



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

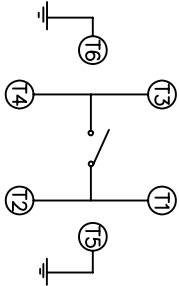
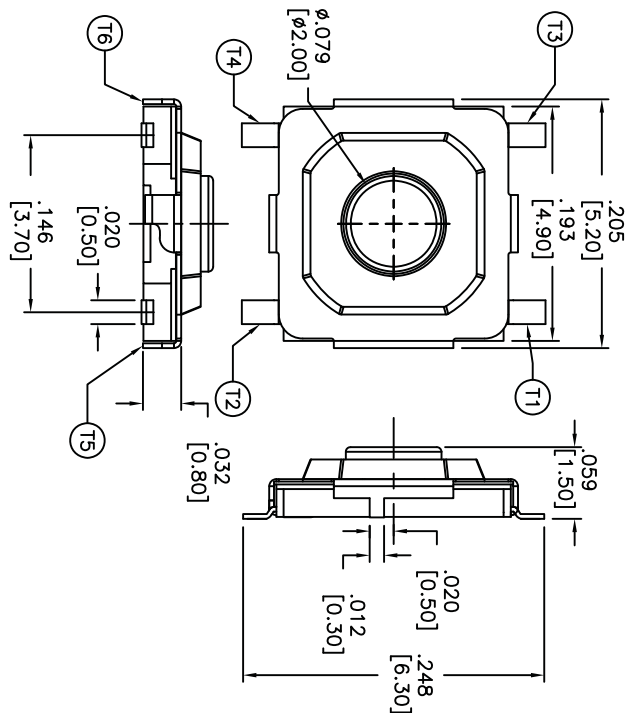
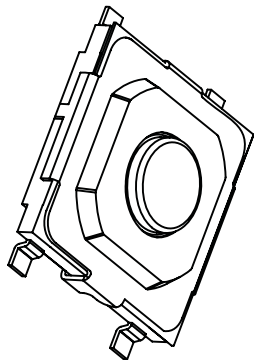
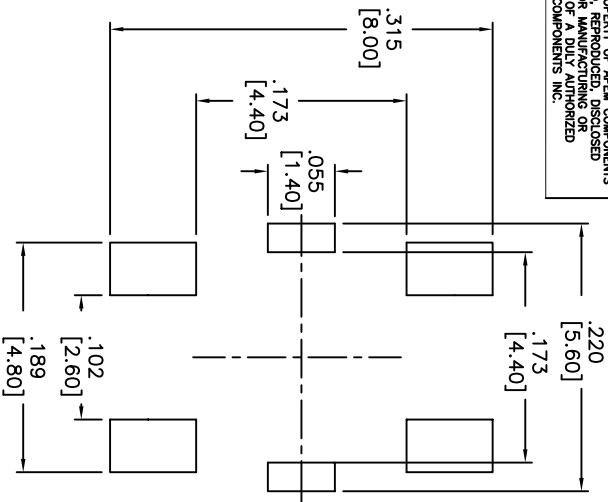
Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



THIS DOCUMENT IS THE PROPERTY OF APEM COMPONENTS AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED OR USED AS THE BASIS FOR MANUFACTURING OR SALE WITHOUT PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF APEM COMPONENTS INC.

ATMG53\*/V\*  
OPERATION FORCE: \_\_\_\_\_  
3=160gf  
4=260gf  
PACKAGE STYLE:  
T/R=TAPE AND REEL  
LEAD FREE



CIRCUIT DIAGRAM

DATE	SYM	REVISION RECORD	DWN.	CK.
11/05	B	ECO# 495		CD

DESCRIPTION: MINIATURE MACHANICAL CONTACT SWITCH WITH SURFACE MOUNT TERMINALS AND GROUNDING TERMINALS.

SPECIFICATIONS:

STROKE: .010  $\pm$ .008  $\pm$ .018

OPERATION TEMPERATURE RANGE: -25°C TO +70°C

STORAGE TEMPERATURE RANGE: -30°C TO +80°C

VIBRATION TEST: PASSES METHOD 201A MIL-STD-202F.

SHOCK TEST: 50G PER METHOD 213B MIL-STD202F.

ELECTRICAL LIFE: 1,000,000 CYCLES MIN FOR 160gf. 200,000 CYCLES MIN FOR 260gf.

RATING: 50mA, 12VDC.

CONTACT RESISTANCE: 100mΩ MAX.

INSULATION RESISTANCE: 100MΩ MIN. AT 500VDC.

DIELECTRIC STRENGTH: 250VAC/1 MINUTE.

