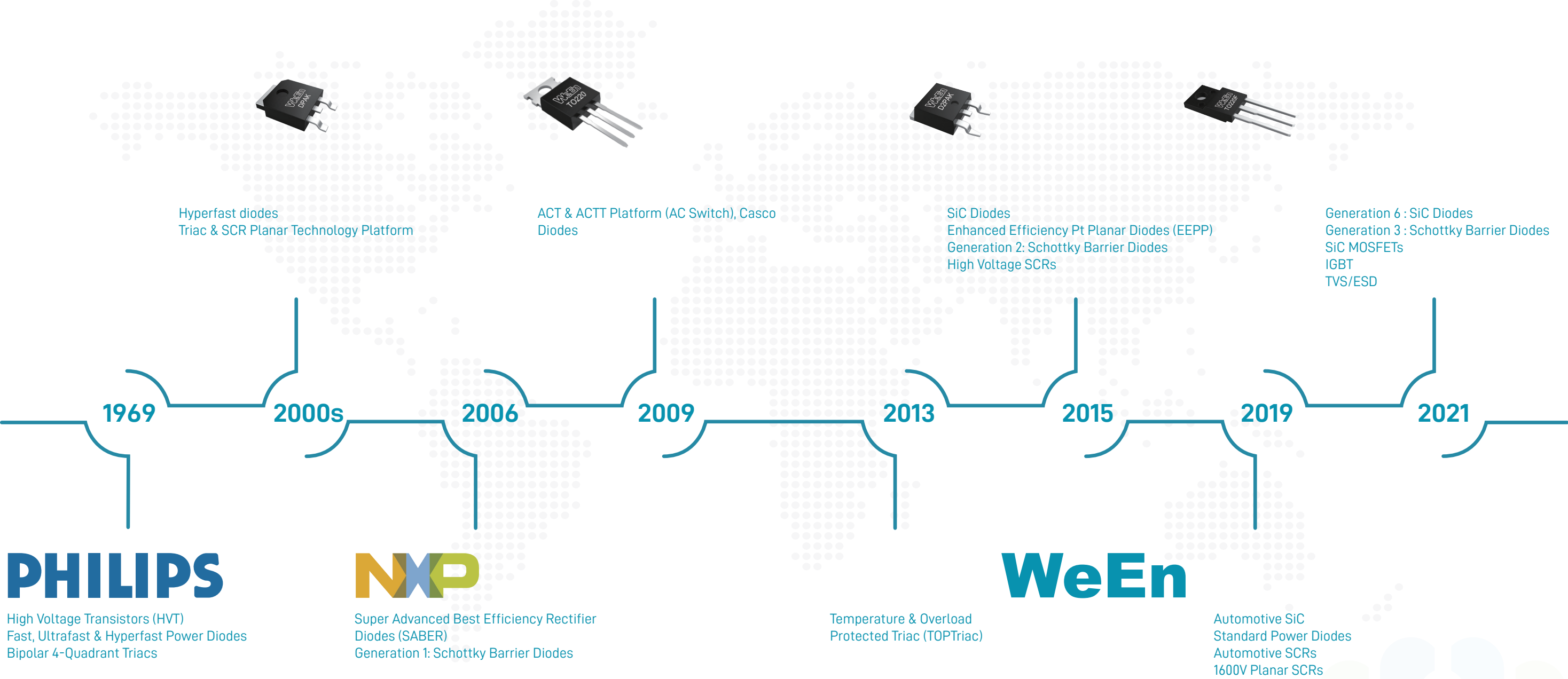
Document order number: 20220530



website: www.ween-semi.com



WeEn Semiconductors; spun off from NXP; over 50 years' leading experience in the power segment



WeEn Company Introduction

WeEn Semiconductors Co., Ltd was registered as a company on Aug 5, 2015.

WeEn's global footprint has an operational headquarter in Shanghai and wholly owned subsidiaries and centers in Jilin (North East China, Front-End Fabrication) , Hong Kong, Manchester (Research and Development) , Dongguan (Warehouse and Distribution), and cities throughout the world (Sales Offices and Customer Service Access).

In September 2018, WeEn added its new, in-house, reliability and failure analysis laboratory in Nanchang, Jiangxi Province, China.

With a heritage of over 50 years in semiconductor development and manufacturing, WeEn as a key player has focused on developing a wide and deep portfolio of industry-leading power products including Silicon Carbide Power Devices, Silicon Controlled Rectifiers and Triacs, standard and fast recovery Power Diodes , TVS and ESD Diodes and IGBT and Modules.

All these products are widely used in the markets for telecommunications, computing, consumer electronics, intelligent home appliances, lighting, automotive and power management applications. WeEn seeks to help our customers achieve improved cost and production efficiency and contribute to the development of global intelligent manufacturing.

Thyristors

AC THYRISTOR TRIACS	03-04
AC THYRISTORS	03-04
TEMPERATURE AND OVERLOAD PROTECTED TRIACS (TOPTriac)	03-04
SILICON CONTROLLED RECTIFIERS (0.8A - 4A)	05-06
SILICON CONTROLLED RECTIFIERS (8A - 126A)	05-06
SILICON CONTROLLED RECTIFIER POWER MODULE (2 x 182A)	05-06
FOUR-QUADRANT TRIACS (0.6A - 6A)	07-08
FOUR-QUADRANT TRIACS (8A - 45A)	07-08
THREE-QUADRANT Hi-Com TRIACS (0.8A - 10A)	09-10
THREE-QUADRANT Hi-Com TRIACS (12A - 45A)	09-10

Power Diodes

SCHOTTKY RECTIFIER	11-12
BRIDGE RECTIFIER	11-12
3-PHASE BRIDGE RECTIFIER	11-12
CASCO DIODES	13-14
HYBRID DIODES	13-14
ULTRAFAST POWER DIODES	15-16
600V HYPERFAST POWER DIODES	17-18
1200V HYPERFAST POWER DIODES	17-18
STANDARD RECTIFIER	17-18

Silicon Carbide (SiC)

1200V 1700V SiC MOSFETs	19-20
1200V SiC DIODES G2	19-20
650V SiC DIODES G6	19-20
650V SiC DIODES G2	21-22
650V SiC DIODES G2	21-22
AUTOMOTIVE GRADE SiC DIODES	21-22
SiC BARE DIE	21-22

03-10

11-18

19-22

Transient Voltage Suppressors (TVS)

200W TVS DIODES, SOD SERIES	23-24
400W TVS DIODES, P4SOD SERIES	25-26
400W TVS DIODES, SMAJ SERIES	27-28
600W TVS DIODES, P6SMAL SERIES	29-30
600W TVS DIODES, SMBJ SERIES	31-32
1500W TVS DIODES, SMCJ SERIES	33-34
3000W TVS DIODES, SMDJ SERIES	35-36

23-36

Electro-Static Discharge Diodes (ESD)

ESD	37-38
-----	-------

37-38

Insulated Gate Bipolar Transistors (IGBT)

650V IGBT	39-40
1200V IGBT	39-40
WeEn High Voltage 1600V SCRs 1600V/50A & 1600V/80A, Planar Passivated	41
WeEn 30A Hi-Com™ Triacs	42
ESD diodes solution for high speed interface	43
TVS diodes solution	44
Application of SBD for Power Supply	45-46
1200V G2 and 650V G6 advanced SiC DIODE	47
1200V and 1700V SiC MOSFET	48
WeEn Products for EV On Board Charger	49
WeEn Products in Smart Home	50
Certifications	51
WeEn Reliability & Failure Analysis Laboratory	52

39-40

Contents



WeEn
WeEn Semiconductors

01

Thyristors

AC THYRISTOR TRIACS

AC THYRISTORS

TEMPERATURE AND OVERLOAD PROTECTED TRIACS
(TOPTriac)

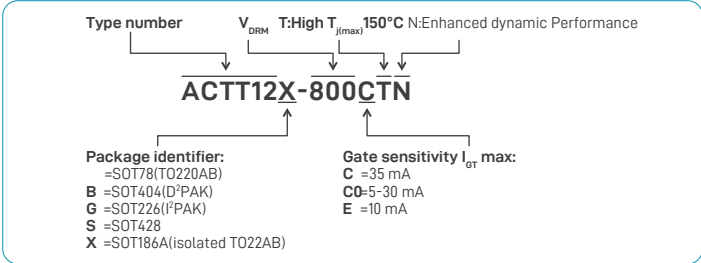
SILICON CONTROLLED RECTIFIERS
(0.8A - 126A)

SILICON CONTROLLED RECTIFIER POWER MODULE
(2 x 182A)

FOUR-QUADRANT TRIACS
(0.6A - 45A)

THREE-QUADRANT Hi-Com TRIACS
(0.8A - 45A)

AC Thyristor Triacs part numbering



In the spotlight

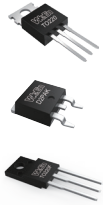
AC Thyristor Triacs ACTT10 series, ACTT12 series

Planar passivated with overvoltage clamping function

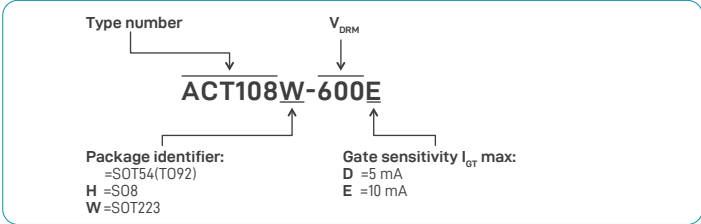
High energy surge handling

Very high dV_G/dt for maximum immunity to false triggering

High $T_j(max)$ to 150°C



AC Thyristors part numbering



In the spotlight

AC Thyristors ACT108-800E, ACT108W-800E

Planar passivated with overvoltage clamping function

Working voltage increased to 800V

Enhanced overvoltage clamping capability

High false trigger immunity



In the spotlight

TOPTriac TOPT12, TOPT16

Planar passivated for voltage ruggedness & reliability

Over temperature & over load protection

No need to over-specify triac and heatsink

Avoid loss of control at high temperature

Status monitoring with help of microcontroller



AC THYRISTOR TRIACS

3Q Hi-Com power switches, overvoltage protection

Types in **bold blue** represent new products

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

N: enhanced Noise immunity T: high $T_{j,max}$ 150°C

I_{GT} key:

C 35mA
C0 5-30mA
E 10mA

$I_{T(RMS)}$ (A)	V_{DRM} (V)	$I_{GT(max)}$ (mA)	TO220	TO220F (SOT186A)	SOT223	TO262 (I2PAK)	TO263 (D2PAK)	TO252 (DPAK)
2	800	E		ACTT2X	ACTT2W			ACTT2S
2	800	ETN		ACTT2X				ACTT2S
4	800	C/E		ACTT4X				ACTT4S
6	800	E				ACTT6G		
6	800	CN	ACTT6	ACTT6X				
8	800	C0/C0T	ACTT8	ACTT8X			ACTT6B	
8	800	CTN	ACTT8	ACTT8X			ACTT6B	
10	800	C/CT	ACTT10	ACTT10X			ACTT8B	
10	800	CTN	ACTT10	ACTT10X			ACTT8B	
12	800	C/CT	ACTT12	ACTT12X			ACTT10B	
12	800	CTN	ACTT12	ACTT12X			ACTT12B	
16	800	CTN	ACTT16	ACTT16X			ACTT12B	
							ACTT16B	

AC THYRISTORS

2Q Hi-Com power switches, exclusive negative gate triggering, common' mounting base, overvoltage protection

Types in **bold blue** represent new products

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

I_{GT} key:

D 5mA
E 10mA

$I_{T(RMS)}$ (A)	V_{DRM} (V)	$I_{GT(max)}$ (mA)	TO92	SOT223	S08
0.2	600	D			ACT102H
0.8	600	D/E	ACT108	ACT108W	
0.8	800	E	ACT108	ACT108W	

TEMPERATURE AND OVERLOAD PROTECTED TRIACS (TOPTriac)

2Q Hi-Com power switches, exclusive negative gate triggering, over-temperature protection

Types in **bold blue** represent new products

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

I_{GT} key:

C0 5-35mA

$I_{T(RMS)}$ (A)	V_{DRM} (V)	$I_{GT(max)}$ (mA)	TO220	TO263
12	800	C0	TOPT12	
16	800	C0	TOPT16	TOPT16B

FOUR-QUADRANT TRIACS

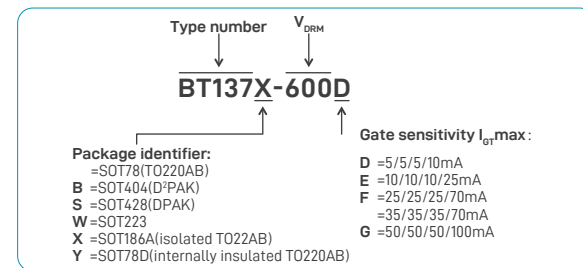
0.6A - 45A

Types in **bold blue** represent new products

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

T: high T_{jmax} 150°C * High I_{TSM} ** Enhanced immunity to false triggering

4Q Triacs part numbering



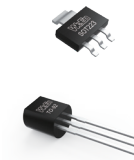
In the spotlight

4Q Triacs Z010***0 series

Planar passivated for voltage ruggedness and reliability

Improved dynamic performance over
Z10***series

Best false trigger immunity for sensitive
4Q triacs



I_{GT} key:

B 50mA (70mA in 3+)

D 5mA (10mA in 3+)

E 10mA (25mA in 3+)

F 25mA (70mA in 3+)

- 35mA (70mA in 3+)

G 50mA (100mA in 3+)

G0 50mA (100mA in 3+), 10mA min

I _{T(RMS)} (A)	V _{DRM} (V)	I _{GT} (max) (mA)	T092	T0220	IIT0220 (internally insulated)	SOT82	T0220F (SOT186A)	T0223	T0263 (D2PAK)	T0252 (DPAK)	IIT03P (internally insulated)
											
0.6	400	5/5/5/7	MAC97A6								
0.6	600	5/5/5/7	MAC97A8								
1	600	3/3/3/7						BT131W			
1	600 / 800	3/3/3/7	BT131								
1	600 / 800	5/5/5/7	BT131-D								
1	600 / 800	10/10/10/10	BT131-E								
1	600 / 800	3/3/3/5	Z0103MA/NA					Z0103MN/NN			
1	600 / 800	5/5/5/7	Z0107MA/NA					Z0107MN/NN			
1	600 / 800	10/10/10/10	Z0109MA/NA					Z0109MN/NN			
1	600 / 800	3/3/3/5	Z0103MA0/NA0**					Z0103MN0/NN0**			
1	600 / 800	5/5/5/7	Z0107MA0/NA0**					Z0107MN0/NN0**			
1	600 / 800	10/10/10/10	Z0109MA0/NA0**					Z0109MN0/NN0**			
1	600	5/5/5/10	BT132-D*								
1	600	D/E/-						BT134W*			
1	800	-						BT134W*			
2	800	E						BT134W*			
4	600	D/E/-/G				BT134					
4	800	E/-				BT134					
4	600 / 800	D/E		BT234*			BT234X*				
4	600	D/-		BT136			BT136X			BT136S	
4	600	F					BT136X			BT136S	
4	600 / 800	E		BT136			BT136X		BT136B	BT136S	
4	800	D								BT136S	
4	800	F								BT136S	
4	800	-					BT136X			BT136S	
6	600	F/-/G					BT236X				
6	800	-/G					BT236X				
8	600	D/-/G		BT137			BT137X			BT137S	
8	600	E		BT137			BT137X		BT137B	BT137S	
8	600	F					BT137X		BT137B	BT137S	
8	600 / 800	G0/G0T		BT137							
8	800	E		BT137			BT137X			BT137S	
8	800	F							BT137B	BT137S	
8	800	-		BT137			BT137X		BT137B		
8	800	G							BT137B	BT137S	
12	600	D		BT138			BT138X				
12	600	-/G		BT138			BT138X		BT138B		
12	600	F					BT138X		BT138B		
12	600	G0/G0T		BT138							
12	600 / 800	E		BT138		BT138Y	BT138X		BT138B		
12	800	F					BT138X				
12	800	-		BT138			BT138X				
12	800	G		BT138							
16	600	E/-		BT139			BT139X		BT139B		
16	600	F/G					BT139X		BT139B		
16	600	G0/G0T		BT139							
16	600 / 800	B			BT A16						
16	800	E		BT139					BT139B		
16	800	F							BT139B		
16	800	-		BT139			BT139X		BT139B		
16	800	G		BT139					BT139B		
20	600	50/50/50/75					MAC223A8X				
25	400	50/50/50/75		MAC223A6							
25	600	G0/G0T		BTA140							
25	600 / 800	-		BTA140							
40	600 / 800	B									BTA41
45	800	B									BTA45

I _{T(RMS)} (A)	V _{DRM} (V)	I _{GT} (max) (mA)	T092	T0220	IIT0220 (internally insulated)	T0220F (SOT186A)	SOT223	T0262 (I2PAK)	T0263 (D2PAK)	T0252 (DPAK)	IIT03P (internally insulated)												
																							
0.8	600 / 800	D	BTA2008 BTA2008 BTA2008 BTA201	BTA204 BTA204	BTA308Y	BTA204X BTA204X BTA204X BTA206X BTA208X BTA208X BTA208X BTA208X BTA308X	BTA2008W	BTA201W BTA204W* BTA204W*		BTA204S BTA204S BTA204S	BTA208S BTA208S												
0.8	600 / 800	D/E					BTA202 BTA203 BTA203					BTA208X BTA308X BTA308X BTA208X BTA208X BTA208X BTA408X* BTA310X BTA410X*	BTA202W BTA202W	BTA208B	BTA308S								
0.8	1000	D														BTA204S BTA204S BTA204S							
0.8	1000	DN															BTA208S BTA208S						
1	600 / 800	B/E/ER	BTA208S BTA208S																				
1	600 / 800	E																BTA208S BTA208S					
1	600	B/C/D/E/F																	BTA208S BTA208S				
1	800	C/E																		BTA208S BTA208S			
2	600 / 800	D/E																			BTA208S BTA208S		
2	800	ET																				BTA208S BTA208S	
2	1000	CT/ET																					BTA208S BTA208S
3	800	CT																					
3	800	ET		BTA208S BTA208S																			
4	600	B/C/D/E/F			BTA208S BTA208S																		
4	800	B/C/E				BTA208S BTA208S																	
4	1000	C					BTA208S BTA208S																
6	800	CT/ET	BTA208S BTA208S																				
8	600	D						BTA208S BTA208S															
8	600 / 800	B/E/F							BTA208S BTA208S														
8	800	CT								BTA208S BTA208S													
8	800	B0/C0									BTA208S BTA208S												
8	800	C0T										BTA208S BTA208S											
8	800	ET											BTA208S BTA208S										
8	800	F0												BTA208S BTA208S									
8	1000	B		BTA208S BTA208S																			
8	1000	C			BTA208S BTA208S																		
8	1000	C0				BTA208S BTA208S																	
8	1000	C0T					BTA208S BTA208S																
10	600 / 800	C/D/E	BTA208S BTA208S																				
10	600 / 800	BT/CT/ET						BTA208S BTA208S															
12	600	CT							BTA312 BTA312 BTA312						BTA312Y BTA412Y* BTA412Y*	BTA312X BTA312X	BTA312G	BTA312B BTA312B BTA312B					
12	600	D								BTA312B BTA316B BTA316B BTA316B													
12	600 / 800	B/C/E									BTA316X												
12	600 / 800	C										BTA316B											
12	600 / 800	B/C											BTA316B										
12	600 / 800	ET												BTA316B									
12	800	CT		BTA316B																			
12	800	ET			BTA316B																		
16	600	BT				BTA316B																	
16	600	B0					BTA316B																
16	600	CT	BTA316B																				
16	600	D						BTA316B															
16	600 / 800	B/C/E							BTA316B														
16	600 / 800	ET								BTA316B													
16	600 / 800	B/C									BTA316B												
16	800	B0										BTA316B											
16	800	BT/CT											BTA316B										
16	800	CT												BTA316B									
16	800	BT/CT		BTA316B																			
20	800	BT/CT			BTA316B																		
25	600	BT				BTA316B																	
25	600 / 800	B					BTA316B																
25	800	BT	BTA316B																				
25	800	BT/CT						BTA316B															
25	800	B/BT							BTA316B														
30	800	BT								BTA316B													
30	800	BT/CT									BTA316B												
40	800	BT										BTA316B											
45	800	BT											BTA316B										



02
Power Diodes

SCHOTTKY RECTIFIER

BRIDGE RECTIFIER

3-PHASE BRIDGE RECTIFIER

CASCO DIODES

HYBRID DIODES (FRD+STD DIODES)

ULTRAFAST POWER DIODES

600V HYPERFAST POWER DIODES

1200V HYPERFAST POWER DIODES

STANDARD RECTIFIER

SCHOTTKY RECTIFIER
Power schottky diodes for SMPS
output rectification

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(max)@25C$ (V)	$V_F(max)@125C$ (V)	@ I_F per diode (A)	SOT78 (TO220AB)	SOT404 (D2PAK)	SOT186A (TO220F-3L)	T0262	SOT428 (DPAK)
									
150	2 x 5	1.00	0.75	5	WN3S10H150C		WN3S10H150CX		
150	2 x 10	1.10	0.75	10	WN3S20H150C		WN3S20H150CX		
100	2 x 10	0.95	0.80	10	WNS20S100C	WNS20S100CB	WNS20S100CX		
100	2 x 10	0.75	0.70	10	WNS20H100C	WNS20H100CB			
100	2 x 10	0.75	0.70	10	WN3S20H100C		WN3S20H100CX		
100	2 x 15	0.71	0.67	15	WNS30H100C	WNS30H100CB			
100	2 x 15	0.77	0.67	15	WN3S30100C		WN3S30100CX		
100	2 x 15	0.71	0.67	15	WN3S30H100C		WN3S30H100CX		
100	2 x 20	0.71	0.68	20	WNS40H100C	WNS40H100CB		WNS40H100CG	
100	2 x 20	0.71	0.68	20	WN3S40H100C		WN3S40H100CX		
100	2 x 20	0.78	0.71	20	WNS40100C				
100	2 x 20	0.78	0.71	20	WN3S40100C				
65	2 x 5	0.69	0.65	5					WN3S10H65CD
60	2x 15	0.70		15	WN3S3060C		WN3S3060CX		
60	2x 15	0.68		15	WN3S30H60C		WN3S30H60CX		
45	2 x 10	0.55	0.48	10	WN3S20H45C		WN3S20H45CX		
45	2 x 15	0.60	0.55	15	WN3S3045C		WN3S3045CX		
45	2 x 15	0.68	-	15	WN3S30H45C		WN3S30H45CX		

BRIDGE RECTIFIER

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(yp)@25C$ (V)	@ I_F (A)	$t_{rr}(yp)@25C$ (us)	GBU	GBJ
						
600	15	0.88	15	3	WNB1560U	
600	25	0.9	25	3	WNB2560U	WNB2560M

3-PHASE BRIDGE RECTIFIER

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(yp)@25C$ (V)	@ I_F (A)	$t_{rr}(yp)@25C$ (us)	WMM01
					
1600	75	1.25	75		WDMF75M16

CASCO DIODES
employing series die technology for the lowest possible t_{rr}

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

Casco Diodes for Continuous Current Mode PFC

V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(\text{typ})@150C$ (V)	@ I_F (A)	$t_{rr}(\text{typ})@25C$ (ns)	SOD113 (2-pinSOT186A)
					
600	8	2	8	12.5	BYC58X-600

HYBRID DIODES (FRD+ STD DIODES)

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

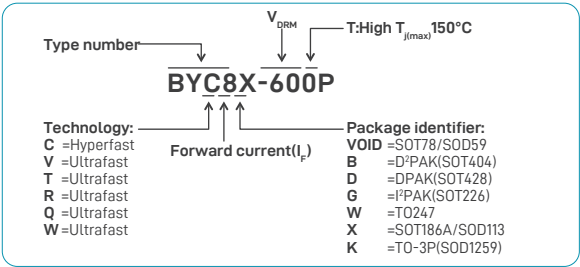
FRD V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(\text{typ})@150C$ (V)	@ I_F (A)	$t_{rr}(\text{typ})@25C$ (ns)	STD V_{RRM} (V)	$I_{F(AV)}$ (A)	$V_F(\text{typ})@150C$ (V)	@ I_F (A)	T0247-3L
									
600	30	1.38	30	35	1600	45	1.1	45	WNC3060D45160W



ULTRAFAST POWER DIODES

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

Power Diode part numbering



In the spotlight

Ultrafast power diodes

Fast switching

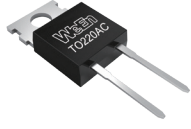
High voltage capability

Low forward voltage drop

Low leakage current(platinum doped series)

