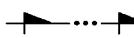
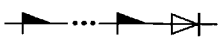
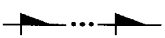
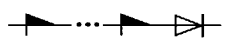
Breakover Diodes

ABB Semiconductors AG

- Diffused pnpn structure fired by over-voltages.
- Effective protection of thyristors against transients.
- Thyristor protection by emergency firing.

- Diffundierte pnpn-Struktur, wird durch Überspannungen gezündet.
- Effektiver Schutz von Thyristoren gegen Überspannungen.
- Schutz des Thyristors durch Notzündung.

- 過電圧によってサイリスタを点弧する拡散pnpn構造
- サイリスタを過渡過電圧から保護
- 過電圧でサイリスタをオンすることによりサイリスタの破壊を未然に防止

Housing:		Single element		Module		Module incl. diode		Module with flex wire		Module incl. diode and with flex wire	
Int. structure											
V_{BO} V	Tole-rance V	Type and ordering number	Fig.	Type and ordering number	Fig.	Type and ordering number	Fig.	Type and ordering number	Fig.	Type and ordering number	Fig.
400	±50	5SBA 20T0400	28								
500	±50	5SBA 20T0500	28								
600	±50	5SBA 20T0600	28								
700	±50	5SBA 20T0700	28								
800	±50	5SBA 20T0800	28								
900	±50	5SBA 20T0900	28								
1000	±50	5SBA 20T1000	28								
1100	±50			5SBB 20T1100	29	5SBD 05T1100	29	5SBL 20T1100	30	5SBE 05T1100	30
1200	±50			5SBB 20T1200	29	5SBD 05T1200	29	5SBL 20T1200	30	5SBE 05T1200	30
1300	±50			5SBB 20T1300	29	5SBD 05T1300	29	5SBL 20T1300	30	5SBE 05T1300	30
1400	±50			5SBB 20T1400	29	5SBD 05T1400	29	5SBL 20T1400	30	5SBE 05T1400	30
1500	±50			5SBB 20T1500	29	5SBD 05T1500	29	5SBL 20T1500	30	5SBE 05T1500	30
1600	±50			5SBB 20T1600	29	5SBD 05T1600	29	5SBL 20T1600	30	5SBE 05T1600	30
1700	±50			5SBB 20T1700	29	5SBD 05T1700	29	5SBL 20T1700	30	5SBE 05T1700	30
1800	±50			5SBB 20T1800	29	5SBD 05T1800	29	5SBL 20T1800	30	5SBE 05T1800	30
1900	±50			5SBB 20T1900	29	5SBD 05T1900	29	5SBL 20T1900	30	5SBE 05T1900	30
2000	±50			5SBB 20T2000	29	5SBD 05T2000	29	5SBL 20T2000	30	5SBE 05T2000	30
2100	±50			5SBB 20T2100	29	5SBD 05T2100	29	5SBL 20T2100	30	5SBE 05T2100	30
2200	±50			5SBB 20T2200	29	5SBD 05T2200	29	5SBL 20T2200	30	5SBE 05T2200	30
2300	±50			5SBB 20T2300	29	5SBD 05T2300	29	5SBL 20T2300	30	5SBE 05T2300	30
2400	±50			5SBB 20T2400	29	5SBD 05T2400	29	5SBL 20T2400	30	5SBE 05T2400	30
2500	±50			5SBB 20T2500	29	5SBD 05T2500	29	5SBL 20T2500	30	5SBE 05T2500	30
2600	±100			5SBB 20T2600	29	5SBD 05T2600	29	5SBL 20T2600	30	5SBE 05T2600	30
2700	±100			5SBB 20T2700	29	5SBD 05T2700	29	5SBL 20T2700	30	5SBE 05T2700	30
2800	±100			5SBB 20T2800	29	5SBD 05T2800	29	5SBL 20T2800	30	5SBE 05T2800	30
2900	±100			5SBB 20T2900	29	5SBD 05T2900	29	5SBL 20T2900	30	5SBE 05T2900	30
3000	±100			5SBB 20T3000	29	5SBD 05T3000	29	5SBL 20T3000	30	5SBE 05T3000	30
3200	±100			5SBB 20T3200	29						
3400	±100			5SBB 20T3400	29						
3600	±100			5SBB 20T3600	29						
3800	±100			5SBB 20T3800	29						
4000	±100			5SBB 20T4000	29						

* See page 16

Silicon Surge Voltage Suppressors

- Diffused pnp structure.
- Symmetric blocking characteristic with avalanche breakdown capability.
- Effective protection against repetitive and non-repetitive overvoltages.
- Suitable for thyristors, transistors and IGBTs.

