



PRODUCT TERMINATION NOTIFICATION

PTN MPA-DIS/06/2012
Notification Date 10/20/2006

MPA - ASD & IPAD Division
200V, 1000V & 1200V Ultrafast Diodes:
Moving from (SM)BY/STPR/STTA series
to new high performance latest STTH generation

DIS - ASD & IPAD

Table 1. Termination Identification

Product Identification Commercial Product(s) to be terminated	(SM)BYxxx-200, STPRxx20, BYTxx-1000 and STTAxx12xx
Reason for termination	Product portfolio rationalization & technology improvement
Alternate product(s) replacement	See attached

Table 2. Termination Implementation Schedule

Forecasted date of STMicroelectronics 'alternative products replacement' for customer	26-Sep-2006
Last Order entry date (6 months from the notice for final shipment)	30-Apr-2007
Last Order delivery date (12 months from the notice for final shipment)	31-Oct-2007

Table 3. Change Responsibility

	Name	Signature	Date
Division Product Manager	J.P. GIRY		Oct.16 ,06
Marketing Manager	J.B. MOREAU		Oct.16 ,06

Table 4. List of Attachments

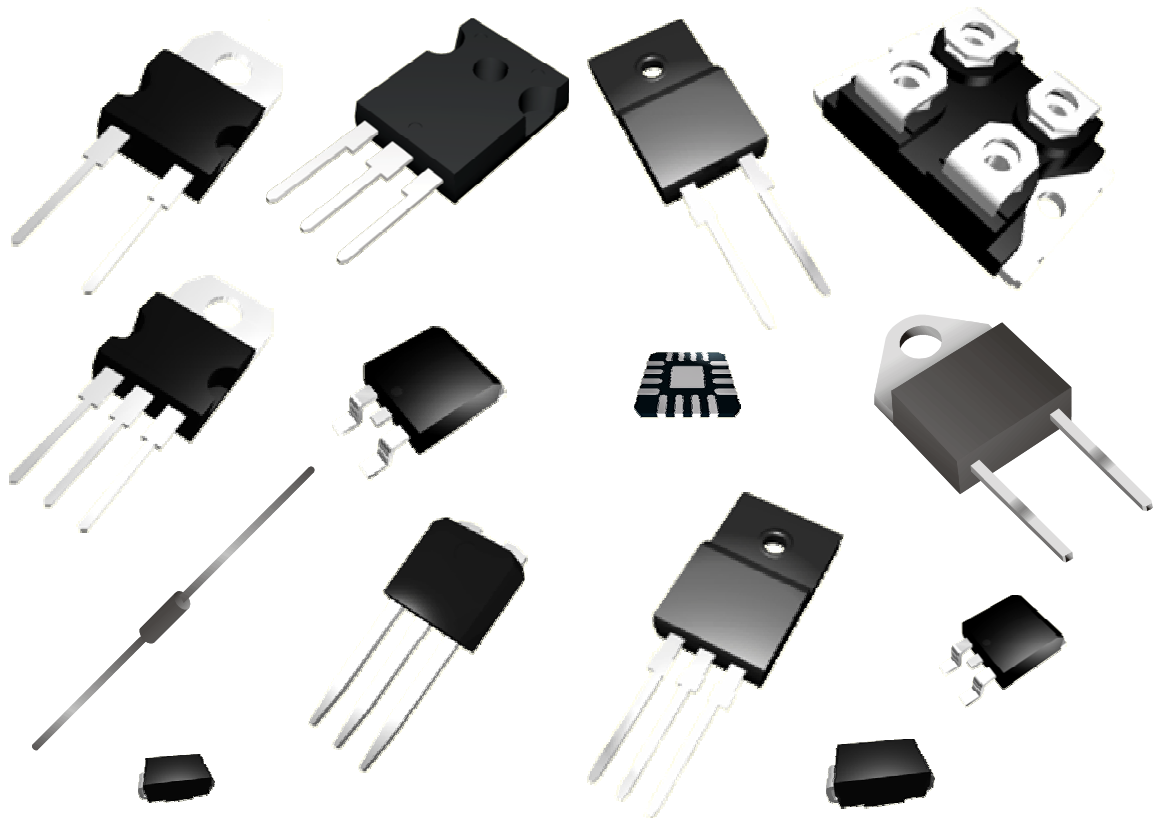
Customer Part numbers list	
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MPA - ASD & IPAD Division¹

200V, 1000V and 1200V Ultrafast Diodes:

**Moving from (SM)BY/STPR/STTA series
to new high performance latest STTH generation**



(1) MPA: Micro, Power, Analog - ASD: Application Specific Device - IPAD: Integrated Passive and Active Devices

WHY THIS PRODUCT TERMINATION?

