



# Asymmetric GTO Thyristors

ABB Semiconductors AG

- Patented free-floating silicon technology.
- All GTOs are turn-off tested under maximum ratings.
- Excellent trade-off between on-state and switching losses.

- Patentierter freier Druckkontakt.
- Alle GTOs werden unter Ausschalt-Grenzwerten getestet.
- Ausgezeichnete Optimierung zwischen Durchlass- und Schaltverlusten.

- ・フリーフロート方式シリコンチップ (特許技術)
- ・全数最大定格でスイッチング 検査

Type and ordering number	V <sub>DRM</sub>	V <sub>DC</sub>	V <sub>RRM</sub>	I <sub>TGQM</sub> at C <sub>s</sub>		I <sub>TAVM</sub>	I <sub>TSM</sub>		V <sub>T</sub>	V <sub>T0</sub>	r <sub>T</sub>	T <sub>JM</sub>	R <sub>thJC</sub>	R <sub>thCH</sub>	F <sub>m</sub>	Fig.
							T <sub>C</sub> =85 °C									
						A	μF	A	8.3 ms	10 ms	V	V	mΩ	°C	K/kW	K/kW
<b>Standard types, 2.5 kV Blocking.</b>																
5SGA 15F2502	2500	1400	17	1500	3	600	10.6	10	2.5	1.45	0.70	125	27	8	15	1
5SGA 20H2501	2500	1400	17	2000	4	830	17.0	16	2.8	1.66	0.57	125	17	5	20	2
5SGA 25H2501	2500	1400	17	2500	6	830	17.0	16	3.1	1.66	0.57	125	17	5	20	2
5SGA 30J2502	2500	1400	17	3000	5	960	31.0	30	3.0	1.92	0.36	125	12	3	40	3
<b>Standard types, 4.5 kV Blocking.</b>																
5SGA 20H4502	4500	2200	17	2000	4	715	14	13	3.5	1.72	0.86	125	17	5	20	2
5SGA 30J4505	4500	2200	17	3000	6	1000	26	25	3.5	1.90	0.53	125	12	3	40	3
5SGA 30J4502	4500	2800	17	3000	6	930	25	24	4.0	2.20	0.60	125	12	3	40	3
5SGA 40L4501	4500	2800	17	4000	6	1160	26	25	4.0	2.10	0.47	125	11	3	40	4

# Reverse Conducting GTO Thyristors

- Integrated freewheeling diode.
- Device optimized for low switching losses.
- No stray inductance between GTO and diode.
- Can be driven by conventional gate drive unit.

- Asymmetrischer GTO und Freilaufdiode auf einer Siliziumscheibe.
- Optimierung für niedrige Schaltverluste.
- Keine Streuinduktivität zwischen GTO und Diode.
- Kann mit konventioneller Gate-Ansteuerung eingesetzt werden.