CONTACT ARRANGEMENT: 1POLE 1 THROW.

MATERIALS:

COVER: NICKEL SILVER.

BASE: HIGH-TEMP. THERMOPLASTIC.

COLOR: BLACK.

STEM: BRASS WITH NICKEL PLATING

CONTACT DISC: STAINLESS STEEL.

TERMINAL: BRASS WITH SILVER CLADDING.

TAPE: TEFLON

SOLDERING:

HAND SOLDERING: 30 WATT IRON AT 350°C FOR 5 SEC.

VAPOR & REFLOW: 255°C FOR 5 SEC. MAX.

NON-WASHABLE

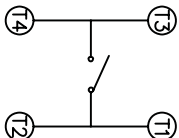
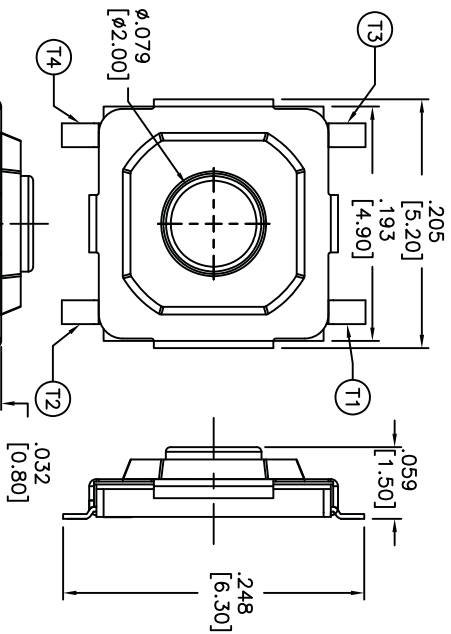
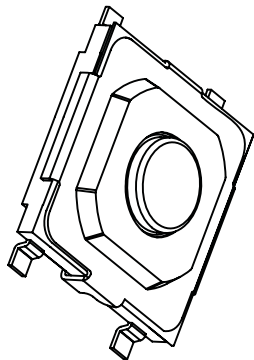
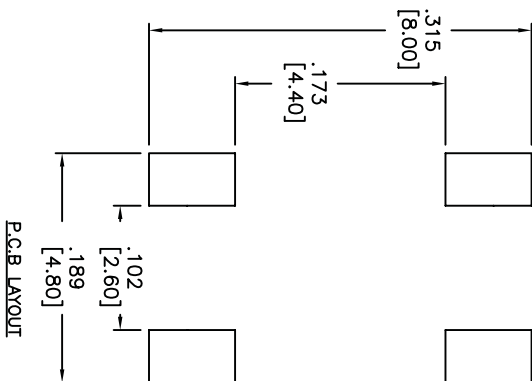
LEAD FREE PROCESS COMPATIBLE

RoHS COMPLANT

9A. INSECT.		63 NICK RD.		DRN.	CJD
DESIGNATES CRITICAL DIMENSION		APERM		BR.	PJD
TOLERANCES (UNLESS OTHERWISE SPECIFIED)		1 OF 1		THIRD ANGLE PROJECTION	
.XX=±.02(0.05)		SIZE		SCALE	
.XX=±.008(0.20)		B		10:1	
.XXX=±.0008(0.02)		TITLE		MECHANICAL CONTACT SWITCH	
ANGLE = 10.5°		DATE		DRAWING NO.	
DO NOT SCALE DRAWING		08/15/05		ATMG53*V*	
				REV	
				B	

THIS DOCUMENT IS THE PROPERTY OF APDM COMPONENTS AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED OR USED AS THE BASIS FOR MANUFACTURING OR SALE WITHOUT PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF APDM COMPONENTS INC.

ATM53\*/V\*  
PACKAGE STYLE:  
2=100gf  
3=160gf  
4=260gf  
T/R=TAPE AND REEL  
LEAD FREE



CIRCUIT DIAGRAM

DESCRIPTION: MINIATURE MECHANICAL CONTACT SWITCH  
SURFACE MOUNT TERMINALS.

SPECIFICATIONS:

STROKE: .010  $\pm$ .004  $\pm$ .020 [0.25  $\pm$ .08]  $\pm$ .020  
OPERATION TEMPERATURE RANGE: -25°C TO +70°C  
STORAGE TEMPERATURE RANGE: -30°C TO +80°C  
VIBRATION TEST: PASSES METHOD 201A MIL-STD-202F.  
SHOCK TEST: 50G PER METHOD 213B MIL-STD202F.  
ELECTRICAL LIFE: 1,000,000 CYCLES MIN FOR 100gf, 16  
200,000 CYCLES MIN FOR 260gf.  
RATING: 50mA, 12VDC.  
CONTACT RESISTANCE: 100mΩ MAX.  
INSULATION RESISTANCE: 100MΩ MIN. AT 500VDC.  
DIELECTRIC STRENGTH: 250VAC/1 MINUTE.  
CONTACT ARRANGEMENT: 1POLE 1 THROW.

