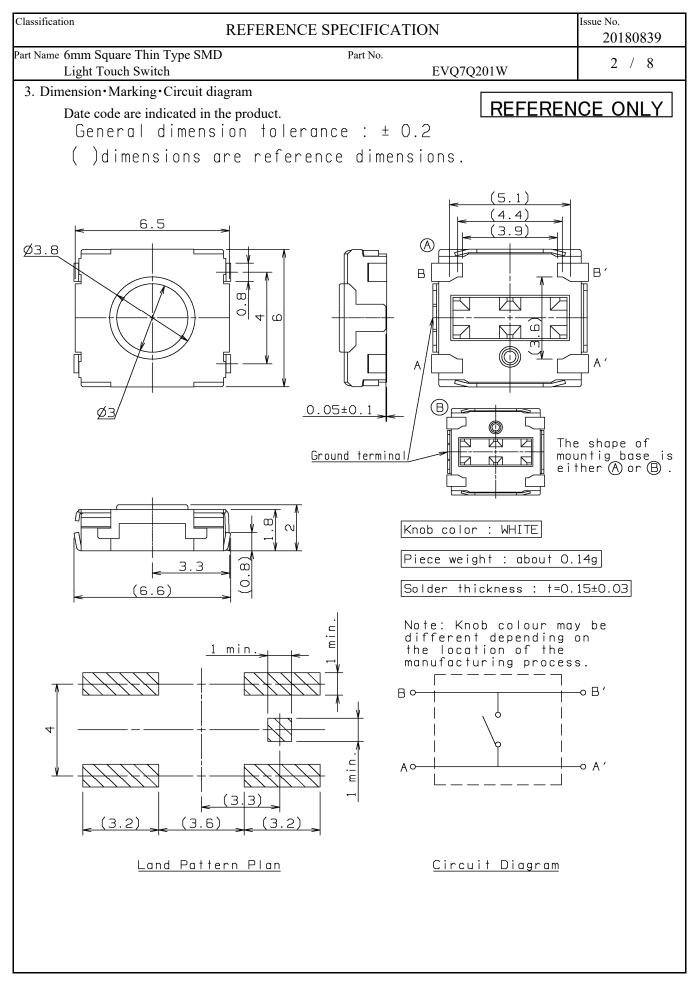
Classification REFE	RENCE SPECIFICATION	Issue No. 20180839
Part Name 6mm Square Thin Type SMD Light Touch Switch	Part No. EVQ7Q20	1 / 8
1. Notification Items		
1.1 Law and the regulation which are applie	ed	
 Ozone depleting substances specified by process of the material used in this prod 		the manufacturing
 This product complies with RoHS Direct 		n hazardaus substances
in electrical and electronic equipment)		n nazardous substances
③ The materials used in this product conta		Existing Chemical Substances
_	-	-
-	hemical Substances and Regulation of The	
④ Permission must be obtained from the "Foreign Exchange and Foreign Trad	le Law" is to be exported or taken out of	c c
1.2 Application Limits		
The following shall be described for saf	ety precaution:	
[Limitation of Application]		
(a) This product has been designed and	l manufactured for general electronic de	evices,
such as home electronics, office equ	uipment, information devices and comm	nunication devices.
(1) This product is not intended for u	se in more sophisticated applications w	hich require a higher safety standard
and more reliability, including if	a failure or malfunction may cause bodi	ily injury or property damage.
(2) If the product is intended for more	re sophisticated applications prior appro	oval must be obtained.
Such applications shall include, b	out are not limited to, the following: air	craft equipment,
aerospace equipment, disaster pre	evention equipment, crime prevention ec	quipment, medical equipment,
transportation equipment (such	as vehicles, trains, ships, etc.), and inf	formation processing equipment
that are highly publicized, and c	other equivalent equipment.	
(b) Regardless of its applications, in a	in event that this product is used for ea	quipment with high safety
standards, protective circuits or b	ack up circuits must be used and safet	y tests must be performed.
1.3 Handling of reference specification.		
	pecification are subjected to change with	
prior notifications,please request us a before using.	formal specification again for your inve	estigations
1.4 Manufacturing Sites		
The country of manufacture : Malaysia	Panasonic Industrial Devices Malaysia Se	dn. Bhd.
2. Summary		
2.1 This specifications applies to the follow	ing types of switch.	
Push-ON type S.P.S.T		
2.2 This specifications is a constituent docu		d between
your company and Panasonic Corporation	on.	
2.3 Items not particularly specified in this s	pecifications shall be in conformance w	rith JIS Standards.
<u>l</u>	Panasonic Corporation	



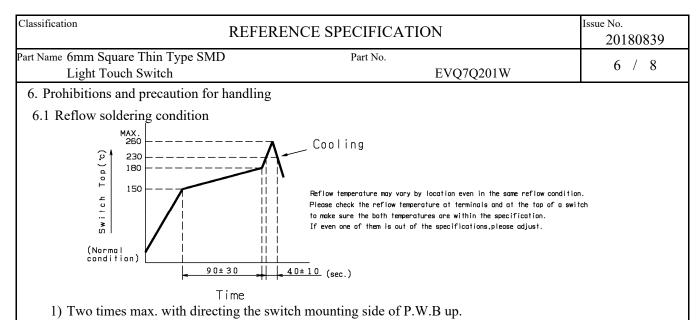
Panasonic Corporation

Classification REFERENCE SPECIFICATION		
Part Name 6mm Square Thin Type SMD Light Touch Switch	Part No.	3 / 8
	EVQ7Q20	W
4. General specification		10
4.1 Switch rating	DC 15 V 20 mA(max.) DC	2 V 10 μA(min.)
4.2 Operation temperature range	-40 \sim + 85 °C	
4.3 Preservative temperature range	Single condition : - 40 \sim + 85	5 °C
	Taping condition : - 20 \sim + 60) °C
• • •	, the test and measurements shall be carried out	as follows.
	ure : 5 \sim 35 °C	
•	: 45 \sim 85 %	
Atmospheric press	sure : $86 \sim 106$ kPa	
However, if doubt arises or	n the decision based on the measured values	
under the above-mentioned	l conditions, the following conditions shall be e	employed.
Ambient temperatu	ure : $20 \pm 2 $ °C	
Relative humidity	: $65 \pm 5 \%$	
Atmospheric press	sure : $86 \sim 106$ kPa	
5. Performance 5.1 Electrical characteristics		
No. ITEM	TEST CONDITION	PERFORMANCE
5.1.1 Contact Push forc	e : {Operation force} × 2	100 m Ω max.

No.	ITEM	TEST CONDITION	PERFORMANCE	
5.1.1	Contact	Push force:{Operation force} $\times 2$	100 m Ω max.	
	resistance	Measurement tool : Contact resistance meter		
		(Capable of 10 μ A \sim 10 mA)		
5.1.2	Insulation	DC 100 V (Between terminals)	100 MΩ min.	
	resistance			
5.1.3	Withstand	AC 250 V for 1 minute. (Between terminals)	No insulation	
	voltage		destruction	
5.1.4	Bouncing	Operation speed : $3 \sim 4$ times/s	ON	
		D. C. 10V	10 ms max.	
		± 10kΩ≥ ⊕	OFF	
		1mA Oscillo scope	10 ms max.	
		Switch Bouncing Test Circuit		

lassification	n	REFERENCE SPECIFICATION	Issue No. 20180839
Part Name 6mm Square Thin Type SMD Part No. Light Touch Switch EVQ7Q201W			4 / 8
	chanical characteris		
No.	ITEM	TEST CONDITION	PERFORMANCE
5.2.1	Operation force	Push force Return force	Push force $0.8 \stackrel{+}{} \stackrel{0.25}{} N$ Return force
		Stroke>	0.1 N min
5.2.2	Travel to closure	Stroke	0.2 ⁺ 0.1 mm
5.2.3	Push strength	50 N for 60 sec. $\mathbf{F}_{90^{\circ}}$	No damage (Electrical and mechanical
5.2.4	Vibration test	 Amplitude : 1.5 mm Sweep rate : 10-55-10Hz for 1 minute Sweep method : Logarithmic frequency sweep rate Vibration direction : X,Y,Z(3 directions) Time : Each direction 2 hours (Total 6 hours) 	No.5.1 and 5.2.1 to 5.2.2 shall be satisfied.
5.2.5	Soldering heat test	Mount the switch on P.W.B by solder paste.1) Reflow process 2 times. (Refer to section 6.1)2) Standard conditions after test : 1 hours	Contact resistance 100 m Ω max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.
5.2.6	Solderbility	After spreading flux, the terminal is immersedin solder with following condition.Solder bar: M705/Sn-3.0Ag-0.5Cu (Senju Metal Industry Co.,Ltd.)Flux: CF-110VH-2A (tamura kaken)Soldering temperture: 260±5°CSoldering time: 2±0.5 sec.	95% or more of surface area(Excluding ruptured surface)where is immersed in solder shall be covered by new solder.

	Classification REFERENCE SPECIFICATION				Issue No. 20180839
5.3 Climatic characteristics No. ITEM TEST CONDITION PERFORMANCE 5.3.1 Cold test 1) Temperature : 4.042 °C Contact resistance 2.0 Duration of test : 500h 200 mΩ max. 3.1 Ac off a drop water. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 5.3.2 Heat test 1) Temperature : 85+2 °C Contact resistance 2.0 Duration of test : 500h 200 mΩ max. No.5.1.2 to 5.1.4 and 5.3.3 Heat test 1) Test cycles : 20 cycles Contact resistance 2.0 Duration of test : 20 cycles Contact resistance 200 mΩ max. 5.3.3 Heat shock 1) Test cycles : 20 cycles Contact resistance 2.0 Standard conditions after test : 1 h No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied. : state : state : state : State 2°C Contact resistance 2.0 Munidity test 1) Temperature : 6042 °C Contact resistance 200 mΩ max. 5.3.4 Humidity test 1) Temperature :	······································				
No.ITEMTEST CONDITIONPERFORMANCE5.3.1Cold test1) Temperature: 40 ± 2 °CContact resistance2) Duration of test: 500h200 mΩ max.3) Take off a drop water.No.5.1.2 to 5.1.4 and4) Standard conditions after test: 1 h5.3.2Heat test1) Temperature2) Duration of test: 500h3) Standard conditions after test: 1 hNo.5.1.2 to 5.1.4 andNo.5.3.1Duration of test5.3.2Heat test1) Temperature: 85±2 °C2) Duration of test: 20 cycles5.3.3Heat shock1) Test cycles: 20 cycles2) Standard conditions after test: 1 hNo.5.1.2 to 5.1.4 andNo.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2shall be satisfied.5.3.4Humidity test1) Temperature: 60±2 °C2) Relative humidity : 90~95 %3) Duration of test3) Duration of test: 500 h4) Take off a drop water.5.3.5Endurance(Switchingaction)3) Push force: 1 hshall be satisfied.: 2.000,000 timesif cycle: 2.000,000 times: 3.12 to 5.1.2 and 5.2.2shall be satisfied.: 3.5.6Withstand	-				
5.3.1Cold test1) Temperature: -40 ± 2 °CContact resistance2) Duration of test: 500h200 mΩ max.3) Take off a drop water.No.5.1.2 to 5.1.4 and4) Standard conditions after test: 1 h5.3.2Heat test1) Temperature2) Duration of test: 500h3) Standard conditions after test: 1 h5.3.3Heat test1) Temperature5.3.4Heat shock1) Test cycles2) Standard conditions after test: 1 h5.3.4Humidity test1) Test cycles5.3.4Humidity test1) Temperature5.3.5Endurance5.3.6Withstand H.51) Dc 15 V20 mQ max.No.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2shall be satisfied.5.3.5Endurance5.3.6Withstand H.51) Dc 15 V20 mA Resistance load2) Operation number: 2 \sim 3 times/s3) Relative humidity: 90~95 %3.0200 mΩ max.No.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2shall be satisfied.5.3.5Endurance(Switching3) Duration of test2) Operation number2) Operation number2) Operation number2) Operation number2) Temperature3) Relative humidity20) Om2 max.3) Relative humidity3) Push force2) Operation number3) Relative humidity3) Relative humidity2) Operation number </td <td></td> <td>1</td> <td></td> <td>PERE</td> <td>ORMANCE</td>		1		PERE	ORMANCE
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$					
3) Take off a drop water.No.5.1.2 to 5.1.4 and4) Standard conditions after test : 1 hNo.5.2.1 to 5.2.2 shall be satisfied.5.3.2Heat test1) Temperature : 85 ± 2 °CContact resistance 20 Duration of test : 500h5.3.3Heat test1) Temperature : 85 ± 2 °CContact resistance 20 m2 max.5.3.3Heat shock1) Test cycles : 20 cyclesContact resistance 	5.5.1	Cold lest			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$					