- Diffundierte pnp-Struktur.
- Symmetrische Sperrkennlinie mit kontrollierter Avalanche-Charakteristik.
- Effektiver Schutz gegen repetitive und transiente Überspannungen.
- Geeignet für den Schutz von Thyristoren, Transistoren und IGBTs.

- 拡散pnp構造
- アバランシェ降伏効果を応用した双方向阻止特性
- 繰返／非繰返過電圧に対する効果的保護
- サイリスタ、トランジスタ、IGBTを過電圧から保護

Type and ordering number	V_R	Tol.	IRM for base width				T_{VJM}	R_{thJH}	Fig.
	T_{VJ}= 60 °C	T_{VJ}= 60 °C	10 µs	100 µs	1 ms	10 ms			(Page 16)
	V	V	A	A	A	A	°C	K/kW	
5SSA 50R0500	500	±60	500	135	33	7.5	125	600	31
5SSA 50R0600	600	±60	500	135	33	7.5	125	600	31
5SSA 38R0700	700	±60	380	100	25	4.5	125	600	31
5SSA 38R0800	800	±60	380	100	25	4.5	125	600	31
5SSA 30R0900	900	±60	300	80	21	4.0	125	600	31
5SSA 30R1000	1000	±60	300	80	21	4.0	125	600	31
5SSA 26R1100	1100	±60	260	67	18	3.6	125	600	31
5SSA 26R1200	1200	±60	260	67	18	3.6	125	600	31
5SSA 23R1300	1300	±60	230	58	15	3.4	125	600	31
5SSA 23R1400	1400	±60	230	58	15	3.4	125	600	31
5SSA 20R1500	1500	±60	200	50	13	3.0	125	600	31
5SSA 20R1600	1600	±60	200	50	13	3.0	125	600	31
5SSB 50X0400	450	±50	500	135	33	7.5	125	500	32
5SSB 50X0500	550	±50	500	135	33	7.5	125	500	32
5SSB 38X0600	650	±50	380	100	25	4.5	125	500	32
5SSB 38X0700	750	±50	380	100	25	4.5	125	500	32
5SSB 30X0800	850	±50	300	80	21	4.0	125	500	32
5SSB 30X0900	950	±50	300	80	21	4.0	125	500	32
5SSB 26X1000	1050	±50	260	67	18	3.6	125	500	32
5SSB 26X1100	1150	±50	260	67	18	3.6	125	500	32
5SSB 23X1200	1250	±50	230	58	15	3.4	125	500	32
5SSB 23X1300	1350	±50	230	58	15	3.4	125	500	32
5SSB 20X1400	1450	±50	200	50	13	3.0	125	500	32
5SSB 20X1500	1550	±50	200	50	13	3.0	125	500	32
5SSB 30X1600	1650	±50	300	80	21	4.0	125	250	32
5SSB 30X1700	1750	±50	300	80	21	4.0	125	250	32
5SSB 30X1800	1850	±50	300	80	21	4.0	125	250	32
5SSB 30X1900	1950	±50	300	80	21	4.0	125	250	32
5SSB 26X2000	2050	±50	260	67	18	3.6	125	250	32
5SSB 26X2100	2150	±50	260	67	18	3.6	125	250	32
5SSB 26X2200	2250	±50	260	67	18	3.6	125	250	32
5SSB 26X2300	2350	±50	260	67	18	3.6	125	250	32
5SSB 23X2400	2450	±50	230	58	15	3.4	125	250	32
5SSB 23X2500	2550	±50	230	58	15	3.4	125	250	32
5SSB 23X2600	2650	±50	230	58	15	3.4	125	250	32
5SSB 23X2700	2750	±50	230	58	15	3.4	125	250	32
5SSB 20X2800	2850	±50	200	50	13	3.0	125	250	32
5SSB 20X2900	2950	±50	200	50	13	3.0	125	250	32
5SSB 20X3000	3050	±50	200	50	13	3.0	125	250	32
5SSB 20X3100	3150	±50	200	50	13	3.0	125	250	32

*I_{RM}: Max. avalanche current for a single sine half wave pulse

For previous part numbers, please refer to cross reference list, page 20.

