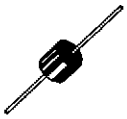
SGS-THOMSON MICROELECTRONICS

POWER RECTIFIER DIODES

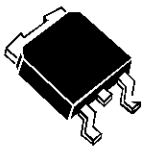

F126

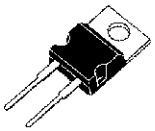

DO-201AD

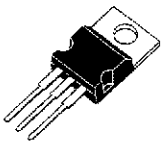

AG


SMB


SMC


DPAK


TO220AC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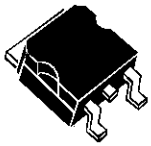
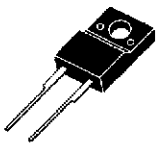
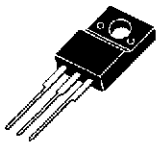

D^2PAK


ISOWATT220AC
(Fully Isolated)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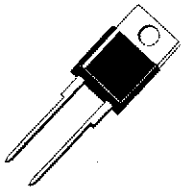
(Fully Isolated)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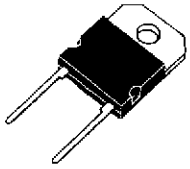
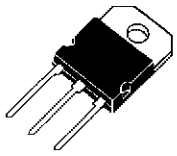

SOD93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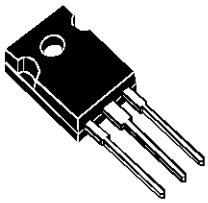
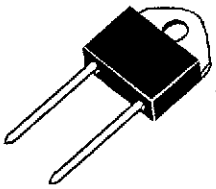
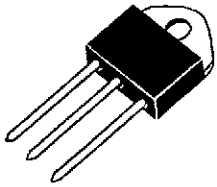
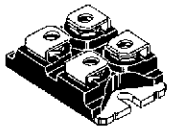

TO247


DOP3I


TOP3I


ISOTOP®
(Screw version)

HIGH EFFICIENCY FAST RECOVERY

V_{RRM} = 200 V t_{rr} max 35 ns V_F = 0.85 V

BYW SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j=125°C max (V) (A)	I_R @ V_{RRM} T_j = 100°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	Package
▲SMBYW01-200	1	200	60	0.71 @ 150°C 1	0.4 @ 125°C	35	SMB
• **BYW 100-200**	1.5	200	50	0.85 (2) 1.5	0.5	35 (3)	F126
▲STSR220	2	200	70	0.80 (2) 2	0.5	35	F126
SMBYW02-200	2	200	50	0.85 (2) 2	0.5	35	SMB
• **BYW 98-200**	3	200	70	0.85 (2) 3	1	35 (3)	DO-201AD
SMBYW04-200	4	200	70	0.85 (2) 4	0.5	35	SMC
BYW4200B	4	200	70	0.85 (2) 4	0.5	35	DPAK
• **BYW 29-200**	8	200	80	0.85 5	0.6	35	TO220AC
BYW29F-200	8	200	80	0.85 5	0.6	35	ISOWATT220AC
• **BYW 80-200**	8	200	100	0.85 7	1	35	TO220AC
BYW 80F-200	8	200	100	0.85 7	1	35	ISOWATT220AC
BYW 80PI-200	8	200	100	0.85 7	1	35	DO220I

(1) : I_F = 1 A V_R =30 V di_F/dt = –50 A/µs.
(2) : at Tj=100°C
(3) : t_{rr} = 25 ns @ I_F = 0.5 A I_R = 1 A I_{rr} = 0.25 A.

• **Preferred device.**
▲ New product.