MATERIALS:

COVER: NICKEL SILVER.  
BASE: HIGH-TEMP. THERMOPLASTIC.  
COLOR, BLACK.  
STEM: BRASS WITH NICKEL PLATING  
CONTACT DISC: STAINLESS STEEL WITH SILVER PLATING.  
TERMINAL: BRASS WITH SILVER CLADDING.  
TAPE: TEFLON

SOLDERING:  
HAND SOLDERING: 30 WATT IRON AT 350°C FOR 5 SEC.  
VAPOR & REFLOW: 255°C FOR 5 SEC. MAX.  
NON-WASHABLE  
LEAD FREE PROCESS COMPATIBLE  
ROHS COMPLIANT

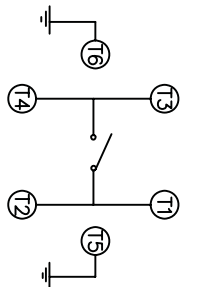
DATE	SYM	REVISION RECORD	DWN.	CK.

9A. INSECT.		63 Neck Rd.		DIN. CJD	
DESIGNATES OPTICAL		Haverhill, MA 01830		BR. OK.	
DIMENSION		APDM		PJD	
TOLERANCES		1 OF 1		SIZE	
(UNLESS NOTED)		B		SCALE	
.XX=.XX(0.05)		10:1		THIRD ANGLE PROJECTION	
.XXX=.XX(0.20)					
.XXXX=.XX(0.02)					
ANGLE = 10.5°					
DO NOT SCALE		DATE		DRAWING NO.	
DRAWING		4/26/06		ATM53*V*	
				REV	
				A	

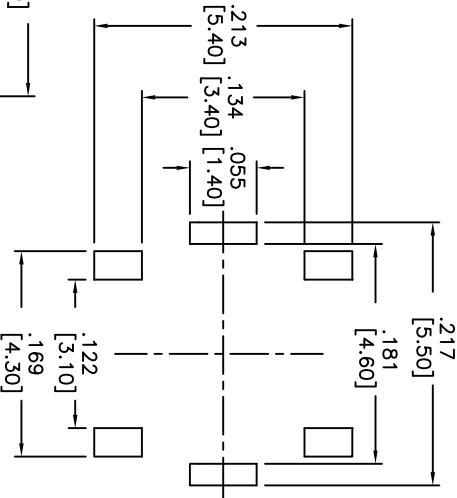
MECHANICAL CONTACT SWITCH



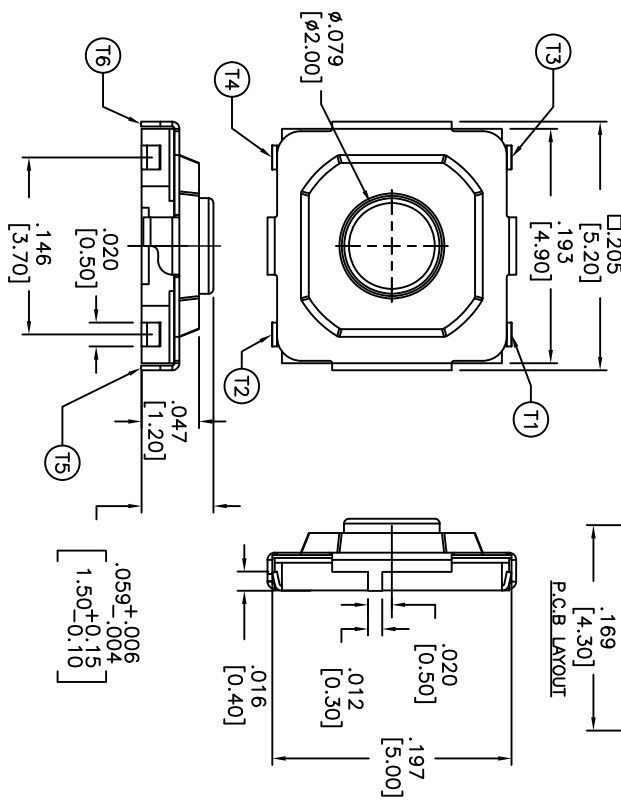
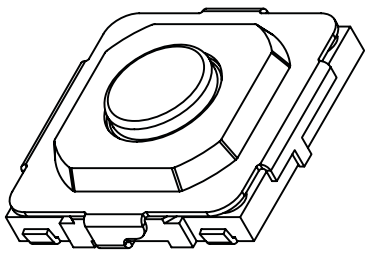
THIS DOCUMENT IS THE PROPERTY OF APEM COMPONENTS AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED OR USED AS THE BASIS FOR MANUFACTURING OR SALE WITHOUT PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF APEM COMPONENTS INC.