In order to rationalize its product portfolio and to offer to the market **full benefit of the latest improvement of its technology**, ST announces the replacement of **all** the [SM]BYxxx-200, STPRxx20, BYTxxx-1000 and STTAxx12xx devices, by the **STTHxx02xx** (200V)/ **STTHxx10xx** (1000V)/ **STTHxx12xx** (1200V) series.

The new **STTHxx02xx / STTHxx10xx / STTHxx12xx** will provide to customer's applications **higher performance** in terms of **operating temperature capability** ($T_{jmax} = 175^{\circ}\text{C}$ except for ISOTOP packages) and low **leakage current** (divided by 10).

The new range allows complete replacement of the current devices with **extended current ratings from 1 A to 2x100 A**, presents **wider package choice** including **isolated versions**, and offers **parametric trade-offs** to fit specific applications.

The current **[SM]BYxxx-200, STPRxx20, BYxxx-1000 and STTAxx12xx** parts in termination have been put in a special maturity code (50) in order to stop the delivery of samples and consequently to avoid their use in new designs.

Most of the new equivalent STTHxx02xx / STTHxx10xx / STTHxx12xx have been produced for 1 to 3 years minimum and have been **qualified with benefits in same applications by a high number of customers** serving all types of power conversion applications. All these products are delivered in compliance with the RoHS*, with no change in the MSL (Moisture Sensitivity Level) for the surface mount devices.

() Restriction of the use of certain Hazardous Substances*

REPLACEMENT SCHEME

The parts in termination can be functionally replaced by the 200V / 1000V / 1200V **STTH equivalent versions in compatible package**, as indicated in the tables of annex 1 & 2 attached to the present document.

The **datasheets** of the suggested parts for replacement are available on ST website at the address below:

http://www.st.com/stonline/products/families/diodes/ultrafast/stth200_1200v.htm

Samples of the replacement products for ordered quantity superior to 20 pieces will be delivered with current lead times.

A **presentation of the new STTH200V, 1000V & 1200V series** is supplied in annex 3 to the present document.

TERMS AND CONDITIONS

- ✓ **Sampling:**
Parts in termination are not allowed for sampling since **September 26th, 2006**
- ✓ **Orders:**
Orders for the discontinued products will be accepted until April 2007,
Last time buy: **April 30th, 2007 (1)**
- ✓ **Deliveries:**
Products in termination will be delivered at the latest until October 2007.
Last ship date: **October 31st, 2007 (2)**
- ✓ **Contracts:**
Discontinued products must not be included into 2007 and further contracts.

(1) *Until June 30th, 2007 for **BYW80-200(RG)**, **BYW80FP-200** and **BYW80PI-200RG***

(2) *Until December 31th, 2007 for **BYW80-200(RG)**, **BYW80FP-200** and **BYW80PI-200RG***

- Appendix 1: replacement part tables for 200V series in phase out
- Appendix 2: replacement part tables for 1000V & 1200V series in phase out
- Appendix 3: STTH 200V, 1000V & 1200V Presentation.

Appendix 1A**Suggested Replacement Parts List****For BYV / (SM)BYWxx-200xx Ultrafast Diodes**

