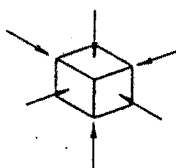


SRRM-S-501

SRRM PRODUCT SPECIFICATIONS

⑤

Items		Test conditions	Criterion																																								
5.8	Mechanical shock	Switch shall be measured after following test. (1) Mounting method : Normal mounting method (2) Acceleration : 490m/s^2 $\pm 500\text{m/s}^2$ (3) Duration : 11ms (4) Test direction : 6 directions  (5) Number of shock : 3 times per direction (18 times in total)	Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Operating torque (Item 5.1) : Within specified value. Shall be free from mechanical abnormalities.																																								
5.9	Solderability	Switch shall be checked after following test. (1) Solder : H63A (JIS Z 3282) (2) Flux : Rosin flux (JIS K 5902) having a nominal composition of 25% solids by weight of water white rosin in methyl alcohol (JIS K 1501)solution. (3) Soldering temperature : $230\pm 5^\circ\text{C}$ Immersing time : 3 ± 0.5 s Flux immersing time shall be 5~10 seconds in normal temperature. (4) Immersion depth : Immersion depth shall be at copper plating portion for P.C.B. terminal after mounting. Thickness of P.C. board : 1.6mm Immersion depth shall be at wiring portion of lead wire for lead wire terminal.	More than 75% of immersed part shall be covered with solder.																																								
5.10	Soldering heat resistance	Switch shall be measured after following test. (1) Solder : H63A (JIS Z 3282) (2) Flux : Rosin flux (JIS K 5902) having a nominal composition of 10% solids by weight of water white rosin in methyl alcohol (JIS K 1501)solution. (3) Temperature and immersing time <table border="1"><thead><tr><th></th><th>Temperature ($^\circ\text{C}$)</th><th>Time (s)</th></tr></thead><tbody><tr><td>Dip soldering</td><td>260 ± 5</td><td>10 ± 1</td></tr><tr><td>Manual soldering</td><td>350 ± 10</td><td>3 ± 1</td></tr></tbody></table> (4) Immersion depth : Immersion depth shall be at copper plating portion for P.C.B. terminal after mounting. Thickness of P.C. board (Single sided copper clad P.C.B.) : 1.6mm Immersion depth shall be <u>3</u> mm from the tip of terminal for lead wire terminal.		Temperature ($^\circ\text{C}$)	Time (s)	Dip soldering	260 ± 5	10 ± 1	Manual soldering	350 ± 10	3 ± 1	No abnormalities shall be recognized in appearance. The electrical performance requirements specified in item 4 shall be satisfied.																															
	Temperature ($^\circ\text{C}$)	Time (s)																																									
Dip soldering	260 ± 5	10 ± 1																																									
Manual soldering	350 ± 10	3 ± 1																																									
6. Durability																																											
Items		Test conditions	Criterion																																								
6.1	Operating life without load	10,000 cycles of operation shall be performed continuously at a rate of $1\sim 1.2\pi\text{rad/s}$ without load.	Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>100</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within ± 30 % of specified value. No abnormalities shall be recognized in appearance and construction.																																								
6.2	Operating life with load	10,000 cycles of operation shall be performed continuously at a rate of $1\sim 1.2\pi\text{rad/s}$ with load of <u>0.25</u> A, <u>30</u> V DC.	Contact resistance (Item 4.1) : <u>60</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>100</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within ± 30 % of specified value. No abnormalities shall be recognized in appearance and construction.																																								
<table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>APPD</td><td>CHKD.</td><td>DSGD.</td><td>TITLE</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td><i>M.</i></td><td><i>S.</i></td><td><i>gen. 25.93</i></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td><i>Kuma</i></td><td><i>Takashi</i></td><td><i>Suzuki</i></td><td>DRAWING NO.</td></tr><tr><td>PAGE</td><td>SYMB</td><td>DATE</td><td>APPD</td><td>CHKD</td><td>DSGD</td><td></td><td></td><td></td><td></td></tr></table>										APPD	CHKD.	DSGD.	TITLE							<i>M.</i>	<i>S.</i>	<i>gen. 25.93</i>								<i>Kuma</i>	<i>Takashi</i>	<i>Suzuki</i>	DRAWING NO.	PAGE	SYMB	DATE	APPD	CHKD	DSGD				
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ALPS ELECTRIC CO., LTD.

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SRRM-S-501		SRRM PRODUCT SPECIFICATIONS				⑤	
7. Weather proof							
Items	Test conditions				Criterion		
7.1 Cold proof	After testing at $-20\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and then measurement shall be made within 1 hour. Water drops shall be removed.				Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>100</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within $\pm \frac{10}{50}$ % of specified value. No abnormalities shall be recognized in appearance and construction.		
7.2 Dry heat	After testing at $85\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that.				Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>100</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within $\pm \frac{10}{50}$ % of specified value. No abnormalities shall be recognized in appearance and construction.		
7.3 Damp heat	After testing at $40\pm 2^{\circ}\text{C}$ and $90\sim 95\text{RH}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be removed.				Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>10</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within $\pm \frac{10}{50}$ % of specified value. No abnormalities shall be recognized in appearance and construction.		
7.4 Salt mist	Switch shall be checked after following test. (1) Temperature : $35\pm 2^{\circ}\text{C}$ (2) Salt solution : $5\pm 1\%$ (Solids by weight) (3) Duration : 24 ± 1 h After the test, salt deposit shall be removed in running water.				No remarkable corrosion shall be recognized in metal part.		
7.5 Temperature cycling	After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be removed.				Contact resistance (Item 4.1) : <u>40</u> $\text{m}\Omega$ MAX Insulation resistance (Item 4.2) : <u>100</u> $\text{M}\Omega$ MIN Voltage proof (Item 4.3) : Apply <u>500</u> V AC for 1 minute. No dielectric breakdown shall occur. Operating torque (Item 5.1) : Within $\pm \frac{10}{50}$ % of specified value. No abnormalities shall be recognized in appearance and construction.		
Precaution in use 1. Note that if the load is applied to the terminals during soldering they might suffer deformation and defects in electrical performance. 2. Use of water-soluble soldering flux shall be avoided because it may cause corrosion of the switch. 3. In case that DC voltage is constantly applied on the switch : In that condition the switch may be damaged and degenerated on account of irregular migration of silver portion.							
				APPD.	CHKD.	DSGD.	TITLE
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				Kine	Takashi	Suzuki	
PAGE	SYMB	DATE	APPD	CHKD	DSGD	DRAWING NO.	
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