POWER RECTIFIER DIODES

SGS-THOMSON MICROELECTRONICS

HIGH EFFICIENCY FAST RECOVERY (cont'd)

V_{RRM} = 200 V t_{rr} max 35...50 ns V_F = 0.85 V

BYW SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j=125°C max (V)	(A)	I_R @ V_{RRM} T_j = 100°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	Package
• **BYW 81P-200**	15	200	200	0.85	12	1.5	35	TO220AC
BYW 81PI-200	15	200	200	0.85	12	1.5	35	DO220I
• **BYW 51-200**	20 (2 x 10)	200	100	0.85	8	1	35	TO220AB
• **BYW 51F-200**	20 (2 x 10)	**200**	100	0.85	8	1	35	ISOWATT220AB
▲BYW 51G-200	20 (2 x 10)	200	100	0.85	8	1	35	D2PAK
• **BYW 77P-200**	25	200	500	0.85	20	2.5	50	SOT93
BYW 77PI-200	25	200	500	0.85	20	2.5	50	DOP3I
• **BYW 99P-200**	30 (2 x 15)	200	200	0.85	12	1.5	40	SOT93
BYW 99PI-200	30 (2 x 15)	200	200	0.85	12	1.5	40	TOP3I
BYW99W-200	30 (2 x 15)	200	200	0.85	12	1.5	40	TO247

(1) : I_F = 1 A V_R =30 V dI_F/dt = –50 A/µs.
(2) : at Tj=100°C

• **Preferred device.**
▲ New product.

V_{RRM} = 200 V t_{rr} max 50...80 ns V_F = 0.85 V

BYW SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j=125°C max (V)	(A)	I_R @ V_{RRM} T_j = 100°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	Package
BYV 52 PI-200	60 (2 x 30)	200	500	0.85	20	2.5	50	TOP3I
• **BYV 52-200**	60 (2 x 30)	200	500	0.85	20	2.5	50	SOT93
• **BYV 541V-200**	100 (2 x 50)	**200**	800	0.85	50	5	60	ISOTOP (Parallel)
• **BYV 54V-200**	100 (2 x 50)	**200**	1000	0.85	50	5	80	ISOTOP (Antiparallel)
• **BYV 255V-200**	200 (2 x 100)	**200**	1600	0.85	100	10	80	ISOTOP (Parallel)

(1) : I_F = 1 A V_R =30 V dI_F/dt = –50 A/µs.
(2) : at Tj=100°C.

• **Preferred device.**

SGS-THOMSON MICROELECTRONICS

POWER RECTIFIER DIODES

ULTRA-FAST RECOVERY RECTIFIER DIODES

V_{RRM} = 200 V t_{rr} max 30 ns V_F = 0.99 V

STPR SERIES. 12V & 24V SMPS

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j=125°C max (V)	(A)	I_R @ V_{RRM} T_j = 100°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	Package
STPR320	3	200	30	0.99	3	0.5	30	DO-201AD
STPR520D	5	200	50	0.99	5	0.5	30	TO220AC
STPR520F	5	200	50	0.99	5	0.5	30	ISOWATT220AC
STPR620CT	6 (2x3)	200	30	0.99	3	0.5	30	TO220AB
STPR620CF	6 (2x3)	200	30	0.99	3	0.5	30	ISOWATT220AB
STPR820D	8	200	80	0.99	8	0.6	30	TO220AC
STPR820F	8	200	80	0.99	8	0.6	30	ISOWATT220AC
STPR1020CT	10 (2 x 5)	200	50	0.99	5	0.5	30	TO220AB
STPR1020CF	10 (2 x 5)	200	50	0.99	5	0.5	30	ISOWATT220AB
STPR1020CB	10 (2 x 5)	200	70	0.85 (2)	5	0.5	35	DPAK
STPR1020CG	10 (2 x 5)	200	50	0.99	5	0.5	30	D^2PAK
STPR1220D	12	200	120	0.99	12	0.8	30	TO220AC
STPR1220F	12	200	120	0.99	12	0.8	30	ISOWATT220AC
STPR1520D	15	200	150	0.99	15	1.0	30	TO220AC
STPR1620CT	16 (2 x 8)	200	80	0.99	8	0.6	30	TO220AB
STPR1620CG	16 (2 x 8)	200	80	0.99	8	0.6	30	D^2PAK
STPR2420CT	24 (2 x 12)	200	120	0.99	12	0.8	30	TO220AB

(1) : I_F = 0.5 A I_R =1 A I_{RR} = 0.25 A.