Part in replacement	Package	Description	Suggested Part for Replacement		Package
			Direct	Nearest	
BYW100-200	DO-15	Ultrafast diode 1.5A 200V	STTH1R02Q	STTH1R02	DO-15/DO-41
BYW100-200RL	DO-15	Ultrafast diode 1.5A 200V	STTH1R02QRL	STTH1R02RL	DO-15/DO-41
SMBYW01-200	SMB	Ultrafast diode 1A 200V	STTH1R02U	STTH1R02A	SMB/SMA
SMBYW02-200	SMB	Ultrafast diode 2A 200V	STTH2R02U		SMB
BYW98-200	DO-201AD	Ultrafast diode 3A 200V	STTH3R02	STTH3R02Q	DO-201AD/DO-15
BYW98-200RL	DO-201AD	Ultrafast diode 3A 200V	STTH3R02RL	STTH3R02QRL	DO-201AD/DO-15
BYW98-200-C1	DO-201AD bent	Ufast diode 3A 200V bent	STTH3R02-C1	STTH3R02	DO-201AD bent/DO-201AD
BYW4200B-TR	DPAK	Ultrafast diode 4A 200V	STTH4R02B-TR		DPAK
SMBYW04-200	SMC	Ultrafast diode 4A 200V	STTH4R02S	STTH4R02U	SMC/SMB
BYW29-200	TO-220AC	Ultrafast diode 8A 200V	STTH802D		TO-220AC
BYW29FP-200	TO-220FPAC	Ultrafast diode 8A 200V	STTH802FP		TO-220FPAC
BYW29G-200	D ² PAK	Ultrafast diode 8A 200V	STTH802G	STTH802B	D ² PAK/DPAK
BYW29G-200-TR	D ² PAK	Ultrafast diode 8A 200V	STTH802G-TR	STTH802B-TR	D ² PAK/DPAK
BYW80-200	TO-220AC	Ultrafast diode 10A 200V	STTH1202D (1)		TO-220AC
BYW80FP-200	TO-220FPAC	Ultrafast diode 10A 200V	STTH1202FP (1)		TO-220FPAC
BYW80PI-200RG	TO-220AC Ins	Ultrafast diode 10A 200V	STTH1202DI (1)	STTH1202FP (1)	TO-220AC Ins/TO-220FPAC
BYW81P-200	TO-220AC	Ultrafast diode 15A 200V	STTH1502D		TO-220AC
BYW81PI-200RG	TO-220AC Ins	Ultrafast diode 15A 200V	STTH1502DI		TO-220AC Ins
BYW51-200	TO-220AB	Ultrafast diode 2x10A 200V	STTH2002CT		TO-220AB
BYW51FP-200	TO-220FPAB	Ultrafast diode 2x10A 200V	STTH2002CFP		TO-220FPAB
BYW51G-200	D ² PAK	Ultrafast diode 2x10A 200V	STTH2002CG		D ² PAK
BYW51G-200-TR	D ² PAK	Ultrafast diode 2x10A 200V	STTH2002CG-TR		D ² PAK
BYW51R-200	I ² PAK	Ultrafast diode 2x10A 200V	STTH2002CR		I ² PAK
BYW77G-200	D ² PAK	Ultrafast diode 25A 200V	STTH3002G		D ² PAK
BYW77G-200-TR	D ² PAK	Ultrafast diode 25A 200V	STTH3002G-TR		D ² PAK
BYW77PI-200RG	DOP3 Ins	Ultrafast diode 25A 200V	STTH3002PI	STTH3002W	DOP3 Ins/DO-247
BYW99W-200	TO-247	Ultrafast diode 2x15A 200V	STTH3002CW		TO-247
BYW99PI-200RG	TOP3 Ins	Ultrafast diode 2x15A 200V	STTH3002CPI	STTH3002CW	TOP3 Ins/TO-247
BYV52PI-200RG	TOP3 Ins	Ultrafast diode 2x30A 200V	STTH6002CPI	STTH6002CW	TOP3 Ins/TO-247
BYV54V-200	ISOTOP	Ultrafast diode 2x50A 200V	STTH10002TV2		ISOTOP
BYV541V-200	ISOTOP	Ultrafast diode 2x50A 200V	STTH10002TV1		ISOTOP
BYV255V-200	ISOTOP	Ultrafast diode 2x150A 200V	STTH20002TV1		ISOTOP

(1) Replacement device available in December 2006

Appendix 1B**Suggested Replacement Parts List****For STPRxx20xx 200V Ultrafast Diodes**

