Switching spark gap

SSG with lead wires

Series/Type: **FS04X-1JMG**
Ordering code: **B88069X0410T502**
Version/Date: Issue 06 / 2009-06-29

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

Electrical specifications

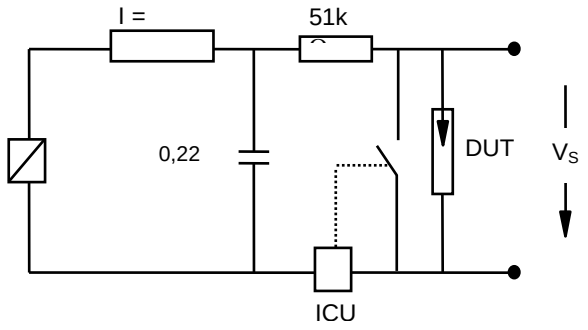
Nominal breakdown voltage V_N		400	V
Initial values			
Static breakdown voltage V_S [1) 2)]			
First ignition value $V_{S, FTE}$ after 24 hours in darkness		≤ 460	V
Following ignition values (selection limits)		360 ... 420	V
Following ignition values $V_{S, FIV}$		350 ... 430	V
Breakdown voltage V_B (measuring time 200 ms) [4)]			
First ignition value $V_{B, FTE}$		≤ 460	V
Following ignition values $V_{B, FIV}$		340 ... 460	V
Electrical life time [3)]			
Breakdown voltage V_B			
First ignition value $V_{B, FTE}$ initial after 24 hours in darkness		≤ 460	V
First ignition value $V_{B, FTE}$ after 24 hours in darkness		≤ 500	V
Following ignition values $V_{B, FIV}$		340 ... 460	V
Switching operations			
at - 40 °C	Ignition time t_I ≤ 60 ms [5)]	60 000	Ignitions
at - 40 °C	Ignition time t_I ≤ 200 ms	100 000	Ignitions
at +25 °C	Ignition time t_I ≤ 60 ms	100 000	Ignitions
at +25 °C	Ignition time t_I ≤ 200 ms	200 000	Ignitions
at +125 °C	Ignition time t_I ≤ 60 ms	200 000	Ignitions
Test circuit parameters			
Open circuit voltage V_0		500	V
Loading resistance R		10	kΩ
Discharge capacitance C		680	nF
Inductance L		0.5	µH
Discharge peak current I_P		~ 500	A

General technical data		
Insulation resistance at 100 V	> 100	MΩ
Early ignition values below 340 V	≤ 2	%
Breakdown time	≤ 50	ns
Maximum switching frequency	200	Hz
Maximum loading current	50	mA
Weight	~ 2	g
Marking, blue positive	**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) Page 2, Fig. 1 and 2
3) Page 2, Fig. 3 and 4
4) Page 2, Fig. 3 and 4, 100 % outgoing inspection
5) After storage in darkness for 30 days

