Switching Spark Gap

SSG with lead wires

Series/Type: **FS03X-1GS**
Ordering code: **B88069X6000T502**
Version/Date: Issue 03 / 2006-01-12

Bosch ID-No. 1 237 320 004

Features	Applications
▪ Extremely long life time ▪ Stable performance over life ▪ Insensitive performance against variations in temperature ▪ Very low switching losses ▪ Very short breakdown time ▪ High reliability by robust design ▪ RoHS compatible	▪ Ignition circuits ▪ High voltage switch

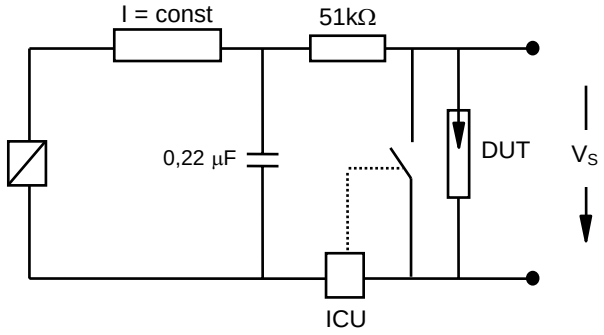
Electrical specifications

Nominal breakdown voltage V_N	400	V
Initial values [2]		
Static breakdown voltage V_S [1]		
First ignition value $V_{S, FTE}$ after 24 hours in darkness	≤ 440	V
Following ignition values $V_{S, FIV}$	360 ... 430	V
Electrical life time [3]		
Breakdown voltage V_B		
First ignition value $V_{B, FTE}$ after 24 hours in darkness	≤ 450	V
Ignition time t_I at V_0 during life	≤ 200	ms
Following ignition values $V_{B, FIV}$	360 ... 440	V
Switching operations in total	100 000	Ignitions
at – 40 °C	10 000	Ignitions
at + 25 °C	40 000	Ignitions
at + 125°C	50 000	Ignitions
Test circuit parameters		
Open circuit voltage V_0	449 ... 450	V
Loading resistance R	61 ... 75	kΩ
Discharge capacitance C	423 ...517	nF
Inductance L	1.5 ... 2.5	µH
Discharge peak current I_P, 8 half cycles, 850 V	max. 250	A
General technical data		
Insulation resistance at 100 V	> 10	MΩ
Early ignition values below 722 V	≤ 1	%
Breakdown time	≤ 50	ns
Maximum switching frequency	100	Hz
Maximum loading current	40	mA
Weight	~ 2	g
Marking, blue positive additional blue dot on ceramic	**EPCOS 400 WWY O** 400 - Nominal voltage WW - Calendar week of production Y - Year of production O - Non radioactive	

1) At delivery AQL 0,65 level II, DIN ISO 2859
2) Fig. 1 and 2
3) Fig. 3 and 4

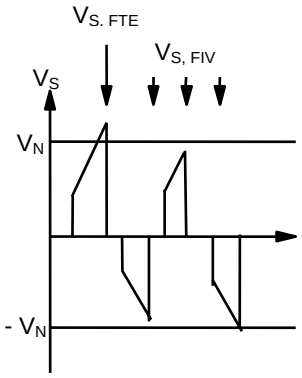
Figures

Fig. 1: QC- test circuit (100% outgoing inspection)



DUT device under test
ICU ignition control unit (sensitivity 10 ... 30 µA)
Discharge current 10 – 20 mA

Fig. 2: Explanation of measurands



$dV_S/dt \sim dV_N/dt$

Fig. 3: QC- test circuit (sampling inspection at 25 °C)

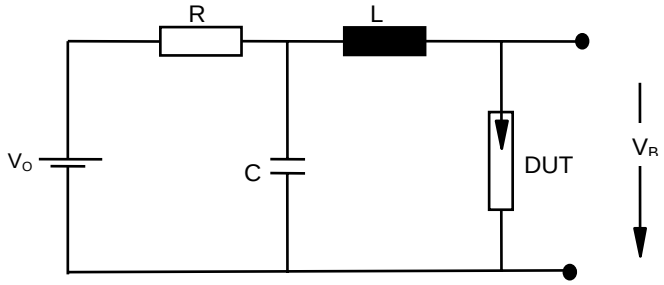
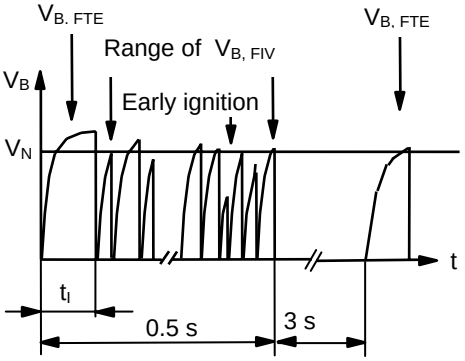
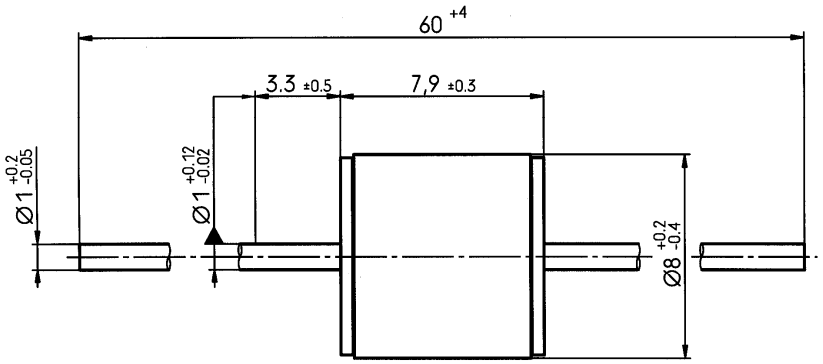


Fig. 4: Explanation of measurands



Dimensional Drawing



Not to scale

Dimensions in mm

Non controlled document

Basic material of wires: Cu-OF

Surface of wires:
1) silver-plated (6 ±3)µm
2) tin-plated (25 ±20) µm

Cautions and warnings

- Switching spark gaps may be used only within their specified values.
- Damaged switching spark gaps must not be re-used.

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