Part in replacement	Package	Description	Suggested Part for Replacement		Package
			Direct*	Nearest	
STPR120A	SMA	Ultrafast diode 1A 200V	STTH1R02A		SMA
STPR520FP	TO-220FPAC	Ultrafast diode 5A 200V		STTH4R02FP	TO-220FPAC
STPR620CT	TO-220AB	Ultrafast diode 2x3A 200V	STTH602CT		TO-220AB
STPR820D	TO-220AC	Ultrafast diode 8A 200V	STTH802D		TO-220AC
STPR820FP	TO-220FPAC	Ultrafast diode 8A 200V	STTH802FP		TO-220FPAC
STPR1020CT	TO-220AB	Ultrafast diode 2x5A 200V	STTH1002CT		TO-220AB
STPR1020CFP	TO-220FPAB	Ultrafast diode 2x5A 200V	STTH1002CFP		TO-220FPAB
STPR1020CB	DPAK	Ultrafast diode 2x5A 200V	STTH1002CB		DPAK
STPR1020CB-TR	DPAK	Ultrafast diode 2x5A 200V	STTH1002CB-TR		DPAK
STPR1520D	TO-220AC	Ultrafast diode 15A 200V	STTH1502D		TO-220AC
STPR2420CT	TO-220AB	Ultrafast diode 2x12A 200V		STTH2002CT	TO-220AB
STPR1620CT	TO-220AB	Ultrafast diode 2x8A 200V	STTH1602CT		TO-220AB
STPR1620CG	D ² PAK	Ultrafast diode 2x8A 200V	STTH1602CG		D ² PAK
STPR1620CG-TR	D ² PAK	Ultrafast diode 2x8A 200V	STTH1602CG-TR		D ² PAK

(*) Blank = no direct replacement

Appendix 2A**Suggested Replacement Parts List****For BYTxxPxx-1000xx 1000V Ultrafast Diodes**

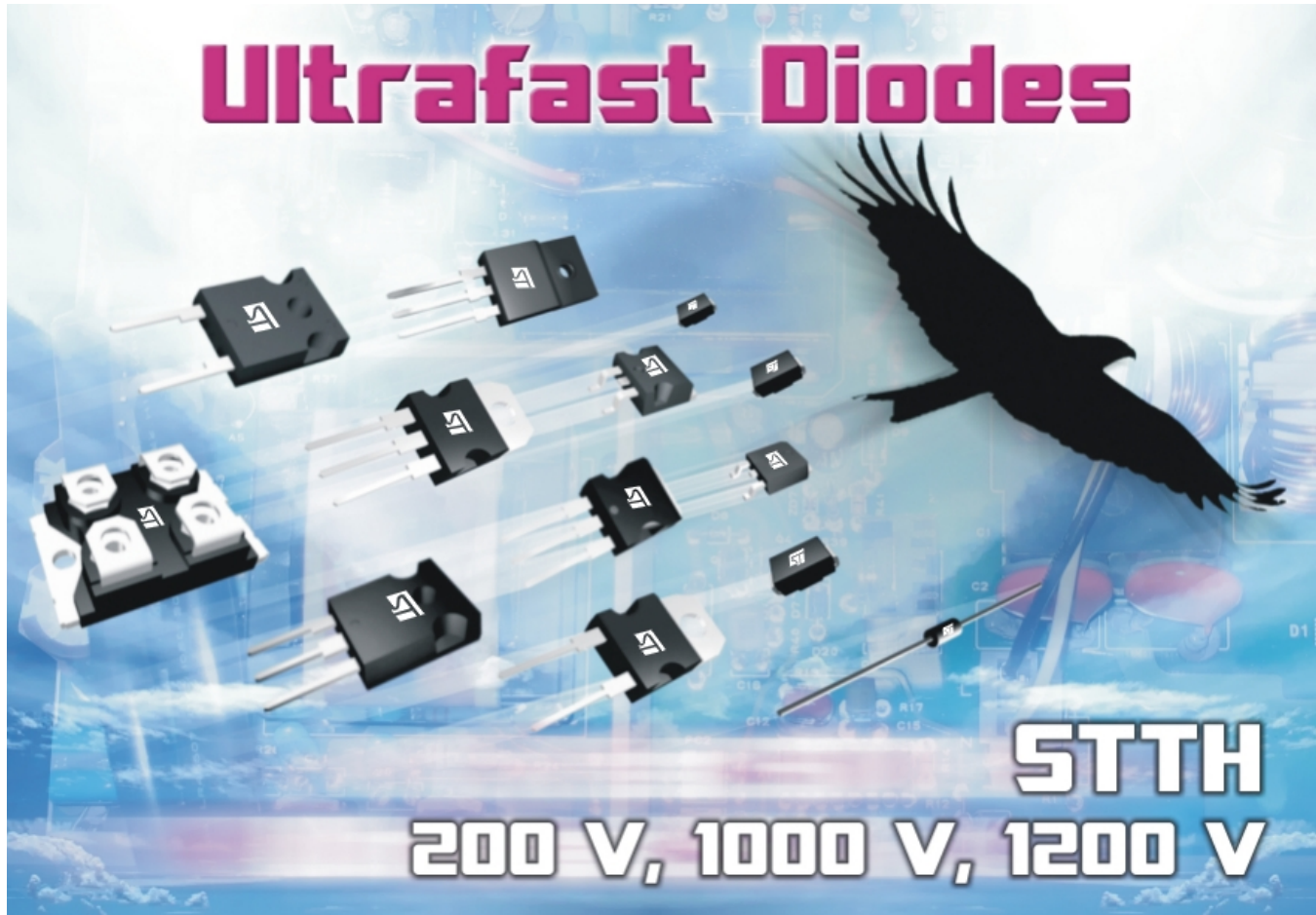
Part in replacement	Package	Description	Suggested Part for Replacement	Package
BYT08P-1000	TO-220AC	Ultrafast diode 8A 1000V	STTH810D	TO-220AC
BYT08PI-1000	TO-220AC Ins	Ultrafast diode 8A 1000V	STTH810DI	TO-220AC Ins
BYT08PI-1000RG	TO-220AC Ins	Ultrafast diode 8A 1000V	STTH810DI	TO-220AC Ins
BYT12P-1000	TO-220AC	Ultrafast diode 12A 1000V	STTH1210D	TO-220AC
BYT12PI-1000	TO-220AC Ins	Ultrafast diode 12A 1000V	STTH1210DI	TO-220AC Ins
BYT12PI-1000RG	TO-220AC Ins	Ultrafast diode 12A 1000V	STTH1210DI	TO-220AC Ins
BYT230PIV-1000	ISOTOP	Ultrafast diode 2x30A 1000V	STTH6110TV2	ISOTOP
BYT231PIV-1000	ISOTOP	Ultrafast diode 2x30A 1000V	STTH6110TV2	ISOTOP
BYT261PIV-1000	ISOTOP	Ultrafast diode 2x60A 1000V	STTH12010TV2	ISOTOP
BYT30PI-1000	DOP3 Ins	Ultrafast diode 30A 1000V	STTH3010PI	DOP3 Ins
BYT30PI-1000RG	DOP3 Ins	Ultrafast diode 30A 1000V	STTH3010PI	DOP3 Ins