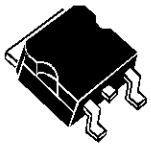
(2) @ T_j = 100°C

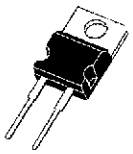
POWER RECTIFIER DIODES

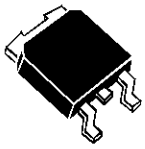
SGS-THOMSON MICROELECTRONICS

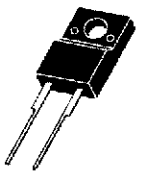

SOD6

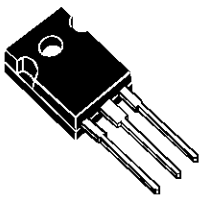

SOD15


DPAK


TO220AC


D^2PAK


ISOWATT220AC
(Fully Isolated)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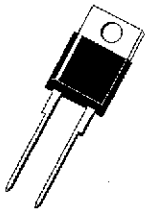
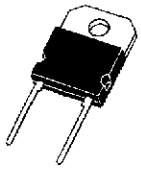
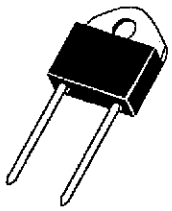
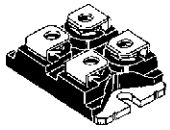

DO22OI


SOD93


DOP3I


ISOTOP®

HIGH VOLTAGE ULTRA-FAST POWER DIODES

V_{RRM} = 600 V t_{rr} max 80 ns (1)

STTA SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	V_F @ I_F T_j=125°C max (V)	(A)	I_R (2) T_j = 125°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	I_{RM} (2) T_j=125°C max (A)	Package
STTA106U	1	600	1.5	1	0.8	50	0.6	SMB
STTA206S	2	600	1.5	2	1.2	50	1.2	SMC
STTA306B	3	600	1.65	3A	1.2	50	1.2	DPAK
STTA506D STTA506F STTA506B	5	600	1.5	5	2	50	3.0	TO220AC ISOWATT200AC DPAK
STTA806D STTA806DI	8	600	1.5	8	4	52	5.5	TO220AC DO220I
STTA1206D STTA1206DI STTA1206G	12	600	1.5	12	5	55	7.5	TO220AC DO220I D^2PAK
STTA2006P STTA2006PI	20	600	1.5	20	6	60	12.5	SOD93 DOP3I
STTA3006P STTA3006PI	30	600	1.5	30	8	65	19.0	SOD93 DOP3I
STTA3006CW	2x15	600	1.6	15	5	65	12.5	TO247
STTA6006TV1/2	2x30	600	1.5	30	8	65	19.0	ISOTOP(4)
STTA12006TV1/2	2x60	600	1.5	60	12	80	38.0	ISOTOP(4)

(1) : I_F = 1 A V_R =30 V dI_F/dt = –50 A/µs.
(2) I_R @ 80% of V_{RRM}
(3) : $d_{iF/dt}$ = –8 x $I_{F(av)}$ A/µs V_R = 400 V I_F = $I_{F(av)}$

(4) SUFFIX	Parallel version	Antiparallel version
Screw Version	TV1	TV2

SGS-THOMSON MICROELECTRONICS

POWER RECTIFIER DIODES

TURBOSWITCH (cont'd)

V_{RRM} = 1200 V t_{rr} max 115 ns (1)

STTA SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	V_F @ I_F T_j=125°C max (V)	(A)	I_R (2) T_j = 125°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	I_{RM} (4) T_j=125°C max (A)	Package
STTA112U	1	1200	1.3	1	0.35	115	1.8	SMB
STTA212S	2	1200	1.3	2	0.40	115	3.6	SMC
STTA312B	3	1200	1.7	3	0.40	115	3.6	DPAK
STTA512D STTA512F	5	1200	1.3	5	2	95	7.5	TO220AC ISOWATT200AC
STTA812D STTA812DI	8	1200	1.3	8	4	100	12	TO220AC DO220I
STTA1212D	12	1200	1.3	12	5	100	18	TO220AC
STTA1512P STTA1512PI	15	1200	1.3	15	6	105	–	SOD93 DOP3I
STTA2512P	25	1200	1.3	25	8	110	–	SOD93
STTA5012TV1/2	2x25	1200	1.3	25	8	110	–	ISOTOP(5)
STTA9012TV1/2	2x45	1200	1.3	45	12	115	–	ISOTOP(5)

(1) : I_F = 1 A V_R =30 V dI_F/dt = –50 A/µs.
(2) I_R @ 80% of V_{RRM}
(3) : dI_F/dt = –8 x $I_{F(av)}$ A/µs V_R = 400 V I_F = $I_{F(av)}$
(4) : dI_F/dt = –8 x $I_{F(av)}$ A/µs V_R = 600 V I_F = $I_{F(av)}$

(5) SUFFIX	Parallel version	Antiparallel version
Screw Version	TV1	TV2

POWER RECTIFIER DIODES

SGS-THOMSON MICROELECTRONICS

TURBOSWITCH (cont'd)

V_{RRM} = 600 V t_{rr} max 115 ns (1)

STTB SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	V_F @ I_F T_j=125°C max (V)	(A)	I_R (4) T_j = 125°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	I_{RM} (3) T_j=125°C max (A)	Package
STTB106U	1	600	1.3	1	0.40	95	1.2	SMB
STTB206S	2	600	1.3	2	0.50	95	2.4	SMC
STTB306B	3	600	1.45	3	0.50	95	2.4	DPAK
STTB506D STTB506F STTB506B	5	600	1.3	5	0.75	95	7.5	TO220AC ISOWATT200AC DPAK
STTB806D STTB806DI	8	600	1.3	8	1.5	100	12	TO220AC DO220I
STTB1206D STTB1206DI	12	600	1.3	12	2.0	100	18	TO220AC DO220I
STTB2006P STTB2006PI	20	600	1.3	20	3.0	105	30	SOD93 DOP3I
STTB3006P STTB3006PI	30	600	1.3	30	5.0	110	45	SOD93 DOP3I
STTB3006CW	2x15	600	1.6	15	2.0	100	18	TO247
STTB6006TV1/2	2x30	600	1.3	30	5.0	110	45	ISOTOP(5)
STTB12006TV1/2	2x60	600	1.3	60	9.0	115	90	ISOTOP(5)

SGS-THOMSON MICROELECTRONICS

POWER RECTIFIER DIODES

"SUPERSWITCH 2" ULTRA-FAST RECOVERY

V_{RRM} = 400, 1000 V t_{rr} max 70 ns

BYT SERIES

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j = 100°C max (V)	(A)	I_R @ V_{RRM} T_j = 100°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	t_{IRM} T_j = 100°C max (ns)	I_{RM} T_j = 100°C max (A)	Package
SMBYT01-400	1	400	30	1.4	1	0.5	25	50	2	SMB
BYT 01-400	1	400	30	1.4	1	0.5	25	50	2	F126
SMBYT03-400	3	400	60	1.4	3	0.5	25	50	2	SMC
BYT 03-400	3	400	60	1.4	3	0.5	25	50	2	DO27A
• **BYT 08P-400** • **BYT 08P-1000**	8	400 **1000**	100 50	1.4 1.8	8	2.5 2	35 65	75 200	2.2 5.2	TO220AC
• **BYT 08PI-400** • **BYT 08PI-1000**	8	**400** **1000**	100 50	1.4 1.8	8	2.5 2	35 65	75 200	2.2 5.2	DO220I
• **BYT 12PI-1000**	12	**1000**	75	1.8	12	2.5	65	200	7.8	DO220I
• **BYT 12P-1000**	12	**1000**	75	1.8	12	2.5	65	200	7.8	TO220AC
• **BYT 16P-400**	16 (2 x 8)	**400**	100	1.4	8	2.5	35	75	2.2	TO220AB
• **BYT 30P-400** • **BYT 30P-1000**	30	400 **1000**	350 200	1.4 1.8	30	6 5	50 70	75 200	9 19.5	SOD 93
• **BYT 30PI-400** • **BYT 30PI-1000**	30	**400** **1000**	350 200	1.4 1.8	30	6 5	50 70	75 200	9 19.5	DOP3I
BYT3400B	3	400	60	1.4	3	0.5	25	50	2	DPAK
• **BYT 60P-400** BYT 60P-1000	60	**400** 1000	550 400	1.4 1.8	60	10 6	50 70	75 200	18 40	SOD 93
BYT 200PIV-400	200 (2 x 100)	400	600	1.4	100	12	55	75	40	ISOTOP (Parallel)
• **BYT 231PIV-400** • **BYT 231PIV-1000**	60 (2 x 30)	**400** **1000**	350 200	1.4 1.8	30	6 5	50 70	75 200	9 20	ISOTOP (Parallel) (3)
• **BYT 230PIV-400** • **BYT 230PIV-1000**	60 (2 x 30)	**400** **1000**	350 200	1.4 1.8	30	6 5	50 70	75 200	9 20	ISOTOP (Antiparallel)
• **BYT 261PIV-400** • **BYT 261PIV-1000**	120 (2 x 60)	**400** **1000**	600 400	1.4 1.8	60	6	50 70	75 200	18 40	ISOTOP (Parallel)
• **BYT 260PIV-400** • **BYT 260PIV-1000**	120 (2 x 60)	**400** **1000**	800 400	1.4 1.8	60	6	50 70	75 200	18 40	ISOTOP (Antiparallel)

