5SSB

Old part no. S 830

Silicon Surge Voltage Suppressor

Properties

- Diffused pnp – Si structure
- hermetically sealed in metal-ceramic package
- Available to protect power devices (thyristors) against small and medium power surges (e.g. 200 kW over 10 µs)

Applications

- Traction, HVDC transmission, generator excitation,
- transmitter power supply, high power motor controls

Mechanical Data

M_u	**Mounting torque**	**3.5**	**Nm**
m	**Weight**	**115**	**g**
D_S	**Surface creepage distance**	**11**	**mm**
D_a	**Air strike distance**	**11**	**mm**

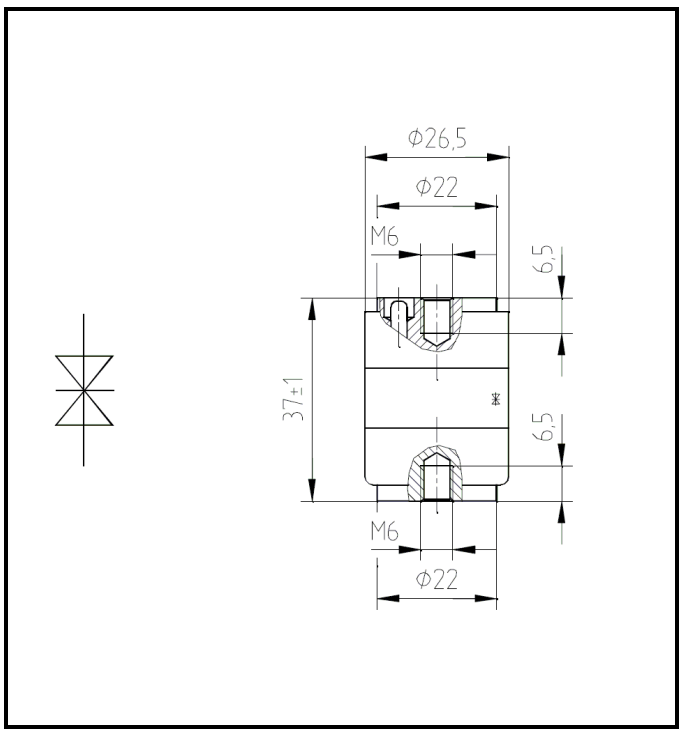

Fig. 1 Case

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type	Old part no.	V_R (V)	Thyristor V_{DRM} (V) V_{RRM} (V)	I_{RM} (A) for base width				I_{RRM} (A)	P_{RAV} (W)	P_{RSM} (kW)
				1 x 10 µs	1 x 100 µs	1 x 1 ms	1 x 10 ms	1 x 100 µs		1 x 10 µs
5SSB 50X0400	S 830-500-04	450 ± 50	500	500	135	33	7.5	70	30*	350
5SSB 50X0500	S 830-500-05	550 ± 50	600	500	135	33	7.5	70	30*	350
5SSB 38X0600	S 830-380-06	650 ± 50	700	380	100	25	4.5	60	30*	350
5SSB 38X0700	S 830-380-07	750 ± 50	800	380	100	25	4.5	60	30*	350
5SSB 30X0800	S 830-300-08	850 ± 50	900	300	80	21	4	50	30*	350
5SSB 30X0900	S 830-300-09	950 ± 50	1000	300	80	21	4	50	30*	350
5SSB 26X1000	S 830-260-10	1050 ± 50	1100	260	67	18	3.6	41	30*	350
5SSB 26X1100	S 830-260-11	1150 ± 50	1200	260	67	18	3.6	41	30*	350
5SSB 23X1200	S 830-230-12	1250 ± 50	1300	230	58	15	3.4	35	30*	350
5SSB 23X1300	S 830-230-13	1350 ± 50	1400	230	58	15	3.4	35	30*	350
5SSB 20X1400	S 830-200-14	1450 ± 50	1500	200	50	13	3	30	30*	350
5SSB 20X1500	S 830-200-15	1550 ± 50	1600	200	50	13	3	30	30*	350
5SSB 30X1600	S 830-300-16	1650 ± 50	1700	300	80	21	4	50	60**	700
5SSB 30X1700	S 830-300-17	1750 ± 50	1800	300	80	21	4	50	60**	700
5SSB 30X1800	S 830-300-18	1850 ± 50	1900	300	80	21	4	50	60**	700
5SSB 30X1900	S 830-300-19	1950 ± 50	2000	300	80	21	4	50	60**	700
5SSB 26X2000	S 830-260-20	2050 ± 50	2100	260	67	18	3.6	41	60**	700
5SSB 26X2100	S 830-260-21	2150 ± 50	2200	260	67	18	3.6	41	60**	700
5SSB 26X2200	S 830-260-22	2250 ± 50	2300	260	67	18	3.6	41	60**	700