Low thermal resistance

Soft recovery characteristic



V _{RRM} (V)	I _{FAV} (A)	V _F (typ)@150C (V)	@I _F (A)	t _{rr} (typ)@25C (ns)	SOD59 (TO220-2L)	SOD113 (TO220F-2L)	SOT78 (TO220AB)	SOT186A (TO220F-3L)	SOT223	SOT226 (I2PAK)	SOT404 (D2PAK)	SOT428 (DPAK)	SMA	SMB	SMC	SOT1259 (TO-3P)	TO-3PF	TO247-2L (True 2 pin)	SOD142 (TO247-2L)	SOT429 (TO247-3L)
100	8	0.8	8	20	BYW29E-100															
100	2 x 10	0.72	8	20																
150	2 x 0.75	0.5	0.5	10																
150	8	0.8	8	20	BYW29E-150				BYV40E-150											
150	2 x 10	0.72	8	20																
150	2 x 15	0.78	15	20																
200	3	0.7	3	27																
200	8	0.8	8	20	BYW29E-200	BYW29EX-200							BYW29ED-200		MUR320					
200	2 x 5	0.8	5	15																
200	2 x 5	0.8	5	15									BYQ28ED-200PL							
200	14	0.83	14	20	BYV79E-200															
200	2 x 8	0.84	8	20																
200	2 x 10	0.72	8	20																
200	2 x 15	0.78	15	20																
300	2 x 5	0.95	5	50																
300	2 x 10	0.81	10	9																
300	2 x 30	0.85	30	33																
400	4	0.8	4	55																
400	9	0.9	8	50	BYV29-400										MUR440					
400	2 x 10	0.87	10	50																
400	2 x 15	0.95	15	35																
500	9	0.9	8	50	BYV29-500	BYV29X-500							BYV29B-500							
500	2 x 5	0.95	5	50																
500	14	0.9	15	50	BYT79-500															
500	2 x 10	0.87	10	50																
500	2 x 15	0.95	15	50																
600	1	0.88	1	45																
600	3	0.88	3	36																
600	5	0.90	5	45																
600	5	1.00	5	45																
600	5	1.10	5	17.5	BYV25F-600	BYV25FX-600														
600	5	0.97	5	50		BYV25X-600														
600	8	1.07	8	60	BYR29-600	BYR29X-600														
600	8	0.80	8	65																
600	9	0.97	8	50	BYV29-600P	BYV29X-600P														
600	9	1.25	8	17.5	BYV29F-600	BYV29FX-600														
600	10	1.60	10	20	BYV10-600P	BYV10X-600P														
600	10	0.92	10	40																
600	10	1.15	10	35		BYV10EX-600P														
600	10	1.50	10	30		BYV10MX-600P														
600	15	1.00	15	50	BYT79-600	BYT79X-600P														
600	15	0.96	15	50																
600	2 x 10	0.92	10	50																
600	2 x 10	1.00	10	30			BYV34-600	BYV34X-600												
600	2 x 10	1.30	10	20			BYV410-600P	BYV410X-600P												
600	2 x 15	1.30	15	20				BYV410X-600												
600	30	0.96	30	85																
600	30	0.98	30	42	BYV30-600P	BYV30X-600P														
600	40	0.97	40	52																
600	2 x 30	1.25	30	53																
600	60	1.20	60	53																
600	60	1.10	60	79																
800	8	1.07	8	60	BYR29-800															
800	8	1.20	8	40		BYR29X-800P														
1200	5	1.60	5	50									BYR5D-1200P							

600V HYPERFAST POWER DIODES

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

Hyperfast diodes for Continuous Current Mode PFC

V _{RRM} (V)	I _{F(AV)} (A)	V _F (typ)@150C (V)	@I _F (A)	t _{rr} (typ)@25C (ns)	SOD59 (TO220AC)	SOD113 (TO220F-2L)	TO247-2L (True 2 pin)	SOD142 (TO247-2L)	SOT429 (TO247-3L)	SOT78 (TO220AB)	IIT0220-2L	SOT186A (TO220F-3L)	SOT404 (D2PAK)	TO3PF
														
400	2 x 5	0.85	5	30								BYC405X-400P		
500	5	1.15	5	16	BYC5D-500	BYC5DX-500								
600	5	1.4	5	19									BYC5B-600	
600	5	1.55	5	13	BYC5-600P	BYC5X-600P								
600	8	1.4	8	20	BYC8D-600	BYC8DX-600								
600	8	1.4	8	19	BYC8-600P	BYC8X-600P								
600	10	1.4	10	19										
600	10	1.3	10	19	BYC10-600P	BYC10X-600P							BYC8B-600P	
600	10	1.4	10	18	BYC10D-600	BYC10DX-600							BYC10B-600	
600	2 x 5	1.4	5	19						BYC10-600CT				
600	15	1.4	15	22	BYC15-600P	BYC15X-600P								
600	20	1.4	20	19	BYC20-600									
600	20	1.2	20	26	BYC20D-600P	BYC20DX-600P								
600	20	1.2	20	25		BYC20X-600P								
600	30	1.38	30	35							BYC30Y-600P			
600	30	1.4	30	35										
600	30	1.5	30	26				BYC30DW-600P						
600	30	1.38	30	29	BYC30-600P	BYC30X-600P		BYC30DW-600P	BYC30WT-600P					
600	30	1.38	30	26			BYC30W-600PT2	BYC30W-600P			BYC30Y-600P		BYC30B-600P	
600	30	1.5	30	51		BYC30X-600PS								
600	30	1.4	30	60			BYC30W-600PT2-A							
600	60	1.55	60	40				BYC60W-600P						
600	75	1.6	75	42			BYC75W-600PT2	BYC75W-600P						

1200V HYPERFAST POWER DIODES

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

In the spotlight

1200V Planar Hyperfast Power Diodes

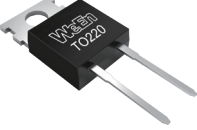
Planar Passivated, Pt doping technology

Fast recovery, System efficiency improvement

Soft recovery, Reduce system EMI

Avalanche ruggedness

Reduces switching losses in associated MOSFET or IGBT



V _{RRM} (V)	I _{F(AV)} (A)	V _F (typ)@150C (V)	@I _F (A)	t _{rr} (typ)@25C (ns)	SOD59 (TO220AC)	SOD142 (TO247-2L true 2pin)
						
1200V	5	2	5	42	BYC5-1200P	
1200V	8	2	8	46	BYC8-1200P	
1200V	15	2	15	61	BYC15-1200P	
1200V	30	2.1	30	70	BYC30-1200P	BYC30W-1200P
1200V	40	2.2	40	91		BYC40W-1200P
1200V	60	2.2	60	96		BYC60W-1200P
1200V	75	2.2	75	113		BYC75W-1200P
1200V	100	2.2	100	115		BYC100W-1200P

STANDARD RECTIFIER

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

V _{RRM} (V)	I _{F(AV)} (A)	V _F (typ)@150C (V)	@I _F (A)	IFSM @10ms (A)	SOD59 (TO220-2L)	SOD113AA (TO220F-2L)	SOD142 (TO247-2L)	SOT428 (DPAK)	SOT404 (D2PAK)	SOT78D (IIT0220)
										
600V	10	0.82	10	350		WND10M600X				
800V	8	0.84	8	150				SK8D		
800V	10	1	10	180		WND10P08X				
800V	10	1	10	180						WND10P08Y
800V	35	1.15	35	400	WND35P08	WND35P08X				
1200V	35	1.15	35	400						
1600V	8	1	8	150		WND08P16X				
1600V	45	1	45	475				WND08P16D		
1600V	60	1.08	60	650			WND45P16W WND60P16W			



03

Silicon Carbide

1200V 1700V SiC MOSFETs

1200V SiC DIODES G2

650V SiC DIODES G6

650V SiC DIODES G2

650V SiC DIODES G2

AUTOMOTIVE GRADE SiC DIODES

SiC BARE DIE

1200V 1700V SiC MOSFETs

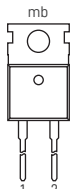
Types in **bold blue** represent new products
Types in **bold red italic** represent products in development

VBRDS (V)	Rdson(typ)@ 25C (mOhm)	Tj(max) °C	Qualification	T0247-3L	T0247-4L	D2PAK-7L
						
1200	20	175	Industrial	WNSC2M20120W	WNSC2M20120R	<i>WNSC2M20120B7</i>
1200	30	175	Industrial	WNSC2M30120W	WNSC2M30120R	<i>WNSC2M30120B7</i>
1200	40	175	Industrial	WNSC2M40120W	WNSC2M40120R	<i>WNSC2M40120B7</i>
1200	60	175	Industrial	WNSC2M60120W	WNSC2M60120R	<i>WNSC2M60120B7</i>
1200	80	175	Industrial	WNSCM80120W	WNSCM80120R	<i>WNSCM80120B7</i>
1200	160	175	Industrial	WNSCM160120W		<i>WNSCM160120B7</i>
1700	1000	175	Industrial	WNSC2M1K0170W		<i>WNSC2M1K0170B7</i>

In the spotlight

650V SiC Schottky Diode

- Highly stable switching performance
- High forward surge capability IFSM
- Extremely fast reverse recovery time
- Superior in efficiency to Silicon Diode alternatives
- Reduced losses in associated MOSFET
- Reduced EMI
- Reduced cooling requirements
- RoHS compliant

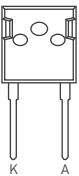


TO-220AC(SOD59A)

In the spotlight

1200V SiC Schottky Diode

- Highly stable switching performance
- High forward surge capability IFSM
- Extremely fast reverse recovery time
- Superior in efficiency to Silicon Diode alternatives
- Reduced losses in associated MOSFET
- Reduced cooling requirements
- Reduced EMI
- RoHS compliant
- High junction operating temperature capability (Tj(max) = 175 °C)



TO247-2L

1200V SiC DIODES G2

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

VRRM (V)	IF(AV) (A)	VF (typ)@ 25C (V)	@IF (A)	T0220-2L	T0247-2L	T0247-3L	DPAK	D2PAK-2L
								
1200	2	1.45	2	WNSC2D021200			WNSC2D021200D	
1200	5	1.45	5	WNSC2D051200			WNSC2D051200D	
1200	2 x 5	1.45	10			WNSC2D101200CW		
1200	10	1.45	10	WNSC2D101200	WNSC2D101200W		WNSC2D101200D	WNSC2D101200BT2
1200	15	1.45	15		WNSC2D151200W			WNSC2D151200BT2
1200	20	1.45	20	WNSC2D201200	WNSC2D201200W			WNSC2D201200BT2
1200	30	1.45	30		WNSC2D301200W			
1200	40	1.45	40		WNSC2D401200W			
1200	50	1.45	50		WNSC2D501200W			
1200	2 x 10	1.45	20			WNSC2D201200CW		
1200	2 x 15	1.45	30			WNSC2D301200CW		
1200	2 x 20	1.45	40			WNSC2D401200CW		

650V SiC DIODES G6

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

VRRM (V)	IF(AV) (A)	VF (typ)@ 25C (V)	@IF (A)	T0220-2L	T0220F-2L	T0247-2L	T0247-3L	DPAK	D2PAK-2L	DFN 8x8	SMB
											
650	1	1.15	1								WNSC6D01650MB
650	4	1.29	4	WNSC6D04650				WNSC6D04650D			
650	6	1.29	6	WNSC6D06650	WNSC6D06650X			WNSC6D06650D		WNSC6D06650T	
650	8	1.29	8	WNSC6D08650	WNSC6D08650X			WNSC6D08650D		WNSC6D08650T	
650	10	1.29	10	WNSC6D10650	WNSC6D10650X			WNSC6D10650D		WNSC6D10650T	
650	16	1.29	16	WNSC6D16650			WNSC6D16650CW		WNSC6D16650B		
650	20	1.29	20	WNSC6D20650		WNSC6D20650W			WNSC6D20650B		
650	30	1.29	30			WNSC6D30650W					
650	2x10	1.29	20				WNSC6D20650CW				
650	2x15	1.29	30				WNSC6D30650CW				
650	2x20	1.29	40				WNSC6D40650CW				

650V SiC DIODES G2

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	V_F (typ)@25C (V)	@ I_F (A)	TO220-2L	IIT0220	TO220F-2L	TO247-2L	TO247-3L	TO-3PF	DPAK	D2PAK	DFN 8x8
												
650	4	1.45	4	WNSC5D04650	WNSC5D04650Y	WNSC5D04650X				WNSC5D04650D		WNSC5D04650T
650	6	1.45	6	WNSC5D06650	WNSC5D06650Y	WNSC5D06650X				WNSC5D06650D		WNSC5D06650T
650	8	1.45	8	WNSC5D08650	WNSC5D08650Y	WNSC5D08650X				WNSC5D08650D		WNSC5D08650T
650	10	1.45	10	WNSC5D10650	WNSC5D10650Y	WNSC5D10650X	WNSC5D10650W			WNSC5D10650D	WNSC5D10650B	WNSC5D10650T
650	12	1.45	12		WNSC5D12650Y							WNSC5D12650T
650	20	1.45	20			WNSC5D20650X						
650	30	1.45	30				WNSC5D30650W					
650	2 x 8	1.45	16					WNSC5D16650CW	WNSC5D16650CJ			
650	2 x 10	1.45	20					WNSC5D20650CW	WNSC5D20650CJ			
650	2 x 15	1.45	30					WNSC5D30650CW				