(1) : I_F = 0.5 A I_R = 1 A I_{rr} = 0.25 A

• Preferred device.

POWER RECTIFIER DIODES

SGS-THOMSON MICROELECTRONICS

FAST RECOVERY

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j = 25°C max (V)	(A)	I_R @ V_{RRM} T_j = 25°C max (mA)	t_{rr} (1) T_j=25°C max (ns)	Package
PLQ 08 PLQ 1	1	80 100	20	1.1	1	0.01	50 (2)	F126
• **BYT 11–600** BYT 11–800 BYT 11–1000	1	**600** 800 1000	35	1.3	1	0.02	–	F126
PFR 851 PFR 852 PFR 854 PFR 856	3	100 200 400 600	150	1.25	3	0.01	150 (3) 150 (3) 150 (3) 200 (3)	DO-201AD
• **BYT 13–600** BYT 13–800 BYT 13–1000	3	**600** 800 1000	100	1.3	3	0.02		DO-201AD
• **BYT 71-600** • **BYT 71-800**	6	600 800	90	1.4	6	1	300	TO220AC
• **BYT71F-600** • **BYT71F-800**	6	**600** **800**	90	1.4	6	1	300	ISOWATT220AC
BY 233–400 BY 233–600	10	400 600	100	1.5	8	1	150	TO220AC
ESM 765–600 ESM 765–800	10	600 800	120	1.4	10	1	300	TO220AC
ESM 765PI–600 ESM 765PI–800	10	600 800	120	1.4	10	1	300	DO220I

(1) : I_F = 1 A V_R = 30 V di_F/dt = –15 A/µs.
(2) : I_F = 1 A V_R = 30 V di_F/dt = –50 A/µs.
(3) : I_F = 1 A V_R = 30 V di_F/dt = –25 A/µs.

• **Preferred device.**

STANDARD

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F max (V)	(A)	I_R @ V_{RRM} max (mA)	/ T_j (°C)	Package
BY 214–200 BY 214–400 • **BY 214–600** BY 214–800 (1) BY 214–1000 (1)	6	200 400 **600** 800 1000	400	1.2	20	0.25	100	AG
• **BY 239L–800**	10	**800**	140	1.45	30	0.5	125	TO220AC

(1) : 800 V/1000 V: on request.

SGS-THOMSON MICROELECTRONICS

POWER RECTIFIER DIODES

FULL BRIDGE IN ISOTOP

Type	$I_{F(AV)}$ (A)	V_{RRM} (V)	I_{FSM} t_p=10 ms (A)	V_F @ I_F T_j = 25°C max (V)	(A)	I_R @ 0.8 V_{RRM} T_j = 25°C max (mA)	Package
BF3506TV	35	600	300	1.3	35	0.2	ISOTOP
BF3510TV	35	1000	300	1.3	35	0.2	ISOTOP