5SSB 26X2300	S 830-260-23	2350 ± 50	2400	260	67	18	3.6	41	60**	700
5SSB 23X2400	S 830-230-24	2450 ± 50	2500	230	58	15	3.4	35	60**	700
5SSB 23X2500	S 830-230-25	2550 ± 50	2600	230	58	15	3.4	35	60**	700
5SSB 23X2600	S 830-230-26	2650 ± 50	2700	230	58	15	3.4	35	60**	700
5SSB 23X2700	S 830-230-27	2750 ± 50	2800	230	58	15	3.4	35	60**	700
5SSB 20X2800	S 830-200-28	2850 ± 50	2900	200	50	13	3	30	60**	700
5SSB 20X2900	S 830-200-29	2950 ± 50	3000	200	50	13	3	30	60**	700

Notes:
V_R ... Symmetrical avalanche voltage at I_A = 20 A, t_p = 10 µs, T_{vj} = 60 °C
I_{RM} ... Max. avalanche current for a single sine half wave pulse
I_{RRM} . . . Max. avalanche current for 10 pulses of 100 µs width, repetition frequency 50 Hz
*P_{RAV} ... Admissible continuous losses at R_{thja} < 1 K/W, T_a < 60 °C, * single side / ** double side cooling*
P_{RSM} . . . peak power losses for a single 10 µs current surge
T_{vj} . . . the initial virtual junction temperature is 60°C

Maximum Ratings		*Maximum Limits*	*Unit*
T_{jmin} - T_{jmax}	**Operating temperature range**	**-40 ÷ 125**	**°C**
T_{STG}	**Storage temperature range**	**-40 ÷ 125**	**°C**
	Admissible acceleration (vibration)	**10**	**m/s^2**

Characteristics for types 5SSB 50X0400 .. 5SSB 20X1500		*Value*		*Unit*
		typ	*max*	
V_R	**Dependence of avalanche voltage V_R on junction temperature** *Note 1*	$V_R(T) = V_{R0}[1 + 1.1\times10^{-3}(T - 60\ °C)]$		**V**
C_j	**Junction capacitance** $V_R = 0$ V, $T_j = 60$ °C	**1 100**		**pF**
R_{thjh}	**Thermal resistance junction to heatsink** *Note 2*		**0.5**	**K/W**

Characteristics for types 5SSB 30X1600 .. 5SSB 20X3100		*Value*		*Unit*
		typ	*max*	
V_R	**Dependence of avalanche voltage V_R on junction temperature** *Note 1*	$V_R(T) = V_{R0}[1 + 1.1\times10^{-3}(T - 60\ °C)]$		**V**
C_j	**Junction capacitance** $V_R = 0$ V, $T_j = 60$ °C	**550**		**pF**
R_{thjh}	**Thermal resistance junction to heatsink**		**0.25**	**K/W**

Note 1: $V_R(60°C) = V_{RO}$; $V_R(25°C) = 0{,}96 \times V_{RO}$; $V_R(125°C) = 1{,}07 \times V_{RO}$
Note 2: For single sided cooling the side carrying the serial number shall be cooled.

Notes: