V_{DRM} = 4.5 kV
V_{RRM} = 18 V
I_{PULSE} = 110 kA
V_{Dcmax} = 2.8 kV

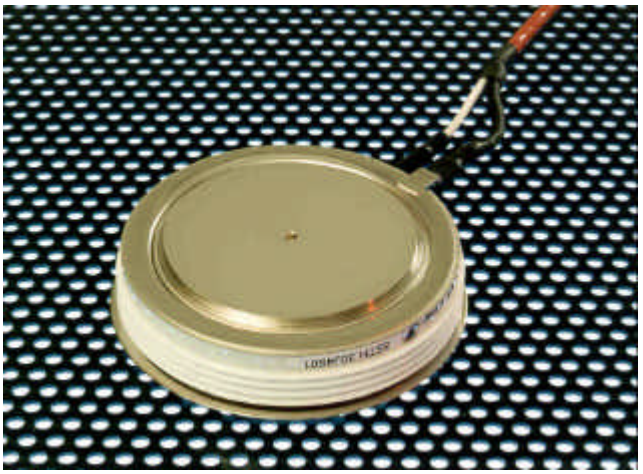
High Current High di/dt Switch for Pulsed Power Applications

5STH 30J4501

Doc. No. 5SYA 08PP-01 Oct. 01

Features

- **Asymmetric Design**
- **For Single or Repetitve Pulse Applications**
- **Very High di/dt Capability**
- **Free Floating Silicon Technology**
- **Glazed Ceramic Presspack Housing**
- **High Interdigitated Gate Stucture**
- **Optimized as Closing Switch**
- **High Reliability**



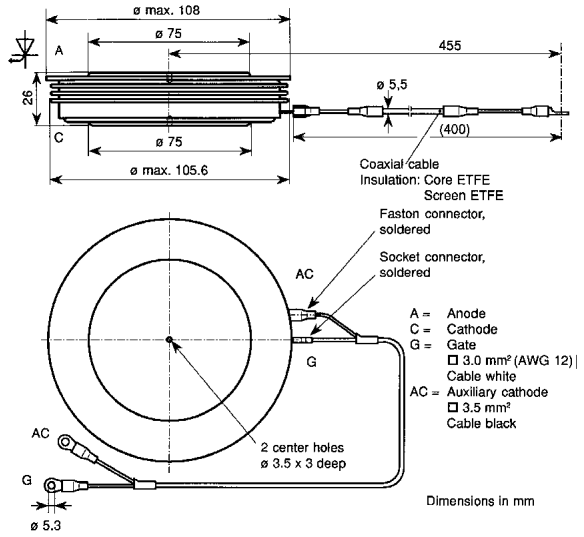
Electrical Data

V_{DRM}	Repetitive peak of-state voltage	4.5 kV	Tj = 125°C
V_{RRM}	Repetitive reverse blocking voltage	18 V	Tj = 125°C
V_{DC}	Permanent DC voltage for 100 FIT failure rate	2.8 kV	At $T_j \leq 125$ °C. Ambient cosmic radiation at sea level in open air.
I_{PULSE}	Max. Pulse Current	110 kA	Half sine wave, Tj ≤ 50°C, tp ≤ 250 µs
dt/dt	Max. current rate of rise	20 kA/µs	1 Hz
V_{GT}	Max. Gate trigger voltage	4.0 V	diG/dt (min) 100 A/µs Tj = 25°
I_{GT}	Recomm. Gate trigger current	120 A	T = 20µs
I^2t	Limiting load integral	1.5 x10^6 A^2s	Tp = 250 µs, Tj = 50°C
V_{T0}	Threshold voltage	1.24 V	Tj = 50°C / Tj = 125°C
r_T	Slope resistance	0.28 mΩ 0.30 mΩ	Tj = 50°C Tj = 125°C
V_T	Voltage Drop	2.08 V 2.15 V	Tj = 50°C, IT = 3000A Tj = 125°C, IT = 3000A
T_{Don}	Turn-on delay time	≤ 0.9 µs	

Pulse Power Device 5STH 30J4501

Mechanical Data

F_M	Mounting force	min.	36	kN
		max.	44	kN
D_p	Pole-piece diameter		75	mm
H	Housing thickness		26	mm
M	Weight		1,5	kg
D_S	Surface creepage distance		33	mm
D_a	Air strike distance		15	mm



Thermal Data

T_A	Ambient Temp.	min.	- 40	°C
		max.	125	°C
T_{vjm}	Max. Junction Temperature		125	°C
R_{thJC}	Thermal resistance junction - case		0.022	K/W (anode side cooling)
			0.027	K/W (cathode side cooling)
			0.012	K/W (double side cooling)
R_{thCH}	Thermal resistance case – heatsink		0.006	K/W (one side cooled)
			0.003	K/W (double side cooled)

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