Appendix 2B**Suggested Replacement Parts List****For STTAxx12xx 1200V Ultrafast Diodes**

Part in replacement	Package	Description	Suggested Part for Replacement	Package
STTA312B	DPAK	Turboswitch diode 3A 1200V	STTH312B	DPAK
STTA312B-TR	DPAK	Turboswitch diode 3A 1200V	STTH312B-TR	DPAK
STTA512D	TO-220AC	Turboswitch diode 5A 1200V	STTH512D	TO-220AC
STTA512FP	TO-220FPAC	Turboswitch diode 5A 1200V	STTH512FP	TO-220FPAC
STTA512B	DPAK	Turboswitch diode 5A 1200V	STTH512B	DPAK
STTA512B-TR	DPAK	Turboswitch diode 5A 1200V	STTH512B-TR	DPAK
STTA812D	TO-220AC	Turboswitch diode 8A 1200V	STTH812D	TO-220AC
STTA812DI	TO-220AC Ins	Turboswitch diode 8A 1200V	STTH812DI	TO-220AC Ins
STTA812DIRG	TO-220AC Ins	Turboswitch diode 8A 1200V	STTH812DI	TO-220AC Ins
STTA812G	D ² PAK	Turboswitch diode 8A 1200V	STTH812G	D ² PAK
STTA1212D	TO-220AC	Turboswitch diode 12A 1200V	STTH1212D	TO-220AC
STTA1512PI	DOP3 Ins	Turboswitch diode 15A 1200V	STTH1512PI	DOP3 Ins
STTA1512PIRG	DOP3 Ins	Turboswitch diode 15A 1200V	STTH1512PI	DOP3 Ins
STTA5012TV2	ISOTOP	Turboswitch diode 2x25A 1200V	STTH6112TV2	ISOTOP
STTA9012TV1	ISOTOP	Turboswitch diode 2x45A 1200V	STTH9012TV1	ISOTOP
STTA9012TV2	ISOTOP	Turboswitch diode 2x45A 1200V	STTH9012TV2	ISOTOP