650V SiC DIODES G2

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	V_F (typ)@ 25C (V)	@ I_F (A)	TO220-2L	TO220F-2L	TO247-2L	TO247-3L	TO-3PF	DPAK	D2PAK	DFN 8x8	SMB
												
650	3	1.5	3						WNSC2D04650D		WNSC2D04650T	WNSC2D03650MB
650	4	1.5	4	WNSC2D04650	WNSC2D04650X				WNSC2D04650D		WNSC2D04650T	
650	6	1.5	6	WNSC2D06650	WNSC2D06650X				WNSC2D06650D		WNSC2D06650T	
650	8	1.5	8	WNSC2D08650					WNSC2D08650D		WNSC2D08650T	
650	10	1.5	10	WNSC2D10650	WNSC2D10650X	WNSC2D10650W			WNSC2D10650D	WNSC2D10650B	WNSC2D10650T	
650	12	1.5	12								WNSC2D12650T	
650	30	1.5	30			WNSC2D30650W						
650	2 x 8	1.5	16				WNSC2D16650CW	WNSC2D16650CJ				
650	2 x 10	1.5	20				WNSC2D20650CW	WNSC2D20650CJ				
650	2 x 15	1.45	30				WNSC2D30650CW					

AUTOMOTIVE GRADE SiC DIODES

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	V_f (typ)@ 25C (V)	TO220-2L	TO247-2L	TO247-3L	D2PAK-2L
						
650	20	1.29	WNSC6D20650-A	WNSC6D20650W-A	WNSC6D20650CW-A	WNSC6D20650BT2-A
1200	10	1.29	WNSC2D101200-A	WNSC2D101200W-A		WNSC2D101200BT2-A
1200	20	1.29	WNSC2D201200-A	WNSC2D201200W-A	WNSC2D201200CW-A	WNSC2D201200BT2-A

SiC BARE DIE

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

V_{RRM} (V)	$I_{F(AV)}$ (A)	V_F (typ) @ 25C (V)	V_F (typ) @ 25C (V)	Part Number	Description
1200	10	1.42	10	WB10SC120AL	G2 SiC diode / 1200V/10A, Al top metal, unsawn wafer
1200	15	1.45	15	WB15SC120AL	G2 SiC diode / 1200V/15A, Al top metal, unsawn wafer
1200	20	1.5	20	WB20SC120AL	G2 SiC diode / 1200V/20A, Al top metal, unsawn wafer
1200	25	1.42	25	WB25SC120AL	G2 SiC diode / 1200V/25A, Al top metal, unsawn wafer



04

Transient Voltage Suppressors

200W TVS DIODES, SOD SERIES

400W TVS DIODES, P4SOD SERIES

400W TVS DIODES, SMAJ SERIES

600W TVS DIODES, P6SMAL SERIES

600W TVS DIODES, SMBJ SERIES

1500W TVS DIODES, SMCJ SERIES

3000W TVS DIODES, SMDJ SERIES

200W TVS DIODES, SOD SERIES



	SPEC	Requirement
Package	SOD123	HF + UL94V0+RoHS +Pb free plating
Power	200W	10/1000 pulse
TJ	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
SOD5.0A	SOD5.0CA	SOD123	10	6.45	6.98	5	200	21.7	9.2
SOD6.0A	SOD6.0CA	SOD123	10	6.8	7.32	6	200	19.4	10.3
SOD6.5A	SOD6.5CA	SOD123	10	7.27	7.92	6.5	150	17.9	11.2
SOD7.0A	SOD7.0CA	SOD123	10	7.82	8.57	7	75	16.7	12
SOD8.0A	SOD8.0CA	SOD123	1	8.95	9.76	8	25	14.7	13.6
SOD9.0A	SOD9.0CA	SOD123	1	10.08	11.03	9	5	13	15.4
SOD10A	SOD10CA	SOD123	1	11.21	12.19	10	2.5	11.8	17
SOD11A	SOD11CA	SOD123	1	12.32	13.38	11	2.5	11.1	18.2
SOD12A	SOD12CA	SOD123	1	13.43	14.57	12	2.5	10.1	19.9
SOD13A	SOD13CA	SOD123	1	14.51	15.79	13	1	9.3	21.5
SOD14A	SOD14CA	SOD123	1	15.72	17.08	14	1	8.6	23.2
SOD15A	SOD15CA	SOD123	1	16.83	18.37	15	1	8.2	24.4
SOD16A	SOD16CA	SOD123	1	17.93	19.56	16	1	7.7	26
SOD17A	SOD17CA	SOD123	1	19.08	20.72	17	1	7.2	27.6
SOD18A	SOD18CA	SOD123	1	20.19	21.9	18	1	6.8	29.2
SOD20A	SOD20CA	SOD123	1	22.41	24.28	20	1	6.2	32.4
SOD22A	SOD22CA	SOD123	1	24.63	26.66	22	1	5.6	35.5
SOD24A	SOD24CA	SOD123	1	26.95	29.23	24	1	5.1	38.9
SOD26A	SOD26CA	SOD123	1	29.12	31.67	26	1	4.8	42.1
SOD28A	SOD28CA	SOD123	1	31.33	34.16	28	1	4.4	45.4
SOD30A	SOD30CA	SOD123	1	33.55	36.54	30	1	4.1	48.4
SOD33A	SOD33CA	SOD123	1	36.98	40.3	33	1	3.8	53.3
SOD36A	SOD36CA	SOD123	1	40.3	43.9	36	1	3.4	58.1
SOD40A	SOD40CA	SOD123	1	44.7	48.8	40	1	3.1	64.5
SOD43A	SOD43CA	SOD123	1	48.2	52.4	43	1	2.9	69.4
SOD45A	SOD45CA	SOD123	1	50.4	54.9	45	1	2.8	72.7
SOD48A	SOD48CA	SOD123	1	53.7	58.5	48	1	2.6	77.4
SOD51A	SOD51CA	SOD123	1	57.1	62.3	51	1	2.4	82.4
SOD54A	SOD54CA	SOD123	1	60.5	65.8	54	1	2.3	87.1
SOD58A	SOD58CA	SOD123	1	64.9	70.6	58	1	2.1	93.6
SOD60A	SOD60CA	SOD123	1	67.2	73.1	60	1	2.1	96.8
SOD64A	SOD64CA	SOD123	1	71.7	77.9	64	1	1.9	103
SOD70A	SOD70CA	SOD123	1	78.4	85.3	70	1	1.7	113
SOD75A	SOD75CA	SOD123	1	84	91.4	75	1	1.6	121
SOD78A	SOD78CA	SOD123	1	87.4	95	78	1	1.6	126
SOD85A	SOD85CA	SOD123	1	95.2	103.2	85	1	1.5	137

400W TVS DIODES, P4SOD SERIES

Package
SOD123



	SPEC	Requirement
Package	SOD123	HF + UL94V0+RoHS +Pb free plating
Power	400W	10/1000 pulse
Tj	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
P4SOD5.0A	P4SOD5.0CA	SOD123	10	6.4	7	5	200	43.5	9.2
P4SOD6.0A	P4SOD6.0CA	SOD123	10	6.67	7.37	6	200	38.8	10.3
P4SOD6.5A	P4SOD6.5CA	SOD123	10	7.22	7.98	6.5	125	35.7	11.2
P4SOD7.0A	P4SOD7.0CA	SOD123	10	7.78	8.6	7	75	33.3	12
P4SOD8.0A	P4SOD8.0CA	SOD123	1	8.89	9.83	8	25	29.4	13.6
P4SOD9.0A	P4SOD9.0CA	SOD123	1	10	11.1	9	5	26	15.4
P4SOD10A	P4SOD10CA	SOD123	1	11.1	12.3	10	2.5	23.5	17
P4SOD11A	P4SOD11CA	SOD123	1	12.2	13.5	11	1	22	18.2
P4SOD12A	P4SOD12CA	SOD123	1	13.3	14.7	12	1	20.1	19.9
P4SOD13A	P4SOD13CA	SOD123	1	14.4	15.9	13	1	18.6	21.5
P4SOD14A	P4SOD14CA	SOD123	1	15.6	17.2	14	1	17.2	23.2
P4SOD15A	P4SOD15CA	SOD123	1	16.7	18.5	15	1	16.4	24.4
P4SOD16A	P4SOD16CA	SOD123	1	17.8	19.7	16	1	15.4	26
P4SOD17A	P4SOD17CA	SOD123	1	18.9	20.9	17	1	14.5	27.6
P4SOD18A	P4SOD18CA	SOD123	1	20	22.1	18	1	13.7	29.2
P4SOD20A	P4SOD20CA	SOD123	1	22.2	24.5	20	1	12.3	32.4
P4SOD22A	P4SOD22CA	SOD123	1	24.4	26.9	22	1	11.3	35.5
P4SOD24A	P4SOD24CA	SOD123	1	26.7	29.5	24	1	10.3	38.9
P4SOD26A	P4SOD26CA	SOD123	1	28.9	31.9	26	1	9.5	42.1
P4SOD28A	P4SOD28CA	SOD123	1	31.1	34.4	28	1	8.8	45.4
P4SOD30A	P4SOD30CA	SOD123	1	33.3	36.8	30	1	8.3	48.4
P4SOD33A	P4SOD33CA	SOD123	1	36.7	40.6	33	1	7.5	53.3
P4SOD36A	P4SOD36CA	SOD123	1	40	44.2	36	1	6.9	58.1
P4SOD40A	P4SOD40CA	SOD123	1	44.4	49.1	40	1	6.2	64.5
P4SOD43A	P4SOD43CA	SOD123	1	47.8	52.8	43	1	5.8	69.4
P4SOD45A	P4SOD45CA	SOD123	1	50	55.3	45	1	5.5	72.7
P4SOD48A	P4SOD48CA	SOD123	1	53.3	58.9	48	1	5.2	77.4
P4SOD51A	P4SOD51CA	SOD123	1	56.7	62.7	51	1	4.9	82.4
P4SOD54A	P4SOD54CA	SOD123	1	60	66.3	54	1	4.6	87.1
P4SOD58A	P4SOD58CA	SOD123	1	64.4	71.2	58	1	4.3	93.6
P4SOD60A	P4SOD60CA	SOD123	1	66.7	73.7	60	1	4.1	96.8
P4SOD64A	P4SOD64CA	SOD123	1	71.1	78.6	64	1	3.9	103
P4SOD70A	P4SOD70CA	SOD123	1	77.8	86	70	1	3.5	113
P4SOD75A	P4SOD75CA	SOD123	1	83.3	92.1	75	1	3.3	121
P4SOD78A	P4SOD78CA	SOD123	1	86.7	95.8	78	1	3.2	126
P4SOD85A	P4SOD85CA	SOD123	1	94.4	104	85	1	2.9	137