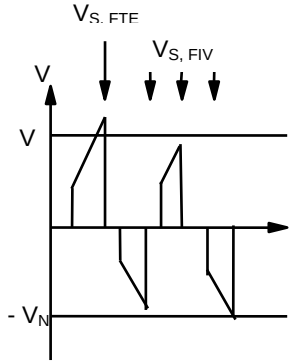
Figures

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

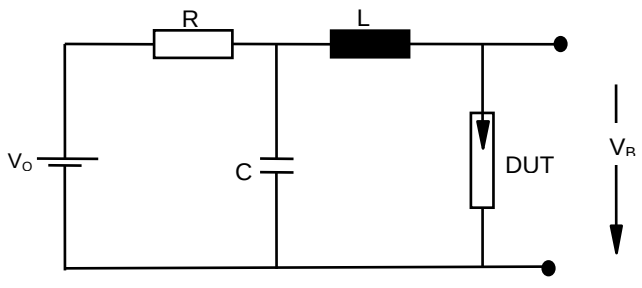
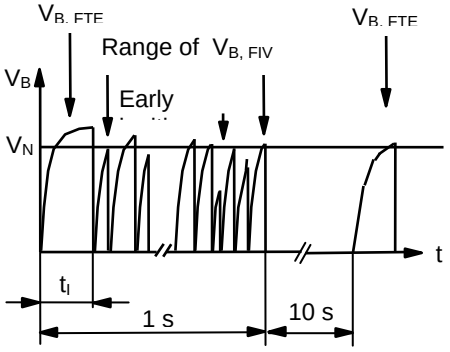
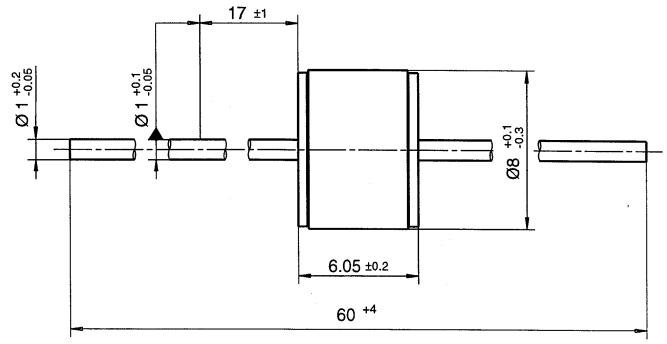


Fig. 4: Explanation of measurands



Dimensional drawing



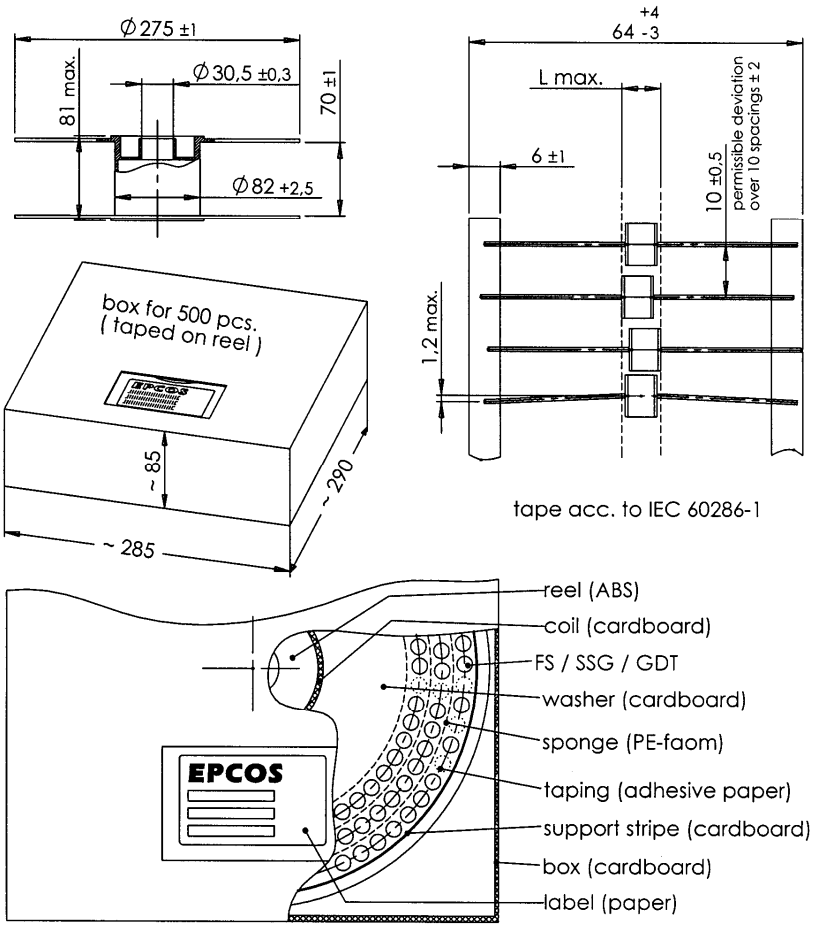
Not to scale

Dimensions in mm

Non controlled document

Packing advice

T502 = 500 pcs on tape and reel



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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