STTH200V, 1000V & 1200V Presentation

MPA Group - ASD & IPAD



MPA: Micro, Power, Analog

ASD: Application Specific Devices

IPAD: Integrated Passive and Active Devices



STTH200V, 1000V & 1200V Presentation

Drivers for new STTHxx0Yxx

- ❑ To **advantageously replace** the Au doping ageing technology
- ❑ To **take benefit** of Ultrafast STTHxx **sales recognition** by market
- ❑ To **offer wider product selection**
- ❑ To **multiply parameter trade-offs** to better fit each application
- ❑ To **provide best performance** with state-of-the-art technology



STTH200V, 1000V & 1200V Presentation

Targeted applications

SMPS, motor control, lighting, UPS, welding...

□ Function:

✓ General usage:

- Clamping
- Snubber

✓ Welding equipment:

- Rectification
- Demagnetisation
- Freewheeling

*STTHxxL0Yxx 2*30A to 2*100A*

STTHxxL0Yxx 5A to 30A

STTHxxL0Yxx 30A to 60A

✓ Motor control

- 3 phases
- 1 phase

STTHxx12x

STTHxR06x



STTH200V, 1000V & 1200V Presentation

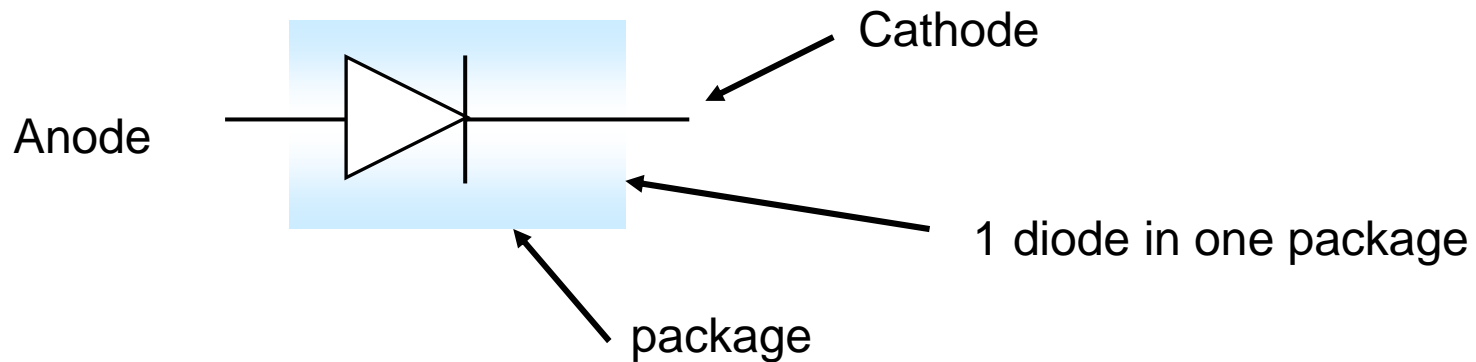
New series benefits

- ❑ $T_j = 175^\circ\text{C}$ versus 150°C for BYT / BYV / (SM)BYW / STPR / STTA
- ❑ Leakage current **divided by 10**
- ❑ Multiple current ratings **from 1 A to 2x100 A**
- ❑ **Wide package offering**, including isolated versions
- ❑ Numerous **parametric trade-offs** to fit each application



STTH200V, 1000V & 1200V Presentation

Single Diode terminology



STTH812D = 8 A / 1200 V = single 8 Amps / 1200 V in TO220AC

STTH: Ultrafast

8 Amps

L: low V_F

Blank: medium V_F & Q_{rr}

R: low Q_{rr}

Nota: L & R trade-off
mainly used for 600V

SMD packages

A : SMA

U : SMB

S : SMC

B : DPAK

G : D²PAK

2 x 100 V = 200 V

10 x 100 V = 1000 V

12 x 100 V = 1200 V

Through hole packages

DO-15 (axial)

DO-201AD (axial)

D : TO-220AC

DI : TO-220I

FP: TO-220FP (Full Pack)