400W TVS DIODES, SMAJ SERIES



	SPEC	Requirement
Package	SMA (J lead)	HF + UL94V0+RoHS +Pb free plating
Power	400W	10/1000 pulse
Tj	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
SMAJ5.0A	SMAJ5.0CA	SMA	10	6.45	6.98	5	400	43.5	9.2
SMAJ6.0A	SMAJ6.0CA	SMA	10	6.8	7.32	6	400	38.8	10.3
SMAJ6.5A	SMAJ6.5CA	SMA	10	7.27	7.92	6.5	250	35.7	11.2
SMAJ7.0A	SMAJ7.0CA	SMA	10	7.82	8.57	7	100	33.3	12
SMAJ8.0A	SMAJ8.0CA	SMA	1	8.95	9.76	8	50	29.4	13.6
SMAJ9.0A	SMAJ9.0CA	SMA	1	10.1	11	9	10	26	15.4
SMAJ10A	SMAJ10CA	SMA	1	11.21	12.19	10	5	23.5	17
SMAJ11A	SMAJ11CA	SMA	1	12.32	13.38	11	1	22	18.2
SMAJ12A	SMAJ12CA	SMA	1	13.43	14.57	12	1	20.1	19.9
SMAJ13A	SMAJ13CA	SMA	1	14.54	15.76	13	1	18.6	21.5
SMAJ14A	SMAJ14CA	SMA	1	15.75	17.04	14	1	17.2	23.2
SMAJ15A	SMAJ15CA	SMA	1	16.86	18.34	15	1	16.4	24.4
SMAJ16A	SMAJ16CA	SMA	1	17.97	19.52	16	1	15.4	26
SMAJ17A	SMAJ17CA	SMA	1	19.08	20.72	17	1	14.5	27.6
SMAJ18A	SMAJ18CA	SMA	1	20.19	21.9	18	1	13.7	29.2
SMAJ20A	SMAJ20CA	SMA	1	22.41	24.28	20	1	12.3	32.4
SMAJ22A	SMAJ22CA	SMA	1	24.63	26.66	22	1	11.3	35.5
SMAJ24A	SMAJ24CA	SMA	1	26.95	29.23	24	1	10.3	38.9
SMAJ26A	SMAJ26CA	SMA	1	29.12	31.67	26	1	9.5	42.1
SMAJ28A	SMAJ28CA	SMA	1	31.33	34.16	28	1	8.8	45.4
SMAJ30A	SMAJ30CA	SMA	1	33.55	36.54	30	1	8.3	48.4
SMAJ33A	SMAJ33CA	SMA	1	36.98	40.3	33	1	7.5	53.3
SMAJ36A	SMAJ36CA	SMA	1	40.3	43.9	36	1	6.9	58.1
SMAJ40A	SMAJ40CA	SMA	1	44.7	48.8	40	1	6.2	64.5
SMAJ43A	SMAJ43CA	SMA	1	48.2	52.4	43	1	5.8	69.4
SMAJ45A	SMAJ45CA	SMA	1	50.4	54.9	45	1	5.5	72.7
SMAJ48A	SMAJ48CA	SMA	1	53.7	58.5	48	1	5.2	77.4
SMAJ51A	SMAJ51CA	SMA	1	57.1	62.3	51	1	4.9	82.4
SMAJ54A	SMAJ54CA	SMA	1	60.5	65.8	54	1	4.6	87.1
SMAJ58A	SMAJ58CA	SMA	1	64.9	70.7	58	1	4.3	93.6
SMAJ60A	SMAJ60CA	SMA	1	67.2	73.2	60	1	4.1	96.8
SMAJ64A	SMAJ64CA	SMA	1	71.6	78	64	1	3.9	103
SMAJ70A	SMAJ70CA	SMA	1	78.4	85.4	70	1	3.5	113
SMAJ75A	SMAJ75CA	SMA	1	83.9	91.5	75	1	3.3	121
SMAJ78A	SMAJ78CA	SMA	1	87.4	95.1	78	1	3.2	126
SMAJ85A	SMAJ85CA	SMA	1	95.1	103.3	85	1	2.9	137

600W TVS DIODES, P6SMAL SERIES



	SPEC	Requirement
Package	SMA (L-lead)	HF + UL94V0+RoHS +Pb free plating
Power	600W	10/1000 pulse
Tj	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Package	I _r (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
P6SMAL5.0A	SMAL	10	6.4	77	5	400	65.3	9.2
P6SMAL6.0A	SMAL	10	6.67	7.37	6	400	58.3	10.3
P6SMAL6.5A	SMAL	10	7.22	7.98	6.5	250	53.6	11.2
P6SMAL7.0A	SMAL	10	7.78	8.6	7	100	50	12
P6SMAL8.0A	SMAL	1	8.89	9.83	8	50	44.2	13.6
P6SMAL9.0A	SMAL	1	10	11.1	9	10	39	15.4
P6SMAL10A	SMAL	1	11.1	12.3	10	5	35.3	17
P6SMAL11A	SMAL	1	12.2	13.5	11	1	33	18.2
P6SMAL12A	SMAL	1	13.3	14.7	12	1	30.2	19.9
P6SMAL13A	SMAL	1	14.4	15.9	13	1	28	21.5
P6SMAL14A	SMAL	1	15.6	17.2	14	1	25.9	23.2
P6SMAL15A	SMAL	1	16.7	18.5	15	1	24.6	24.4
P6SMAL16A	SMAL	1	17.8	19.7	16	1	23.1	26
P6SMAL17A	SMAL	1	18.9	20.9	17	1	21.8	27.6
P6SMAL18A	SMAL	1	20	22.1	18	1	20.6	29.2
P6SMAL20A	SMAL	1	22.2	24.5	20	1	18.6	32.4
P6SMAL22A	SMAL	1	24.4	26.9	22	1	16.9	35.5
P6SMAL24A	SMAL	1	26.7	29.5	24	1	15.5	38.9
P6SMAL26A	SMAL	1	28.9	31.9	26	1	14.3	42.1
P6SMAL28A	SMAL	1	31.1	34.4	28	1	13.3	45.4
P6SMAL30A	SMAL	1	33.3	36.8	30	1	12.4	48.4
P6SMAL33A	SMAL	1	36.7	40.6	33	1	11.3	53.3
P6SMAL36A	SMAL	1	40	44.2	36	1	10.4	58.1
P6SMAL40A	SMAL	1	44.4	49.1	40	1	9.3	64.5
P6SMAL43A	SMAL	1	47.8	52.8	43	1	8.7	69.4
P6SMAL45A	SMAL	1	50	55.3	45	1	8.3	72.7
P6SMAL48A	SMAL	1	53.3	58.9	48	1	7.8	77.4
P6SMAL51A	SMAL	1	56.7	62.7	51	1	7.3	82.4
P6SMAL54A	SMAL	1	60	66.3	54	1	6.9	87.1
P6SMAL58A	SMAL	1	64.4	71.2	58	1	6.5	93.6
P6SMAL60A	SMAL	1	66.7	73.7	60	1	6.2	96.8
P6SMAL64A	SMAL	1	71.1	78.6	64	1	5.9	103
P6SMAL70A	SMAL	1	77.8	86	70	1	5.3	113
P6SMAL75A	SMAL	1	83.3	92.1	75	1	5	121
P6SMAL78A	SMAL	1	86.7	95.8	78	1	4.8	126
P6SMAL85A	SMAL	1	94.4	104	85	1	4.4	137

600W TVS DIODES, SMBJ SERIES

Package
SMB



	SPEC	Requirement
Package	SMB (J-lead)	HF + UL94V0+RoHS +Pb free plating
Power	600W	10/1000 pulse
Tj	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
SMBJ5.0A	SMBJ5.0CA	SMB	10	6.45	6.98	5	400	65.3	9.2
SMBJ6.0A	SMBJ6.0CA	SMB	10	6.8	7.32	6	400	58.3	10.3
SMBJ6.5A	SMBJ6.5CA	SMB	10	7.27	7.92	6.5	250	53.6	11.2
SMBJ7.0A	SMBJ7.0CA	SMB	10	7.82	8.57	7	100	50	12
SMBJ8.0A	SMBJ8.0CA	SMB	1	8.95	9.76	8	50	44.2	13.6
SMBJ9.0A	SMBJ9.0CA	SMB	1	10.1	11	9	10	39	15.4
SMBJ10A	SMBJ10CA	SMB	1	11.21	12.19	10	5	35.3	17
SMBJ11A	SMBJ11CA	SMB	1	12.32	13.38	11	1	33	18.2
SMBJ12A	SMBJ12CA	SMB	1	13.43	14.57	12	1	30.2	19.9
SMBJ13A	SMBJ13CA	SMB	1	14.54	15.76	13	1	28	21.5
SMBJ14A	SMBJ14CA	SMB	1	15.75	17.04	14	1	25.9	23.2
SMBJ15A	SMBJ15CA	SMB	1	16.86	18.34	15	1	24.6	24.4
SMBJ16A	SMBJ16CA	SMB	1	17.97	19.52	16	1	23.1	26
SMBJ17A	SMBJ17CA	SMB	1	19.08	20.72	17	1	21.8	27.6
SMBJ18A	SMBJ18CA	SMB	1	20.19	21.9	18	1	20.6	29.2
SMBJ20A	SMBJ20CA	SMB	1	22.41	24.28	20	1	18.6	32.4
SMBJ22A	SMBJ22CA	SMB	1	24.63	26.66	22	1	16.9	35.5
SMBJ24A	SMBJ24CA	SMB	1	26.95	29.23	24	1	15.5	38.9
SMBJ26A	SMBJ26CA	SMB	1	29.12	31.67	26	1	14.3	42.1
SMBJ28A	SMBJ28CA	SMB	1	31.33	34.16	28	1	13.3	45.4
SMBJ30A	SMBJ30CA	SMB	1	33.55	36.54	30	1	12.4	48.4
SMBJ33A	SMBJ33CA	SMB	1	36.98	40.3	33	1	11.3	53.3
SMBJ36A	SMBJ36CA	SMB	1	40.3	43.9	36	1	10.4	58.1
SMBJ40A	SMBJ40CA	SMB	1	44.7	48.8	40	1	9.3	64.5
SMBJ43A	SMBJ43CA	SMB	1	48.2	52.4	43	1	8.7	69.4
SMBJ45A	SMBJ45CA	SMB	1	50.4	54.9	45	1	8.3	72.7
SMBJ48A	SMBJ48CA	SMB	1	53.7	58.5	48	1	7.8	77.4
SMBJ51A	SMBJ51CA	SMB	1	57.1	62.3	51	1	7.3	82.4
SMBJ54A	SMBJ54CA	SMB	1	60.5	65.8	54	1	6.9	87.1
SMBJ58A	SMBJ58CA	SMB	1	64.9	70.7	58	1	6.5	93.6
SMBJ60A	SMBJ60CA	SMB	1	67.2	73.2	60	1	6.2	96.8
SMBJ64A	SMBJ64CA	SMB	1	71.6	78	64	1	5.9	103
SMBJ70A	SMBJ70CA	SMB	1	78.4	85.4	70	1	5.3	113
SMBJ75A	SMBJ75CA	SMB	1	83.9	91.5	75	1	5	121
SMBJ78A	SMBJ78CA	SMB	1	87.4	95.1	78	1	4.8	126
SMBJ85A	SMBJ85CA	SMB	1	95.1	103.3	85	1	4.4	137

1500W TVS DIODES, SMCJ SERIES

Package
SMC



	SPEC	Requirement
Package	SMC	HF + UL94V0+RoHS +Pb free plating
Power	1500W	10/1000 pulse
Tj	-65C~150C	
Tstg	175C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
SMCJ5.0A	SMCJ5.0CA	SMC	10	6.45	6.98	5	400	163	9.2
SMCJ6.0A	SMCJ6.0CA	SMC	10	6.8	7.32	6	400	145.7	10.3
SMCJ6.5A	SMCJ6.5CA	SMC	10	7.27	7.92	6.5	250	134	11.2
SMCJ7.0A	SMCJ7.0CA	SMC	10	7.82	8.57	7	200	125	12
SMCJ8.0A	SMCJ8.0CA	SMC	1	8.95	9.76	8	100	110.3	13.6
SMCJ9.0A	SMCJ9.0CA	SMC	1	10.1	11	9	10	97.4	15.4
SMCJ10A	SMCJ10CA	SMC	1	11.21	12.19	10	5	88.3	17
SMCJ11A	SMCJ11CA	SMC	1	12.32	13.38	11	1	82.5	18.2
SMCJ12A	SMCJ12CA	SMC	1	13.43	14.57	12	1	75.4	19.9
SMCJ13A	SMCJ13CA	SMC	1	14.54	15.76	13	1	69.8	21.5
SMCJ14A	SMCJ14CA	SMC	1	15.75	17.04	14	1	64.7	23.2
SMCJ15A	SMCJ15CA	SMC	1	16.86	18.33	15	1	61.5	24.4
SMCJ16A	SMCJ16CA	SMC	1	17.93	19.56	16	1	57.7	26
SMCJ17A	SMCJ17CA	SMC	1	19.05	20.76	17	1	54.4	27.6
SMCJ18A	SMCJ18CA	SMC	1	20.19	21.9	18	1	51.4	29.2
SMCJ20A	SMCJ20CA	SMC	1	22.41	24.28	20	1	46.3	32.4
SMCJ22A	SMCJ22CA	SMC	1	24.63	26.66	22	1	42.3	35.5
SMCJ24A	SMCJ24CA	SMC	1	26.95	29.23	24	1	38.6	38.9
SMCJ26A	SMCJ26CA	SMC	1	29.12	31.67	26	1	35.7	42.1
SMCJ28A	SMCJ28CA	SMC	1	31.33	34.16	28	1	33.1	45.4
SMCJ30A	SMCJ30CA	SMC	1	33.55	36.54	30	1	31	48.4
SMCJ33A	SMCJ33CA	SMC	1	36.98	40.3	33	1	28.2	53.3
SMCJ36A	SMCJ36CA	SMC	1	40.3	43.9	36	1	25.9	58.1
SMCJ40A	SMCJ40CA	SMC	1	44.7	48.8	40	1	23.3	64.5
SMCJ43A	SMCJ43CA	SMC	1	48.2	52.4	43	1	21.7	69.4
SMCJ45A	SMCJ45CA	SMC	1	50.4	54.9	45	1	20.6	72.7
SMCJ48A	SMCJ48CA	SMC	1	53.8	58.4	48	1	19.4	77.4
SMCJ51A	SMCJ51CA	SMC	1	57.2	62.1	51	1	18.2	82.4
SMCJ54A	SMCJ54CA	SMC	1	60.5	65.7	54	1	17.3	87.1
SMCJ58A	SMCJ58CA	SMC	1	65	70.6	58	1	16.1	93.6
SMCJ60A	SMCJ60CA	SMC	1	67.3	73	60	1	15.5	96.8
SMCJ64A	SMCJ64CA	SMC	1	71.6	78	64	1	14.6	103
SMCJ70A	SMCJ70CA	SMC	1	78.5	85.2	70	1	13.3	113
SMCJ75A	SMCJ75CA	SMC	1	83.9	91.5	75	1	12.4	121
SMCJ78A	SMCJ78CA	SMC	1	87.4	95.1	78	1	11.9	126
SMCJ85A	SMCJ85CA	SMC	1	95.1	103.2	85	1	11	137

3000W TVS DIODES, SMDJ SERIES

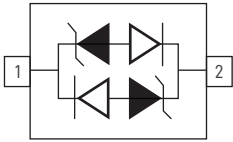
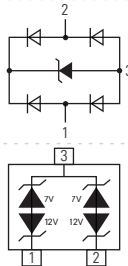
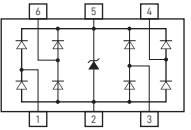
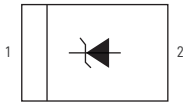
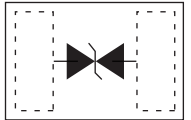
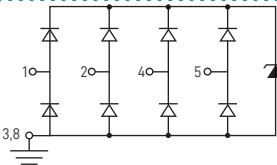
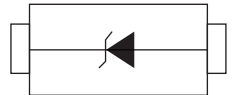


	SPEC	Requirement
Package	SMC(J lead)	HF + UL94V0+RoHS +Pb free plating
Power	3000W	10/1000 pulse
Tj	-65C~150C	
Tstg	150C	
ESD	30KV(Air) 30KV(contact)	IEC-61000-4-2

Uni-direction	Bi-direction	Package	I _T (mA)	V _{BR} (V) --min.	V _{BR} (V) --max.	V _R (V)	I _R (uA) --max.	10/1000us Max peak pulse currnt I _{pp} (A)	10/1000us max clamp voltage V _C @ I _{pp} (V)
SMDJ9.0A	SMDJ9.0CA	SMC	1	10.1	11	9	10	194.8	15.4
SMDJ10A	SMDJ10CA	SMC	1	11.21	12.19	10	3.5	176.5	17
SMDJ11A	SMDJ11CA	SMC	1	12.32	13.33	11	2	164.8	18.2
SMDJ12A	SMDJ12CA	SMC	1	13.48	14.57	12	2	150.8	19.9
SMDJ13A	SMDJ13CA	SMC	1	14.54	15.76	13	2	139.5	21.5
SMDJ14A	SMDJ14CA	SMC	1	15.75	17.04	14	2	129.3	23.2
SMDJ15A	SMDJ15CA	SMC	1	16.86	18.33	15	2	123	24.4
SMDJ16A	SMDJ16CA	SMC	1	17.94	19.56	16	2	115.4	26
SMDJ17A	SMDJ17CA	SMC	1	19.04	20.75	17	2	108.7	27.6
SMDJ18A	SMDJ18CA	SMC	1	20.19	21.9	18	2	102.7	29.2
SMDJ20A	SMDJ20CA	SMC	1	22.41	24.28	20	2	92.6	32.4
SMDJ22A	SMDJ22CA	SMC	1	24.59	26.71	22	2	84.5	35.5
SMDJ24A	SMDJ24CA	SMC	1	26.9	29.18	24	2	77.1	38.9
SMDJ26A	SMDJ26CA	SMC	1	29.12	31.68	26	2	71.3	42.1
SMDJ28A	SMDJ28CA	SMC	1	31.34	34.16	28	2	66.1	45.4
SMDJ30A	SMDJ30CA	SMC	1	33.6	36.59	30	2	62	48.4
SMDJ33A	SMDJ33CA	SMC	1	36.98	40.3	33	2	56.3	53.3
SMDJ36A	SMDJ36CA	SMC	1	40.3	43.9	36	2	51.6	58.1
SMDJ40A	SMDJ40CA	SMC	1	44.8	48.8	40	2	46.5	64.5
SMDJ43A	SMDJ43CA	SMC	1	48.2	52.4	43	2	43.2	69.4
SMDJ45A	SMDJ45CA	SMC	1	50.4	54.9	45	2	41.3	72.7
SMDJ48A	SMDJ48CA	SMC	1	53.7	58.5	48	2	38.8	77.4
SMDJ51A	SMDJ51CA	SMC	1	57.1	62.3	51	2	36.4	82.4
SMDJ54A	SMDJ54CA	SMC	1	60.5	65.8	54	2	34.4	87.1
SMDJ58A	SMDJ58CA	SMC	1	64.9	70.7	58	2	32.1	93.6
SMDJ60A	SMDJ60CA	SMC	1	67.2	73.2	60	2	31	96.8
SMDJ64A	SMDJ64CA	SMC	1	71.6	78	64	2	29.1	103
SMDJ70A	SMDJ70CA	SMC	1	78.4	85.4	70	2	26.5	113
SMDJ75A	SMDJ75CA	SMC	1	83.9	91.5	75	2	24.8	121
SMDJ78A	SMDJ78CA	SMC	1	87.4	95.1	78	2	23.8	126
SMDJ85A	SMDJ85CA	SMC	1	95.2	103.3	85	2	21.9	137



05
Electro-Static
Discharge Diodes

Part No.	Package outline	V _{RWM} (V)	V _{BR} (Min)	I _{PP} @8/20μs (A)	V _{CL} @I _{PP} (V)	I _{Rmax} @V _{RWM} (uA)	C _{Jmax} @0V/1 _{MHz} (pF)	P _{ppm} @8/20μs (W)	Diagram
SOD323 Package :									
ESDALD03BC		3.3	4.5	20	20	1	0.8	400	
ESDALD05BC		5	6.5	15	21	1	0.8	315	
ESDALD08BC		8	8.5	15	25	1	0.8	375	
ESDALD12BC		12	13.3	10	35	1	0.8	350	
ESDALD15BC		15	16.5	8	45	1	0.8	360	
ESDALD18BC		18	19.0	8	44	1	0.8	352	
ESDALD24BC		24	26.0	6	55	1	0.8	330	
ESDALD36BC		36	38.0	3	70	1	0.8	210	
SOT23-3 Package :									
ESDALD05UE2		5	6.0	4	15	0.1	0.8	60	
ESDAHD712BE2		12/7	13.3/7.5	19	30	20	75	570	
SOT23-6 Package :									
ESDALD05UD4		5	6.0	5.5	16	0.1	1	88	
DFN1006 Package :									
ESDHD03UF		3.3	4.0	24	12	1	200	288	
ESDHD05UF		5	6.0	20	16	0.1	150 typ.	320	
ESDHD12UF		12	13.3	8	26	1	80	208	
ESDHD03BF		3.3	4.0	8	10	1	15	80	
ESDHD05BF		5	5.5	7	11	1	15	77	
ESDHD12BF		12	13.0	6	25	1	15	150	
ESDHD15BF		15	16.5	7	35	1	15	245	
ESDHD24BF		24	26.0	5	48	1	15	240	
ESDUD05BF		5	6.0	4	22	0.1	0.5	88	
DFN2510 Package :									
ESDALD05UG4		5	6.0	4	15	0.1	1	60	
SOD523 Package :									
ESDHD03UB		3.3	4.0	25	12	1	180	300	
ESDHD05UB		5	5.9	16	15	1	160	240	
ESDHD12UB		12	13.3	7	30	1	80	210	
ESDHD03BB		3.3	3.7	10	9	1	15	90	
ESDHD05BB		5	5.6	9	10	1	15	90	



06
Insulated Gate
Bipolar Transistors

650V IGBT

1200V IGBT

650V IGBT

Fast Speed and High Speed

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

$I_c(max)@100^{\circ}C$ (A)	$V_{CE(max)}$ (V)	$V_{CE(sat)}(typ.)@25^{\circ}C$ (V)	$E_{off}(typ.)@25^{\circ}C$ (mJ)	$E_{on}(typ.)@25^{\circ}C$ (mJ)	$Q_r(typ.)@25^{\circ}C$ (mC)	T0247-3L	T03PF	T0220-3L
								
50	650	1.65	0.6	1.7	570	WG50N65DHW	WG50N65DHJ	
40	650	1.55	0.48			WG40T65MDW1		
30	650	1.45	0.35			WG30T65MDW1		
20	650	1.4	0.28					WG20T65MDX1

1200V IGBT

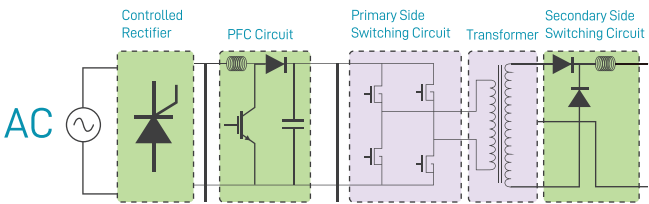
Fast Speed and High Speed

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

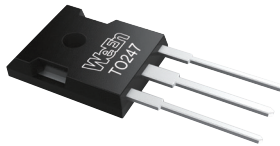
$I_c(max)@100^{\circ}C$ (A)	$V_{CE(max)}$ (V)	$V_{CE(sat)}(typ.)@25^{\circ}C$ (V)	$E_{off}(typ.)@25^{\circ}C$ (mJ)	$E_{on}(typ.)@25^{\circ}C$ (mJ)	$Q_r(typ.)@25^{\circ}C$ (mC)	T0247-3L
						
40	1200	2	1.3			WG40T120HDW1
25	1200	1.9	0.9			WG25T120HDW1
15	1200	1.8	0.45			WG15T120HDW1

WeEn High Voltage 1600V SCRs
1600V/50A & 1600V/80A, Planar Passivated

Applications



- Uninterruptible Power Supply (UPS)
- Solid State Relay (SSR)
- Battery Charger
- AC Motor control / DC motor control
- Lighting and temperature control



Key Features and Benefits

- Very High Voltage Block capability up to 1600V
- High junction operating temperature $T_{j(max)}=150^{\circ}C$
- Very high current surge capability
- Planar passivated for voltage ruggedness and reliability
- High thermal cycling performance
- Low forward voltage drop
- Enables the control of peak current at power supply switch-on, limits the use of mechanical relay to extend system life time

Product

Product	Package
TYN50W-1600T	TO-247
TYN80W-1600T	TO-247

Key Parameters

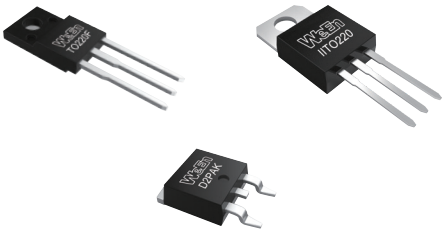
Parameters	TYN50W-1600T	TYN80W-1600T
Package	TO-247	TO-247
$I_{T(AV)}$	50A	80A
$I_{T(RMS)}$	79A	126A
V_{DRM}	1600V	1600V
I_{GT}	80mA max	80mA max
I_{TSM}	650A @ 10ms	850A @ 10ms
$T_{j(max)}$	150°C	150°C
di_t/dt	150A/us	150A/us
dV_o/dt	1500V/μs @150°C	1000V/μs @150°C

WeEn 30A Hi-Com™ Triacs

Applications



- Heating controls
- High power motor control
- High power AC power tools
- Applications subject to high temperature ($T_{j(max)}=150^{\circ}C$)



Key Features and Benefits

- Planar passivated 3Q Hi-Com™ technology
- High commutation capability with maximum false trigger immunity
- High junction operating temperature capability ($T_{j(max)} = 150^{\circ}C$)
- High Surge current capability & Low On-state voltage drop (Low VT)
- High thermal cycling performance
- Internal insulated package(IIT0220) provide best voltage isolation (2500V) & thermal dissipation balancing
- Surface mountable plastic package (D²PAK) gives the benefit of easy assembly
- Package is RoHS compliant

Product

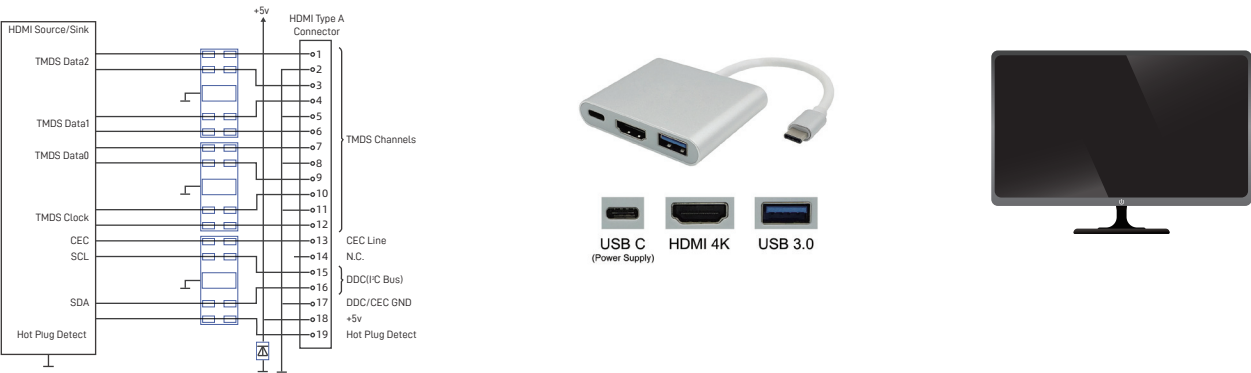
Product	Package
BTA330-800BT	TO220
BTA330X-800BT	TO220FP
BTA330Y-800BT	IIT0220
BTA330Y-800CT	IIT0220
BTA330B-800BT	D²PAK
BTA330B-800CT	D²PAK

Key Parameters

Parameters	BTA330 BT series	BTA330 CT series
$I_{T(RMS)}$	30A	30A
V_{DRM}	800V	800V
I_{GT}	50mA max	35mA max
I_{TSM}	270A @ 20ms	270A @ 20ms
$T_{j(max)}$	150°C	150°C
di_t/dt	100A/μs	100A/μs

ESD diodes solution for high speed interface

Applications



Product	Package
ESDALD05UG4	DFN2510
ESDUD05BF	DFN1006
ESDALD03BC	SOD323
ESDALD05BC	SOD323

- HDMI
- USB2.0/3.0
- Display Port
- Digital Visual Interfaces(DVI)

Key Features and Benefits

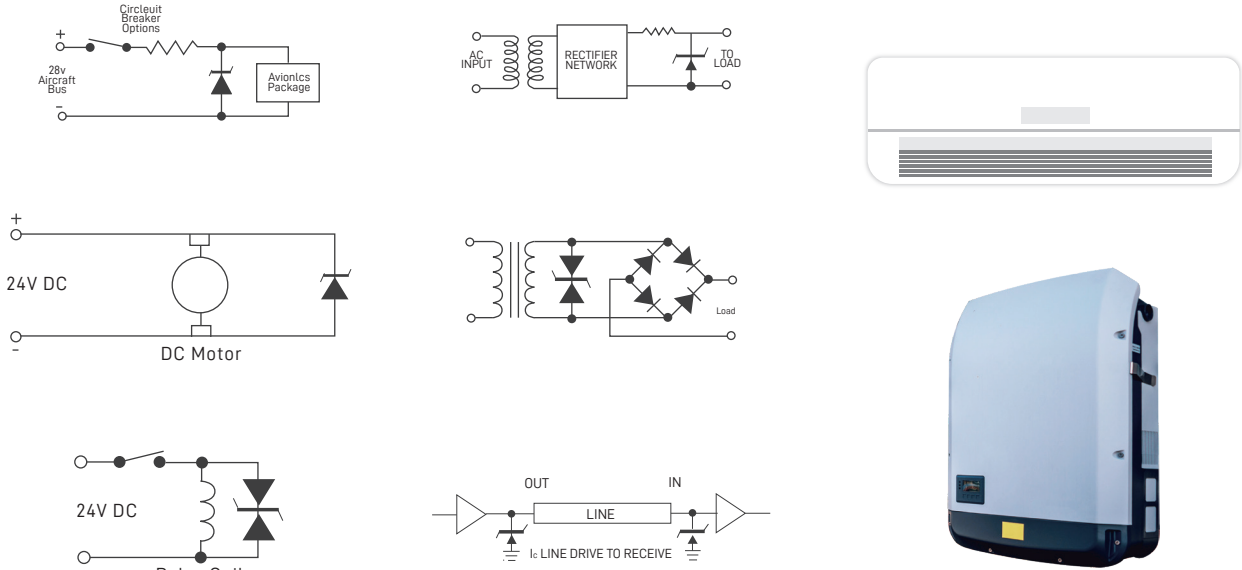
- Transient protection for high-speed data lines
- Peak pulse power up to 350W @ 8/20 μs waveform
- IEC 61000-4-2 (ESD) up to ±30kV(air), ±30kV(contact)
- Low capacitance
- Low leakage current
- Low clamping voltage
- Halogen free and RoHS compliant

Parameters	Value
Package	DFN2510 / DFN1006 / SOD323
V_{RWM}	3.3V / 5V
I_R	100nA / 1uA
C_j (typ)	0.2pF / 0.6pF / 0.8pF
P_{PPM}	60W / 88W / 350W
I_{PD}	4A / 15A / 20A
V_c (typ)	15V / 20V / 21V / 22V



TVS diodes solution

Applications



Parameters	Package
Package	SOD123 / SMA / SMB / SMC
V_{RWM}	5V ~85V
I_R	1uA
P_{PPM}	200W/400W/600W/1500W/3000W

- Solar Application
- DC Motor
- Home appliance
- Industrial application

Key Features and Benefits

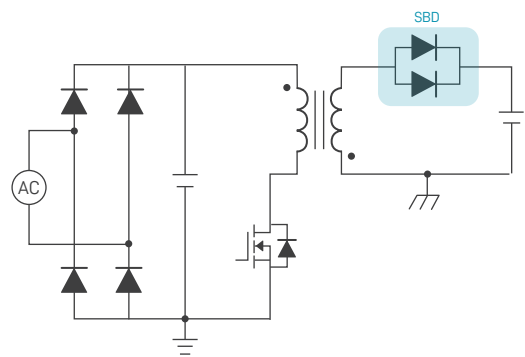
- Fast response time: Typically less than 1.0ps from 0V to BV min
- Peak pulse power up to 350W @ 8/20 μs waveform
- IEC 61000-4-2 (ESD) up to ±30kV(air), ±30kV(contact)
- Low capacitance
- Low leakage current
- Low clamping voltage
- Halogen free and RoHS compliant

Family	Package	Power
SOD _{xx} (C)A	SOD123	200W
P4SOD _{xx} (C)A	SOD123	400W
SMA _{xx} (C)A	SMA	400W
P6SMA _{xx} (C)A	SMA	600W
SMB _{xx} (C)A	SMB	600W
SMC _{xx} (C)A	SMC	1500W
SMD _{xx} (C)A	SMC	3000W

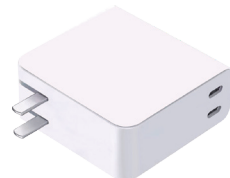
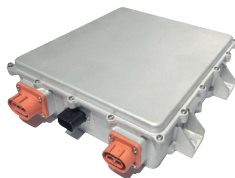


Application of SBD
for Power Supply

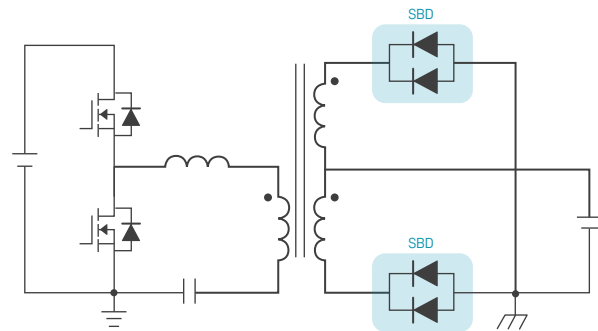
Flyback Power Supply



- Computer power for CPU
- Charger for consumer electronics
- Aux power for UPS
- Aux power for EV charger



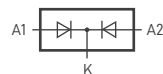
LLC Power Supply



- Computer power for CPU
- Charger for consumer electronics
- Aux power for UPS
- Aux power for EV charger

Solution Overview

- Voltage:100V/150V/65V/45V
- Current:10A / 20A / 30A / 40A
- Packages:T0220 / T0220F / DPAK
Configuration: Dual die, common cathode
- Halogen free



WeEn Part

T0220		T220F	
T0220	150V	100V	150V
WN3S20H100C	WN3S10H150C	WN3S20H100CX	WN3S10H150CX
WN3S30H100C	WN3S20H150C	WN3S30H100CX	WN3S20H150CX
WN3S40H100C		WN3S40H100CX	
WN3S30100C		WN3S30100CX	
WN3S40100C			

WeEn Part

T0220		T220F	
45V	60V	45V	60V
WN3S20H45C	WN3S3060C	WN3S20H45CX	WN3S3060CX
WN3S3045C		WN3S3045CX	

WeEn Part

DPAK	
65V	100V
WN3S10H65CD	WN3S20S100CD

What is G3 Schottky Diode

By proper design and process optimization, G3 Schottky diodes can be used in DC-DC converters and other SMPS.

- With state of art trench technology, lower VF is achieved
- Negligible switch loss is achieved
- Reduced reverse leakage current and improve its long-term reliability

Key Features and Benefits

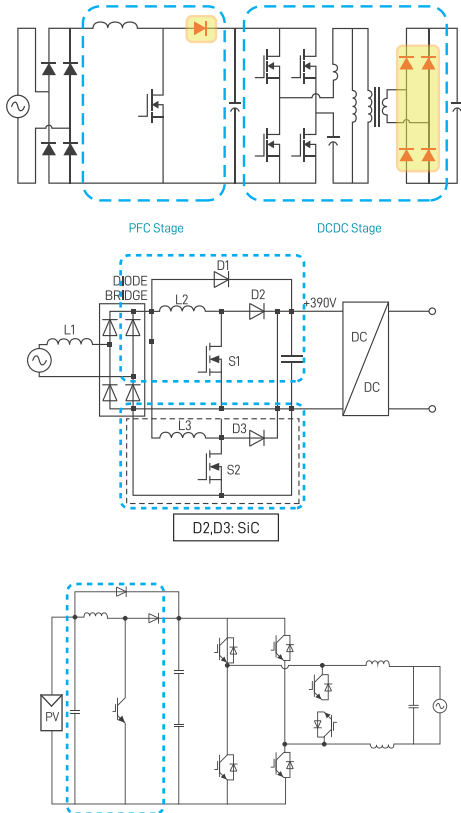
- Ultra-low On-state Voltage VF
- Low leakage current
- Rugged Avalanche Capability
- Higher IFSM capability
- $T_{j(max)}$ 150°C

1200V G2 and 650V G6 advanced SiC DIODE

WeEn introduced the first SiC diodes in 2015. The latest 6th gen SiC diodes technology represents our continued investments in innovation and R&D, offering best-in-class improvements in forward voltage drop (V_F) and inrush current capability (I_{FSM}). WeEn offers a full range of SiC diodes, 650V diodes from 1A to 40A and 1200V diodes from 2A to 50A in a wide variety of packages.

Topology

Single PFC, Output Bridge Rectifier, Interleave PFC Boost Buck, Buck-Boost etc.