ABB Semiconductors AG

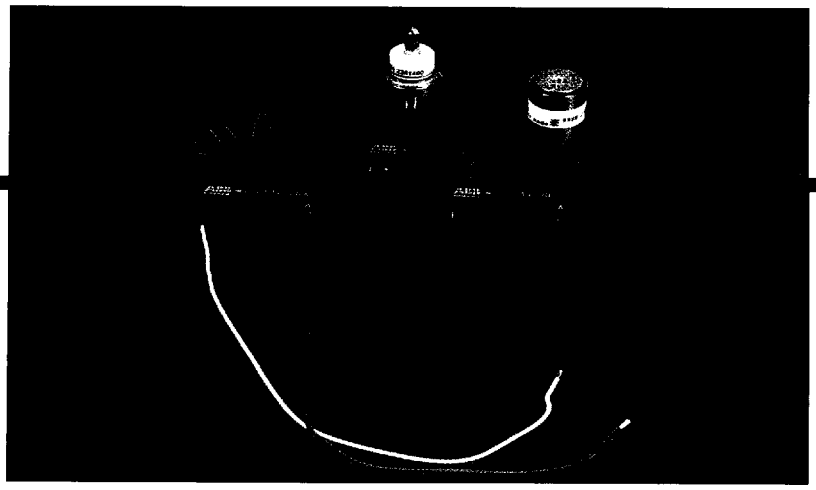


Fig. 28

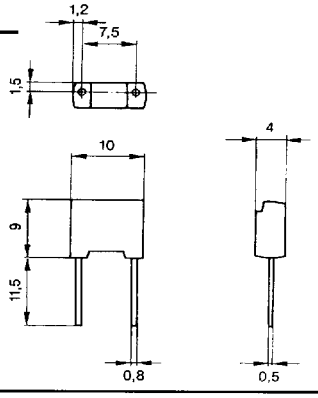


Fig. 29

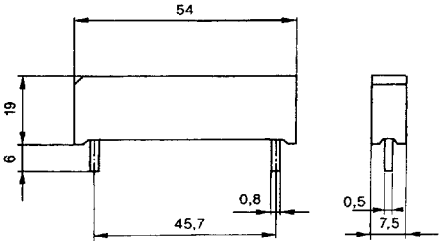


Fig. 30

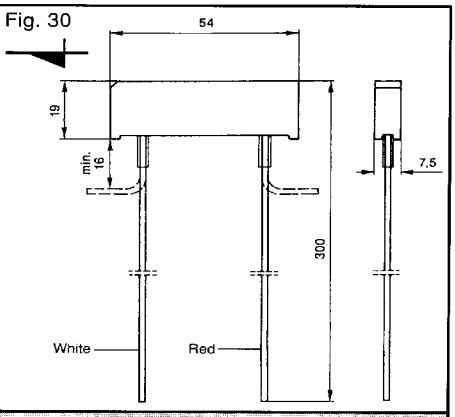


Fig. 31 F

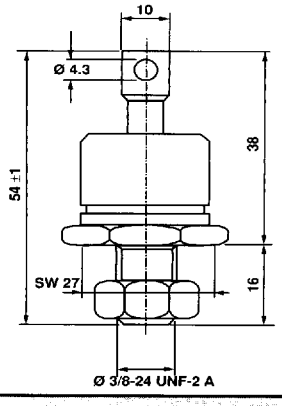
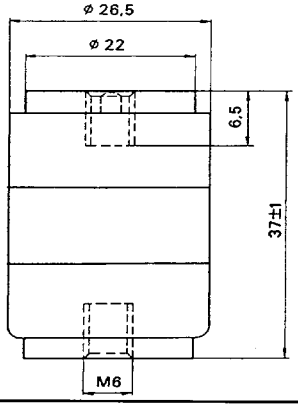


Fig. 32



Protection Devices – Part Numbering Structure and Ordering Code

5SBB 20 T 11 00

Product Group
5SBA = Breakover Diodes, Single elements
5SBB, 5SBD, 5SBL, 5SBE = Breakover diodes, Modules
5SSA, 5SSB = Silicon Surge Voltage Suppressors

Current capability
Breakover Diodes: I_{SM} (100 µs) /10 in A
Silicon Surge Voltage Suppressors: I_{RM} (10 µs) /10 in A

Package Code

Voltage capability
Breakover Diodes: V_{BO} /100 in V
Silicon Surge Voltage Suppressors V_R /100 in V

Standard option

Dimensions in mm.