R : I²PAK

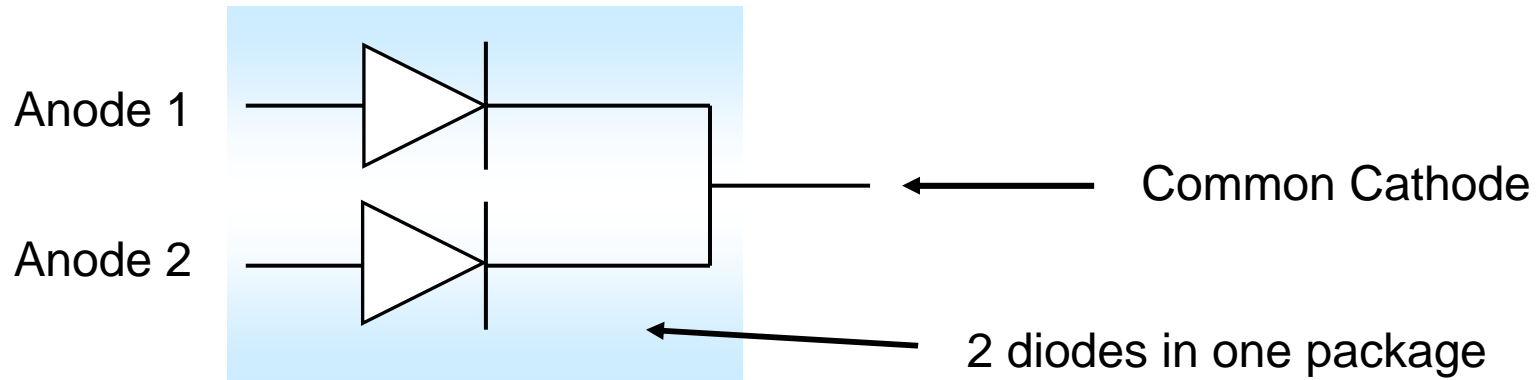
PI : DOP3I

W : DO-247



STTH200V, 1000V & 1200V Presentation

Dual Diode terminology



STTH6002CW = 2 x 30 A / 200 V = dual 60 Amps / 200 V in TO-247

STTH: Ultrafast

60 Amps

L: low V_F

Blank: medium V_F & Q_{rr}

R: low Q_{rr}

Nota: L & R trade-off
mainly used for 600V

C : Common cathode
For dual diode

2 x 100 V = 200 V

10 x 100 V = 1000 V

12 x 100 V = 1200 V

Avg current per diode

Through hole packages

W : TO-247

T : TO-220AB

FP : TO-220FPAB

R : I²PAK

SMD packages

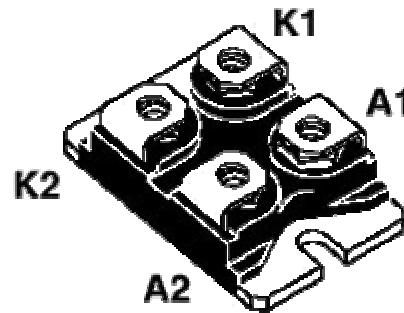
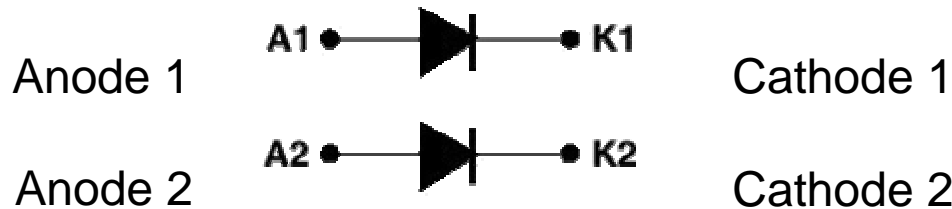
B : DPAK