5.3.2Heat test1) Temperature: 85 ± 2 °CContact resistance2) Duration of test: 500h.00 $\Omega\Omega$ max.3) Standard conditions after test: 1 hNo.5.1.2 to 5.1.4 and5.3.3Heat shock1) Test cycles: 20 cycles2) Standard conditions after test: 1 h.00 $\Omega\Omega$ max.5.3.4Humidity test1) Test cycles: 20 cycles5.3.4Humidity test1) Temperature: 60 ± 2 °C.00 mG max.5.3.4Humidity test1) Temperature: 60 ± 2 °C.00 mG max.5.3.5Endurance.00 mG test: 500 hNo.5.1.2 to 5.1.4 and4.1 * 4.5 * 2 °C.00 mG max00 mG max00 mG max.5.3.4Humidity test1) Temperature: 60 ± 2 °C.00 mG max.5.3.5Endurance.00 peration of test: 500 hNo.5.1.2 to 5.1.4 and9.1 * 5.3.5Indurance.00 peration safter test: 1 hshall be satisfied.5.3.5Endurance.00 peration safter test: 1 hshall be satisfied.5.3.6Withstand H_21) Density: $2,000,000$ times.00 contact resistance9.1 * 5.3.6Withstand H_21) Density: $3\pm1ppm$.00 contact resistance2.0 * 0.5.1.2 to 5.1.4 and.0.5.1.2 to 5.1.4 and.0.5.1.2 to 5.1.4 and4.1 * 5.3.6Withstand H_21) Density: $3\pm1ppm$.00 contact resistance2.0 * 0.5.1.2 to 5.1.4 and.0.5.1.2 to 5.1.4 and.0.5.1.2 to 5.1.4 and4.1 * 5.3.6Withstand H_2<			4) Standard conditions after test : 1 h		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	522	TT A A	1) T 05:0 %		
3) Standard conditions after test : 1 hNo.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.3Heat shock test1) Test cycles : 20 cyclesContact resistance 20 m\Omega max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature : $60\pm 2\ ^{\circ}C$ 2) Relative humidity : $90\sim95\ ^{\circ}$ 3) Duration of test : $500\ ^{h}$ Contact resistance 200 m\Omega max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature : $60\pm 2\ ^{\circ}C$ 2) Relative humidity : $90\sim95\ ^{\circ}$ 3) Duration of test : $500\ ^{h}$ No.5.2.1 to 5.2.2 shall be satisfied.Contact resistance 200 m\Omega max. No.5.2.1 to 5.2.2 shall be satisfied.5.3.5Endurance (Switching action)1) DC 15 V 20 mA Resistance load force : Maximum value of operation forceContact resistance 20 Ω max. Bouncing : 10 ms max. Variation rate of operation speed : $2\sim3$ times/s Bouncing : 10 ms max. Variation rate of operation force shall be within $\pm 30\ ^{\circ}$ to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H_S 4) Density : 3 ± 1 ppm 2) Temperature : $40\pm 2\ ^{\circ}C$ 3) Relative humidity : $80\sim85\ ^{\circ}$ 4) Duration of test : $24\ ^{h}$ Contact resistance 200 mQ max.	5.3.2	Heat test	, 1		
5.3.4Heat shock test1) Test cycles: 20 cycles : 20 cyclesContact resistance 200 m Ω max. No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature: $60\pm 2^{\circ}C$: $1 \pm 2 \pm 2^{\circ}C$ B: $40\pm 2^{\circ}C$ C: 1 hour D:5 minutes max. E:1 hour F:5 minutes max. E:1 hour F:5 minutes max.Contact resistance 200 m Ω max. No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature: $60\pm 2^{\circ}C$ 2.0 Relative humidityContact resistance 200 m Ω max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.5Endurance (Switching action)1) DC 15 V 20 mA Resistance load 2.0 Operation speed forceContact resistance 2.0 QD m Ω max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.6Withstand H.S 2.10 Density1.10 Density: 3 ± 1 ppm 2.000,000 timesContact resistance 2.00 m Ω max. No.5.1.2 to 5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H.S 2.1 Density1.10 Density: 3 ± 1 ppm 2.1 TemperatureContact resistance 2.00 m Ω max. No.5.1.2 to 5.1.4 and No.5.2.2 ball be satisfied.5.3.6Withstand H.S 4.1 Duration of test: 24 hNo.5.1.2 to 5.1.4 and No.5.2.2 No.5.1.2 to 5.1.4 and No.5.2.2 No.5.1.2 to 5.1.4 and No.5.2.2			·		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			3) Standard conditions after test : 1 h		
5.3.3Heat shock test1) Test cycles 2) Standard conditions after test a1 h A:+85±2 °C B:-40±2 °C C:1 hour D:5 minutes max. E:1 hour F:5 minutes max. E:1 hour F:5 minutes max.Contact resistance 200 mΩ max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature a context is context is the state of				-	-
test2) Standard conditions after test: 1 h200 m\Omega max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature: 60 ± 2 °C : $exciteContact resistance200 m\Omega max.D:5 minutes max.E:1 hourD:5 minutes max.Contact resistance200 m\Omega max.No.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2shall be satisfied.5.3.4Humidity test1) Temperature: 60\pm 2 °C2.00 mQ max.No.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2shall be satisfied.5.3.5Endurance(Switchingaction)1) DC 15 V 20 mA Resistance loadforceContact resistance20 0 max.Bouncing : 10 ms max.Variation rate ofoperation force shallbe within \pm 30 % to thevalue before testingNo.5.1.2 and 5.2.2shall be satisfied.5.3.6Withstand H_2S1) Density: 3\pm 1ppm2.000,000 timesContact resistance200 mQ max.No.5.1.2 to 5.1.4 andNo.5.2.2No.5.1.2 and 5.2.2shall be satisfied.5.3.6Withstand H_2S1) Density: 3\pm 1ppm2.000,000 timesContact resistance2.000 mQ max.No.5.1.2 to 5.1.4 andNo.5.2.1 to 5.2.2$					
A :=+85 $\pm 2^{\circ}$ C B:= $40\pm 2^{\circ}$ C C:1 hour D:5 minutes max.No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature : $60\pm 2^{\circ}$ C 2) Relative humidity : $90\sim 95$ % 3) Duration of test : 500 h 4) Take off a drop water. 5) Standard conditions after test : 1 h shall be satisfied.Contact resistance 200 mΩ max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2 shall be satisfied.5.3.5Endurance (Switching action)1) DC 15 V 20 mA Resistance load forceContact resistance 20 Ω max. No.5.2.1 to 5.2.2 shall be satisfied.5.3.6Withstand H ₂ S1) Density: 3 ± 1 ppm 2,000,000 timesContact resistance 200 mΩ max. No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H ₂ S1) Density: 3 ± 1 ppm 2,000,000 timesContact resistance 200 mΩ max. No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H ₂ S1) Density: 3 ± 1 ppm 2,000,000 timesContact resistance 200 mΩ max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2	5.3.3	Heat shock			
B:-40 $\pm 2^{\circ}$ C C:1 hour D:5 minutes max. E:1 hour F:5 minutes max.No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature : $60\pm 2^{\circ}$ C 2) Relative humidity : $90\sim 95^{\circ}$ % 3) Duration of test : 500 h 4) Take off a drop water. 5) Standard conditions after test : 1 h box.5.2.1 to 5.2.2 shall be satisfied.Contact resistance 200 m Ω max. No.5.2.1 to 5.2.2 shall be satisfied.5.3.5Endurance (Switching action)1) DC 15 V 20 mA Resistance load forceContact resistance 20 Ω max. Bouncing : 10 ms max. Variation rate of operation force shall be within $\pm 30^{\circ}$ to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H_21) Density 2) Temperature 3) Relative humidity : $80\sim 85^{\circ}$ % 3) Relative humidity : $80\sim 85^{\circ}$ % 4) Duration of test 2) Temperature 3) Relative humidity : $80\sim 85^{\circ}$ % 4) Duration of test 3) Rulative humidity : $80\sim 85^{\circ}$ %		test			
C:1 hour D:5 minutes max. F:5 minutes max. E:1 hour F:5 minutes max. E:1 hour F:5 minutes max. E:1 hour F:5 minutes max. E:1 hour F:5 minutes max.No.5.2.1 to 5.2.2 shall be satisfied.5.3.4Humidity test1) Temperature 2) Relative humidity : $90 \sim 95 \%$ 3) Duration of test : 500 h 4) Take off a drop water. 5) Standard conditions after test 2) Standard conditions after test 2) Operation speed 3) Push force 6) Operation speed 3) Push force 6) Operation number forceContact resistance 20 Ω max. Bouncing : 10 ms max. Variation rate of operation force shall be within $\pm 30 \%$ to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H ₂ S1) Density 2) Temperature 2) Temperature 3) Relative humidity : $80 \sim 85 \%$ 4) Duration of test 2) Temperature 2) Temperature 3) Relative humidity: 2) $80 \sim 85 \%$ 3) No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2			// //	No.5.1.2	to 5.1.4 and
5.3.4Humidity test1) Temperature: 60 ± 2 °CContact resistance5.3.4Humidity test1) Temperature: 60 ± 2 °CContact resistance2) Relative humidity: $90 \sim 95$ %200 mΩ max.3) Duration of test: 500 hNo.5.1.2 to $5.1.4$ and4) Take off a drop water.No.5.2.1 to $5.2.2$ 5) Standard conditions after test: 1 h5.3.5Endurance1) DC 15 V(Switching2) Operation speed: $2\sim3$ times/s3) Push force: Maximum value of operationforceVariation rate of4) Operation number: $2,000,000$ times5.3.6Withstand H.S1) Density: $3\pm1ppm$ Contact resistance20 mQ max.3) Relative humidity : $80\sim85$ %No.5.1.2 to 5.1.4 andNo.5.1.2 to 5.1.4 andNo.5.1.2 to 5.1.4 andMithstand H.S4) Duration of test2.3.6Withstand H.S4) Duration of test2.3.75.3.6			0°	No.5.2.1	to 5.2.2
Image: constraint of the sector of the se			·	shall be s	atisfied.
5.3.4Humidity test1) Temperature: 60 ± 2 °CContact resistance2) Relative humidity: $90 \sim 95$ %200 mΩ max.3) Duration of test:500 hNo.5.1.2 to 5.1.4 and4) Take off a drop water.No.5.2.1 to 5.2.25) Standard conditions after test:1 h5.3.5Endurance1) DC 15 V20 mA Resistance loadContact resistance(Switching2) Operation speed: $2\sim3$ times/s20 Ω max.3) Push force:Maximum value of operationBouncing :10 ms max.force4) Operation number:2,000,000 timesoperation force shallbe within ±30 % to the value before testingNo.5.1.2 and 5.2.2shall be satisfied.5.3.6Withstand H ₂ S1) Density: 3 ± 1 ppmContact resistance2) Temperature: 40 ± 2 °C200 mΩ max.3) Relative humidity: $80\sim85$ %No.5.1.2 to 5.1.4 and4) Duration of test:24 hNo.5.2.1 to 5.2.2					
2) Relative humidity : $90 \sim 95 \%$ $200 \text{ m}\Omega \text{ max.}$ 3) Duration of test : 500 h No.5.1.2 to 5.1.4 and4) Take off a drop water.No.5.2.1 to 5.2.25) Standard conditions after test : 1 hshall be satisfied.5.3.5Endurance1) DC 15 V 20 mA Resistance loadContact resistance(Switching2) Operation speed : $2 \sim 3$ times/s $20 \Omega \text{ max.}$ action)3) Push force: Maximum value of operationBouncing : 10 ms max.force4) Operation number : $2,000,000$ timesoperation force shallbe within $\pm 30 \%$ to the value before testingNo.5.1.2 and 5.2.2shall be satisfied.5.3.6Withstand H.21) Density $3 \pm 1 \text{ ppm}$ Contact resistance20 m Ω max.3) Relative humidity : $80 \sim 85 \%$ No.5.1.2 to 5.1.4 and4) Duration of test : 24 h No.5.2.1 to 5.2.2			F:5 minutes max.		
3) Duration of test: 500 hNo.5.1.2 to 5.1.4 and4) Take off a drop water.No.5.2.1 to 5.2.25) Standard conditions after test: 1 h5.3.5Endurance1) DC 15 V 20 mA Resistance loadContact resistance(Switching2) Operation speed: $2\sim3$ times/s20 Ω max.action)3) Push force: Maximum value of operationBouncing : 10 ms max.variation rate of4) Operation number: 2,000,000 timesoperation force shall be within ±30 % to the value before testing No.5.1.2 and 5.2.25.3.6Withstand H_2S1) Density: 3 ± 1 ppmContact resistance 200 mQ max.5.3.6Withstand H_2S1) Density: 3 ± 1 ppmContact resistance 200 mQ max.4) Duration of test: 24 hNo.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2	5.3.4	Humidity test	1) Temperature : 60 ± 2 °C	Contact r	esistance
4) Take off a drop water. 5) Standard conditions after test : 1 hNo.5.2.1 to 5.2.2 shall be satisfied.5.3.5Endurance (Switching action)1) DC 15 V 20 mA Resistance load 2) Operation speed : 2~3 times/s 3) Push force : Maximum value of operation forceContact resistance 20 Ω max. Bouncing : 10 ms max. Variation rate of operation force shall be within ±30 % to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H ₂ S1) Density : 3±1ppm 2) Temperature : 40±2 °C 3) Relative humidity : 80~85 % 4) Duration of test : 24 hContact resistance 20 Ω max.			2) Relative humidity : $90 \sim 95 \%$	200 mΩ r	nax.
5) Standard conditions after test : 1 h shall be satisfied. 5.3.5 Endurance 1) DC 15 V 20 mA Resistance load Contact resistance (Switching 2) Operation speed : 2~3 times/s 20 Ω max. action) 3) Push force : Maximum value of operation force Bouncing : 10 ms max. Variation rate of 4) Operation number : 2,000,000 times operation force shall be within ±30 % to the value before testing No.5.1.2 and 5.2.2 shall be satisfied. 5.3.6 Withstand H.S 1) Density : 3±1ppm Contact resistance 2.) Temperature : 40±2 °C 200 mΩ max. No.5.1.2 to 5.1.4 and 4) Duration of test : 24 h No.5.2.1 to 5.2.2			3) Duration of test : 500 h	No.5.1.2	to 5.1.4 and
5.3.5 Endurance 1) DC 15 V 20 mA Resistance load Contact resistance (Switching 2) Operation speed : 2~3 times/s Bouncing : 10 ms max. action) 3) Push force : Maximum value of operation force Bouncing : 10 ms max. 4) Operation number : 2,000,000 times operation force shall be within ±30 % to the value before testing No.5.1.2 and 5.2.2 shall be satisfied. 5.3.6 Withstand H.S 1) Density : 3±1ppm Contact resistance 2) Temperature : 40±2 °C 200 mQ max. No.5.1.2 to 5.1.4 and 4) Duration of test : 24 h No.5.2.1 to 5.2.2			4) Take off a drop water.	No.5.2.1	to 5.2.2
$[\begin{array}{c c c c c c c c c c c c c c c c c c c $			5) Standard conditions after test : 1 h	shall be s	atisfied.
action)3) Push force: Maximum value of operation forceBouncing : 10 ms max. Variation rate of operation force shall be within $\pm 30 \%$ to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H_S1) Density: 3 ± 1 ppmContact resistance 20 m Ω max. 3) Relative humidity : $80 \sim 85 \%$ 4) Duration of test20 m Ω max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2	5.3.5	Endurance	1) DC 15 V 20 mA Resistance load	Contact r	esistance
forceVariation rate of operation force shall be within ± 30 % to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H.S1) Density: 3 ± 1 ppmContact resistance 20 m Ω max. 3) Relative humidityContact resistance 20 m Ω max. No.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2		(Switching	2) Operation speed : $2 \sim 3$ times/s	20	Ω max.
4) Operation number: 2,000,000 timesoperation force shall be within $\pm 30 \%$ to the value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H_2S1) Density: 3 ± 1 ppmContact resistance 20 TemperatureContact resistance 200 m Ω max.3) Relative humidity: $80 \sim 85 \%$ 4) Duration of testNo.5.1.2 to 5.1.4 and No.5.2.1 to 5.2.2		action)	3) Push force : Maximum value of operation	Bouncing	: 10 ms max.
5.3.6Withstand H_S1) Density: 3 ± 1 ppmContact resistance2) Temperature: 40 ± 2 °C200 m Ω max.3) Relative humidity: $80\sim 85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 hNo.5.2.1 to 5.2.2			force	Variation	rate of
value before testing No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H2S1) Density: 3 ± 1 ppmContact resistance2) Temperature: 40 ± 2 °C200 m Ω max.3) Relative humidity: $80\sim 85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 hNo.5.2.1 to 5.2.2			4) Operation number : 2,000,000 times	operation	force shall
No.5.1.2 and 5.2.2 shall be satisfied.5.3.6Withstand H_S1) Density: 3 ± 1 ppmContact resistance2) Temperature: 40 ± 2 °C200 m Ω max.3) Relative humidity: $80 \sim 85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 hNo.5.2.1 to 5.2.2				be within	± 30 % to the
5.3.6Withstand H_2S 1) Density: $3\pm 1ppm$ Contact resistance2) Temperature: 40 ± 2 °C200 m Ω max.3) Relative humidity: $80\sim 85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 hNo.5.2.1 to 5.2.2				value bef	ore testing
5.3.6Withstand H_2S 1) Density: 3 ± 1 ppmContact resistance2) Temperature: 40 ± 2 °C $200 \text{ m}\Omega \text{ max}$.3) Relative humidity: $80\sim 85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 h No.5.2.1 to 5.2.2				No.5.1.2	and 5.2.2
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				shall be sa	tisfied.
2) Temperature: 40 ± 2 °C $200 \text{ m}\Omega \text{ max.}$ 3) Relative humidity: $80\sim85$ %No.5.1.2 to 5.1.4 and4) Duration of test: 24 h No.5.2.1 to 5.2.2	5.3.6	Withstand H ₂ S	1) Density : 3±1ppm	Contact r	esistance
3) Relative humidity : $80 \sim 85 \%$ No.5.1.2 to 5.1.4 and4) Duration of test : $24 h$ No.5.2.1 to 5.2.2		<i>2</i>		200 mΩ r	nax.
4) Duration of test : 24 h No.5.2.1 to 5.2.2				No.5.1.2	to 5.1.4 and
			· ·		
			*		
			· /		
	1				
	1				



2) Re-soldering by soldering iron shall be allowed under 350 °C max. 3 sec. max. 1 time only and the tip of iron must not touch to terminals.

Soldering iron for re-soldering have to be 60 W max.

- 6.2 Design instructions
 - 1) Please refer to the land pattern plan Panasonic recommends on the 2nd page.
 - 2) Design key top as fig-1. Design inclination of key top 4 deg. max. as fig-2.Deviation between center of key top and switch should be within 0.3 mm.(Recommended operation condition)

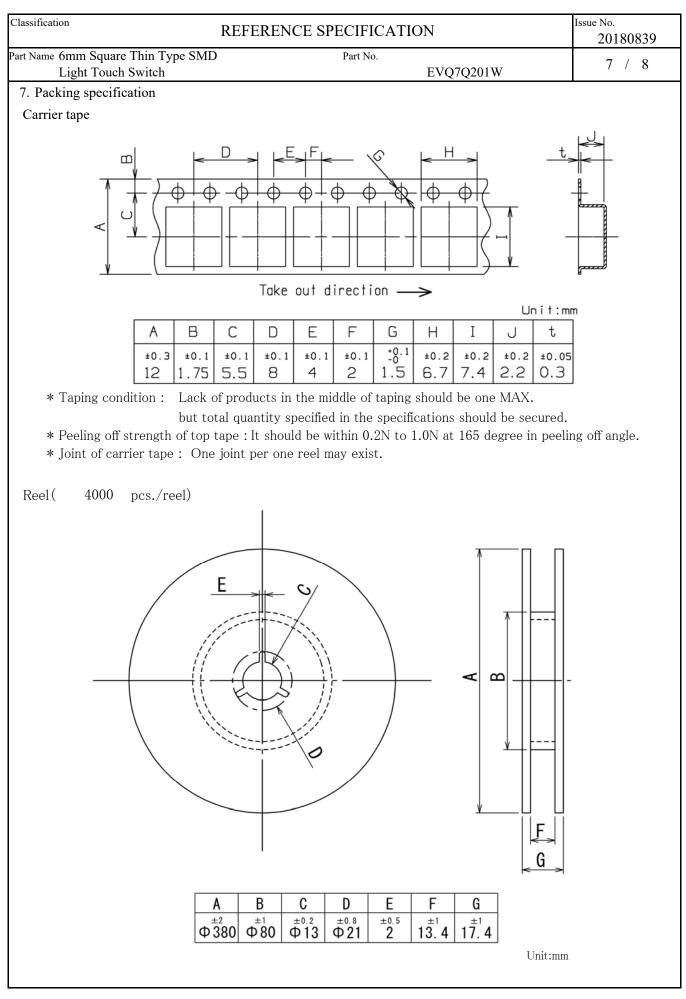


6.3 Note

- 1) Please be cautions not to give excessive static load or shock to switches.
- 2) Please be careful not to pile up P.W.B. after switches were soldered.
- Preservation under high temperature and high humidity or corrosive gas should be avoided especially. When you need to preserve for a long period, do not open the carton.
- 4) Cleaning
 - If flux or solder is scattered on the surface of P.W.B when soldering, characteristics of this product may be damaged.
 - Cleaning after soldering is not allowed. When cleaning is required this switch should be soldered after the cleaning.
- 5) Avoid the use of the switch under pushed ON condition is continued for a long time.
- 6) There is a possibility the flux from solder paste infiltrates into the body if plenty of solder paste was applied by switch on the P.W.B.

So we recommend to use our proposed land design in order to prevent above problem.

Also please avoid putting additional land by the switch on the P.W.B.



Panasonic Corporation

sification REFERENC	CE SPECIFICATION	Issue No. 20180839
Name 6mm Square Thin Type SMD	Part No.	8 / 8
Light Touch Switch	EVQ7Q201W	
Prohibitions and precaution for handling>		
[Prohibited items on fire and smoking]	· · · · · · · ·	C
	its rated range because doing so may cause a	
-	er conditions in which the product is used out	
	current interruption using a protective circuit.	
	ed in product is "94HB, " which is based on U	JL94
	aterials). Prohibit use in a location where a	
spreading fire may be generated or prepare	e against a spreading fire.	
[For use in equipment for which safety is requ	uested	
• Although care is taken to ensure product q	quality, inferior characteristics, short circuits,	
and open circuits are some problems that r	might be generated. To design an equipment v	vhich
places maximum emphasis on safety, revie	ew the effect of any single fault of a product	
in advance and perform virtually fail-safe	design to ensure maximum safety by:	
• Preparing a protective circuit or a prot	tective device to improve system safety, and e	equipment.
• Preparing a redundant circuit to impro	ove system safety so that the single fault	
of a product does not cause a dangerou	us situation.	
[Attentions required for storage condition]		
	llowing circumstances and conditions, it may	
affect on the performance deteriorations ar		
following conditions.		
(1) A place where the temperature is -10	0°C max., +40°C min. and the humidity is 859	% min.
(2) In the corrosive gas atmosphere.		
(3) Long-term storage for 6 months min	n.	
(4) A place where the product is expose	ed to direct sunlight.	
• Store in packed condition so that the load s	-	
-	e, our recommendation is within 3 months and	the
limitation is 6 months.		
• If any remainder left after packing is open	ed, store it with proper moistureproofing and	
gasproofing, etc.,		