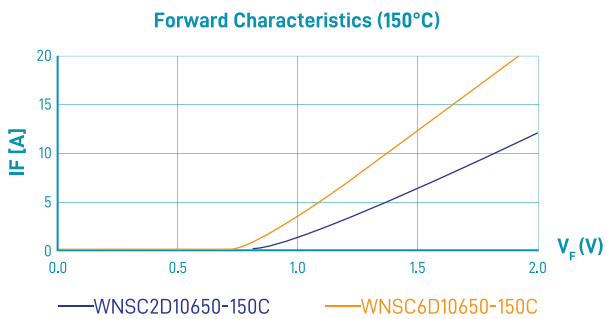
Applications

On Board Charger	Power
EV DCDC	Server Power
Charging Piles	Data Center
Moto Driver	LED Lighting
PV and ESS	Air Conditioning
Telecom	UPS

Key Features and Benefits

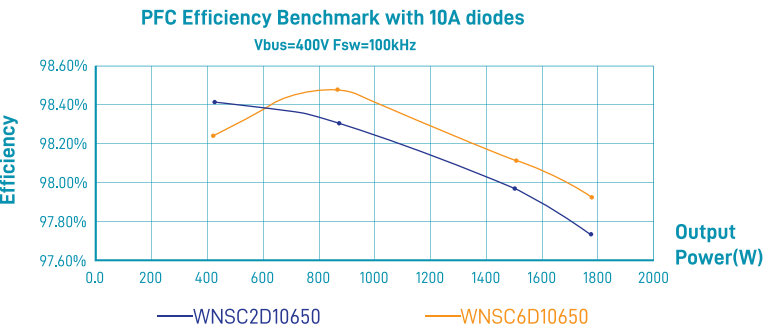
- State-of-art 6th generation for 650V SiC Diodes
- State-of-art 5th generation for 1200V SiC Diodes
- Ultra-Low V_f
- Low reverse leakage current
- Low thermal resistance
- High surge capability

The Advantage of G6 SiC Diodes – Low V_F



○ Compare with previous generation, the 6th generation SiC diodes give ~25% lower On-state-Voltage drop V_F under high temp. 150°C

The Advantage of G6 SiC Diodes – High Efficiency

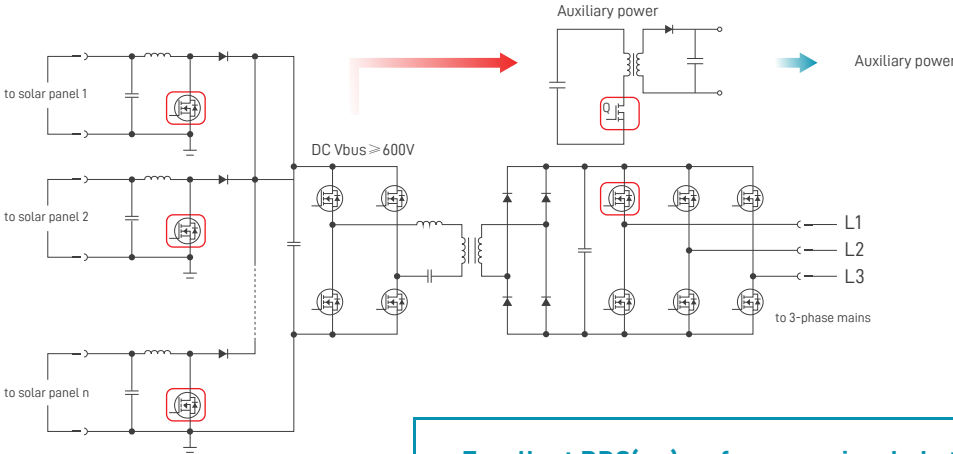


○ Compare with previous generation, the 6th generation gives about 0.2% efficiency improvement under the same application condition by just replace the SiC diode

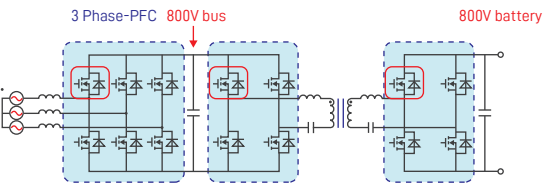
1200V and 1700V SiC MOSFET

Topology

Photovoltaic Inverter



11kW bi-directional 3 phase on board charger



Applications

xEV (Main inverter+OBC+DC-DC)	PFC/Power Supply
PV+ESS	Rail(including auxiliary power)
xEV Charging Infrastructure	UPS
Motor Drive (including air conditioning)	Wind

KeyFeatures:

- Excellent $R_{DS(on)}$ performance at high temperature
- Enables high efficiency application
- Safe threshold and transfer characteristics optimization balance
- Low $R_{on,sp}$ specific resistance, advanced technology
- Easy to drive by chip design
- Package with Kelvin source available

Excellent $R_{DS(on)}$ performance in whole temperature range e.g. WNSCM80120W

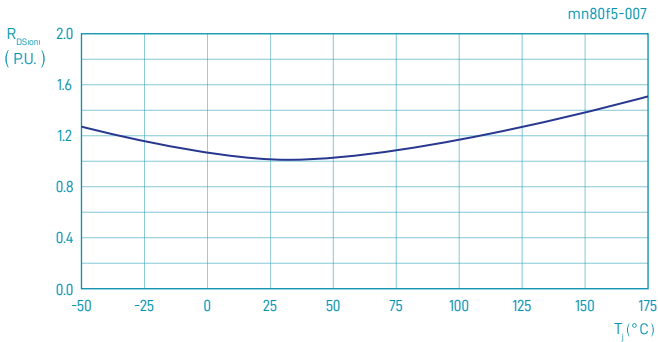
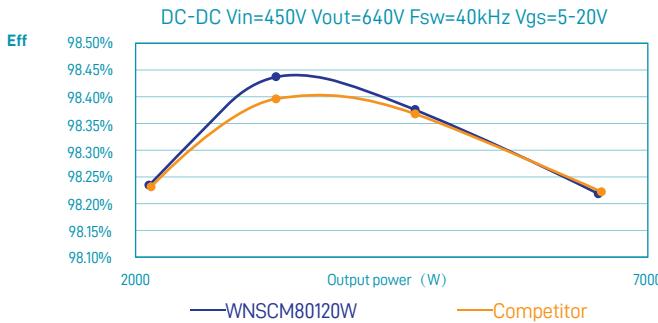
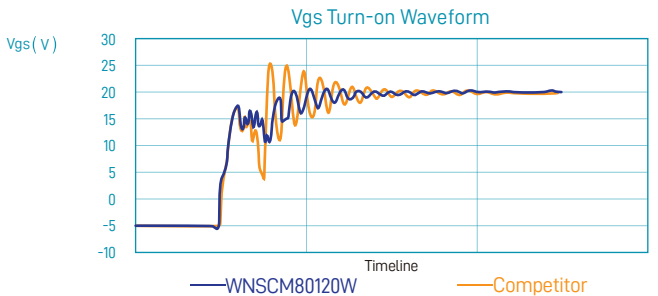


Fig.7. Normalized drain-source on-state resistance as a function of junction temperature

High product Efficiency



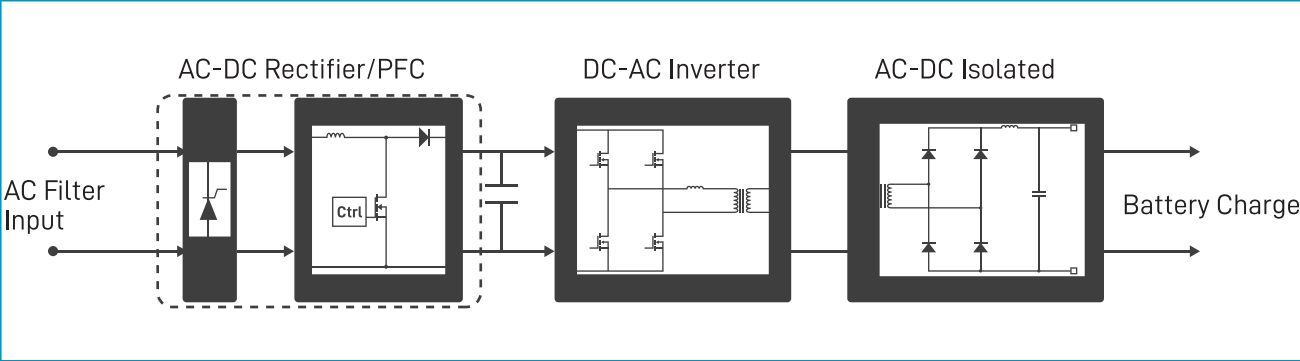
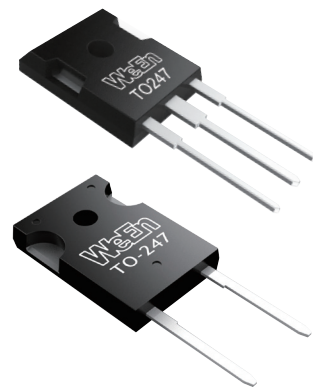
Easy to drive by chip design



WeEn Products for EV On Board Charger

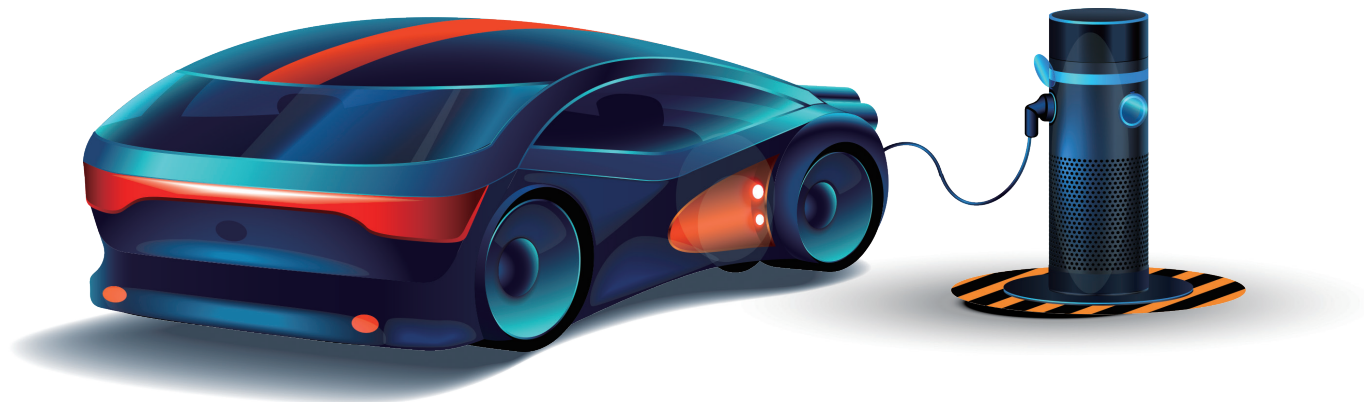
Automotive Grade, AEC-Q101 qualified

- Fast Switching Silicon Diodes $T_{j(max)} 175^{\circ}C$
- High Efficiency Silicon Carbide Diodes $T_{j(max)} 175^{\circ}C$
- High Current SCRs $T_{j(max)} 150^{\circ}C$



- BT153B-1200T-A
- BT155W-1200T-A
- NXPSC20650W-A
- BYC30W-600PT2-A
- WNSC6D20650-A**
- WNSC2D101200BT2-A**
- WNSC2D201200BT2-A**
- WNSCM80120W/R**

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



WeEn Products in Smart Home

Coffee Machine



- Planar passivated technology, high $T_{j(max)} 150^{\circ}C$ capability for better heating control
- BTA316Y-800CT used for heating element control
- TOPT16-800C0 used for heating element control with over temp. protection function embedded

Air-con



- Platinum-doping Fast Recovery Diodes
- BYC30JT-600PS
- BYC30X-600PS soft FRD for PFC
- BYV30JT-600P、BYC30X-600P、BYV415W-600P
- BYV415J-600P for traditional PFC

Washing Machine



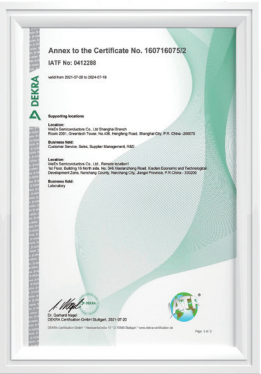
- Planar Passivated technology with the best false trigger capability
- BTA201W-800E used for Valve control
- BTA416Y-800C used for drum motor control

Dishwasher



- Planar passivated ACT/ACTT series with over-voltage clamp function
- ACT108W-800E used for water inlet valve control
- ACTT4S-800E used for water extraction pump control

Certifications



CNAS

IATF 16949



ISO 9001

ISO 45001



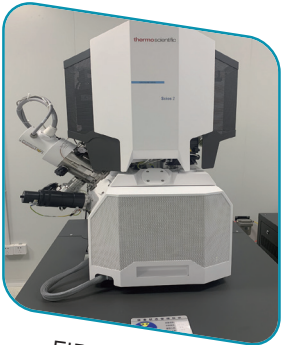
ISO14001

QC 080000

WeEn Reliability & Failure Analysis Laboratory

Items of Reliability Test and Failure Analysis

Reliability Test	Failure Analysis
ESD test (HBM/MM) test	NTD
High temperature storage test	Automatic Test
Low temperature storage test	I-V Curve Tracer
Temperature cycle (Air to Air) test	Failure Site Localization
High temperature reverse bias test	Ultrasonic Scanning Microscope Analysis
High temperature gate bias test	Optical Microscope
High temp Operating life test	Scanning Electron Microscope
Reverse bias tropical test	Focused Ion Beam
Thermal fatigue test	Energy Dispersive Spectrometer
Unbiased highly accelerated stress test	Fault Isolation
Autoclave (Pressure cooker) test	Surface Texture
Highly accelerated stress test	X-ray (2D&3D)
Hot test	Chemical De-capsulation
Solder Heat test	Laser De-capsulation
Solderability test	3D Optical Microscope
High temperature forward bias test	Probe test
Highly accelerated stress test	Cross-section/Polisher



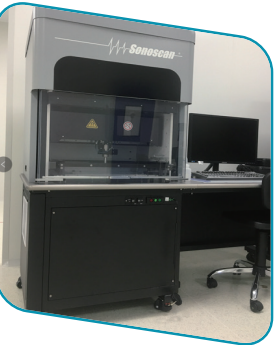
FIB&SEM&EDX



X-RAY



Tesec



C-SAM



Temperature Cycle



UHAFT & PPOT



Reverse bias tropical



ESD(HBM&MM)