G : D²PAK



STTH200V, 1000V & 1200V Presentation

ISOTOP package terminology



2 isolated diodes in one package

STTH12010TV2 = 2 x 60 A / 1000 V = dual 60 Amps / Isotop 1000 V

STTH: ultrafast

2 x 60 Amps

L: low V_F

Blank: medium V_F & Q_{rr}

R: low Q_{rr}

2 x 100 V = 200 V

10 x 100 V = 1000 V

12 x 100 V = 1200 V

Avg current per diode

TV1 = ISOTOP package, longitudinal

TV2 = ISOTOP package, lateral

Nota: L & R trade-off
mainly used for 600V



STTH200V, 1000V & 1200V Presentation

200V replacement chart

Amp	Old	Existing	New
1	STPR120	STTH102	
1.5	BYW100-200	STTH152	STTH1R02
2	SMBYW02-200 STSR220	STTH152	STTH2R02U
3	STPR320 BYW98-200	STTH302	STTH3R02
4	SMBYW04-200 BYW4200B		STTH4R02U STTH4R02B
5	STPR520		STTH4R02
2 x 3	STPR620Cx		STTH602Cx
8	BYW29-200 STPR820		STTH802
2 x 4		STTH802Cx	
2 x 5	STPR1020C	STTH1002Cx	
10	BYW80-200		STTH802

Amp	Old	Existing	New
2 x 6.5		STTH1302Cx	
15	STPR1520 BYW81P-200		STTH1502 STTH2002
2 x 8	STPR1620Cx	STTH1602Cx	
20			STTH2002
2 x 10	BYW51-200	STTH2002Cx	STTH2002C
25	BYW77-200		STTH3002
30			
2 x 15	BYW99W-200	STTH3002Cx	
2 x 30	BYV52-200	STTH6002Cx STTH6102TV	
2 x 50	BYV54V-200 BYV541V-200		STTH10002TV
2 x 60		STTH12002TV	
2 X 100	BYV255V-200	STTH20002TV	

Full replacement range now available, started in year 2004



STTH200V, 1000V & 1200V Presentation

1000V replacement chart

Amp	EOLSeries		New STTH	
	P/N	Packages	P/N	Packages
1			STTH110 A/U	Axial / SMA / SMB
2				
3			STTH310 U	Axial / SMB
5				
8	BYT08Px-1000	TO-220 / TO-220I	STTH810 G/D/FP/DI	D ² PAK / TO-220 / TO-220FP / TO-220I
12	BYT12Px-1000	TO-220 / TO-220I	STTH1210 G/D/FP/DI	D ² PAK / TO-220 / TO-220FP / TO-220I
15				
25				
30	BYT30Px-1000	DOP3I / SOD93	STTH3010 W/PI/D	DO-247 / DOP3I / TO-220
2 x 30	BYT23xPIV-1000	ISOTOP	STTH6110 TV1/TV2	ISOTOP
60			STTH6010 W	DO-247
2 x 60	BYT26xPIV-1000	ISOTOP	STTH12010 TV1/TV2	ISOTOP

- More applications served
- Replacements of all BYTxx-1000
- Wider range of packages available



STTH200V, 1000V & 1200V Presentation

1200V replacement chart

Amp	Old Series		New STTH	
	P/N	Packages	P/N	Packages
1	STTA112	SMB	STTH112 A/U	Axial / SMA / SMB
2	STTA212	SMC	STTH212 U/S	Axial / SMB / SMC
3	STTA312	DPAK	STTH312 B	DPAK
5	STTA512	DPAK / TO-220 / TO-220FP	STTH512 B/D/FP	DPAK / TO-220 / TO-220FP
8	STTA812	D ² PAK / TO-220 / TO-220I	STTH812 G/D/FP/DI	D ² PAK / TO-220 / TO-220FP / TO-220I
12	STTA1212	TO-220	STTH1212 G/D	D ² PAK / TO-220
15	STTA1512	DOP3I / SOD93	STTH1512 G/D/PI/W	D ² PAK / TO-220 / DOP3I / DO-247
25	STTA2512	SOD93		
30			STTH3012 W/D	DO-247 / TO-220
2 x 25	STTA5012	ISOTOP	STTH5012 TV1/TV2	ISOTOP
2 x 30			STTH6112 TV1/TV2	ISOTOP
2 x 45	STTA9012	ISOTOP	STTH9012 TV1/TV2	ISOTOP
2 x 60			STTH12012 TV1/TV2	ISOTOP

- Replacements of all STTAxx12xx
- 12 new products to address customers application



STTH200V, 1000V & 1200V Presentation

Ultrafast Diodes

More product information available on

<http://www.st.com/stonline/products/families/diodes/diodes.htm>



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