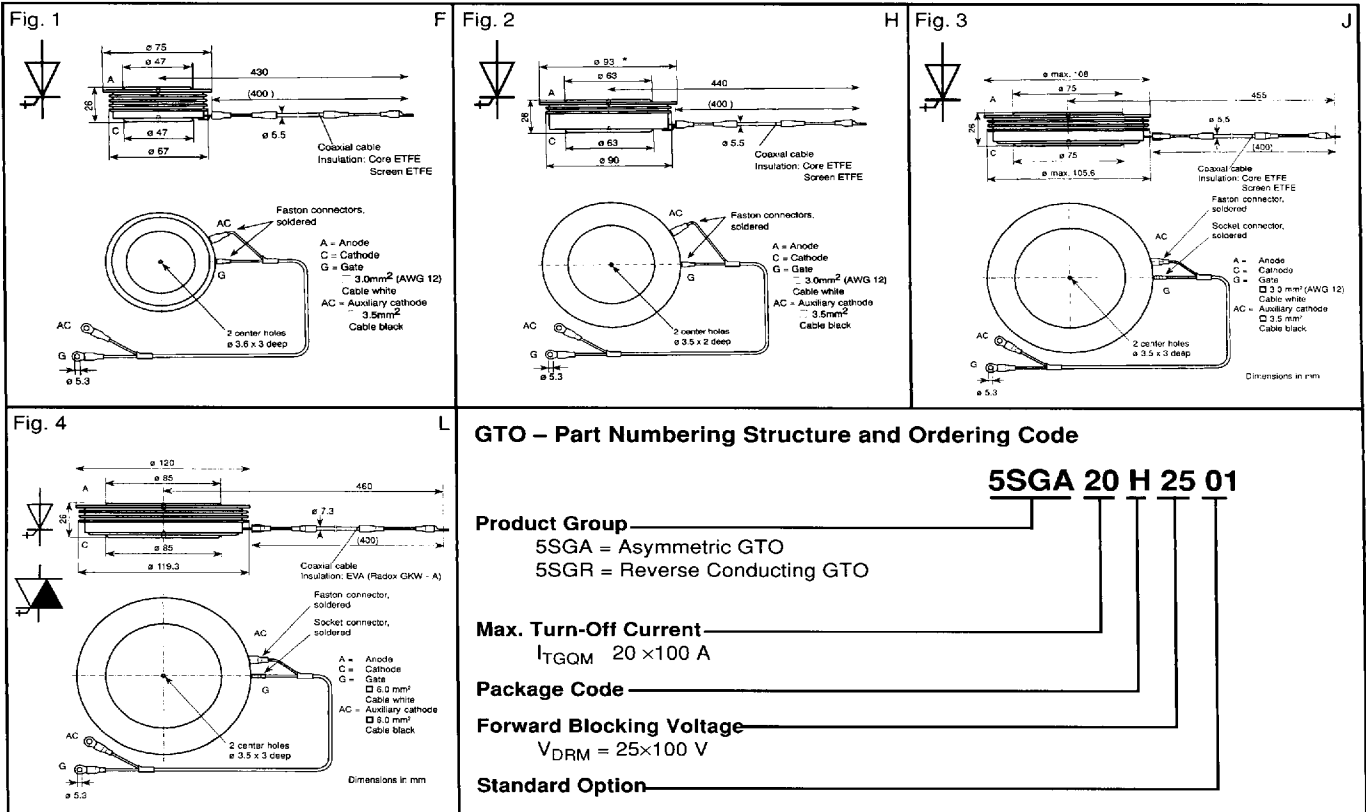
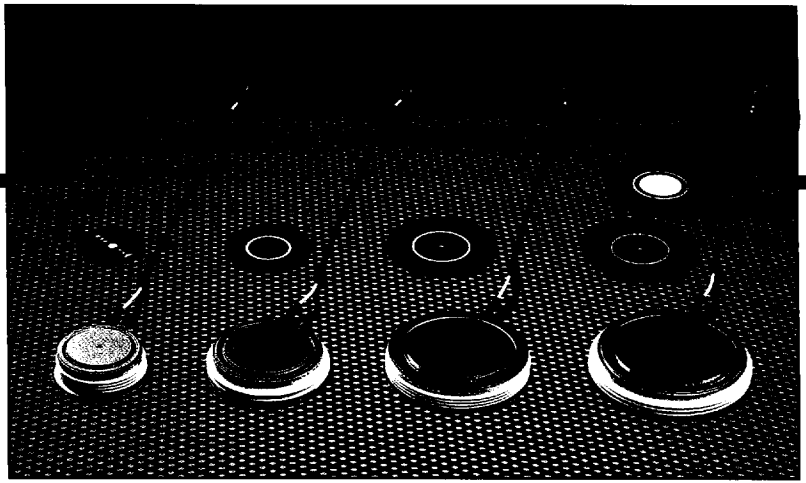
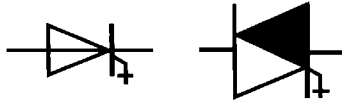
- ・一方向性GTOとマッチングしたフリーホイール ダイオードの一体化チップの採用
- ・低スイッチング ロス特性
- ・GTO/ダイオード間に浮遊インダクタンスが発生しない
- ・通常のゲート・ユニットで駆動可

Type and ordering number	V <sub>DRM</sub>	V <sub>DC</sub>	I <sub>TGQM</sub> at C <sub>s</sub>		I <sub>TAVM</sub>	I <sub>TSM</sub>		V <sub>T</sub>	V <sub>T0</sub>	r <sub>T</sub>	T <sub>JM</sub>	R <sub>thJC</sub>	R <sub>thCH</sub>	F <sub>m</sub>	Fig.	
						T <sub>C</sub> =85 °C										I <sub>TGQM</sub>
					A	μF	A	8.3 ms	10 ms	V	V	mΩ	°C	K/kW	K/kW	
5SGR 30L4501	4500	2800	3000	6	790	26	25	4.0	2.2	0.6	125	15	30	3	40	4
GTO part					700	26	25	3.5	1.9	0.8						
Diode part																

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

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## Fast Recovery Diode Recommendations for GTOs

For all GTO Types ABB also offer the matched freewheeling and snubber diodes. Actual choice of diode depends on specific application. For technical data on the diodes please refer to the pages 6 - 7.

GTO Type	Recommended freewheeling diodes	Recommended snubber diodes
5SGA 15F2502	5SDF 05D2501	5SDF 01R2501
5SGA 20H2501	5SDF 05D2501	5SDF 05D2501
5SGA 25H2501	5SDF 05D2501	5SDF 05D2501
5SGA 20H4502	5SDF 03D4501	5SDF 03D4501
5SGA 30J2502	5SDF 11F2501	5SDF 05D2501
5SGA 30J4502	5SDF 07F4501	5SDF 03D4501
5SGA 30J4505	5SDF 07F4501	5SDF 03D4501
5SGA 40L4501	5SDF 13H4501	5SDF 03D4501
5SGR 30L4501	N/A	5SDF 05D4501

Dimensions in mm.