CIRCUIT DIAGRAM



PCB LAYOUT



OPERATION FORCE: ATUG53\*V\* PACKAGE STYLE: T/R=TAPE AND REEL  
3=160gf  
4=260gf  
LEAD FREE

DESCRIPTION: MINIATURE MECHANICAL CONTACT SWITCH WITH "S" TYPE SMT AND GROUNDING TERMINALS.

SPECIFICATIONS:

OPERATION TEMPERATURE RANGE: -25°C TO +70°C  
STORAGE TEMPERATURE RANGE: -30°C TO +80°C  
VIBRATION TEST: PASSES METHOD 201A MIL-STD-202F.  
SHOCK TEST: 50G PER METHOD 213B MIL-STD202F.  
ELECTRICAL LIFE: 1,000,000 CYCLES MIN FOR 160gf.  
200,000 CYCLES MIN FOR 260gf.  
RATING: 50mA, 12VDC.  
CONTACT RESISTANCE: 100mΩ MAX.  
INSULATION RESISTANCE: 100MΩ MIN. AT 500VDC.  
DIELECTRIC STRENGTH: 250VAC/1 MINUTE.  
STROKE: 0.25 ±0.10mm  
CONTACT ARRANGEMENT: 1POLE 1 THROW.

MATERIALS:

COVER: NICKEL SILVER.  
BASE: HIGH-TEMP. THERMOPLASTIC.  
COLOR: BLACK.  
STEM: BRASS WITH NICKEL PLATING  
CONTACT DISC: STAINLESS STEEL.  
TERMINAL: BRASS WITH SILVER CLADDING.  
TAPE: TEFLON

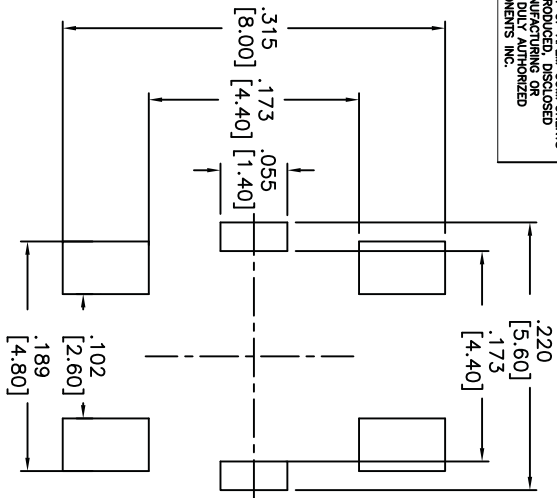
SOLDERING:

HAND SOLDERING: 30 WATT IRON AT 350°C FOR 5 SEC.  
IR REFLOW: 225°C MAX.  
LEAD FREE PROCESS COMPATIBLE  
ROHS COMPLIANT

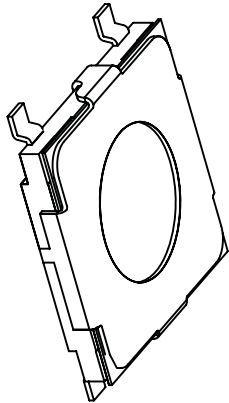
DATE	SYM	REVISION	RECORD	DWN.	CK.

Q.A. INSPECT		DESIGNATES OPTICAL DIMENSION		TOLERANCES (UNLESS OTHERWISE SPECIFIED)		TITLE		DATE		DRAWING NO.		REV	
APEM		63 Neck Rd. 01850		100X=±0.008(0.02)		MECHANICAL CONTACT SWITCH		8/11/05		ATJG53*V*		A	
APEM		Haverhill, MA 01850		200X=±0.004(0.10)									
		FAX 978-372-3554		300X=±0.008(0.02)									
				ANGLE = 10.5°									

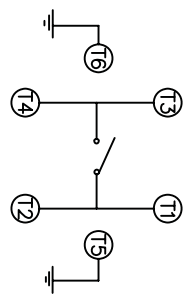
THIS DOCUMENT IS THE PROPERTY OF APEM COMPONENTS AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED OR USED AS THE BASIS FOR MANUFACTURING OR SALE WITHOUT PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF APEM COMPONENTS INC.



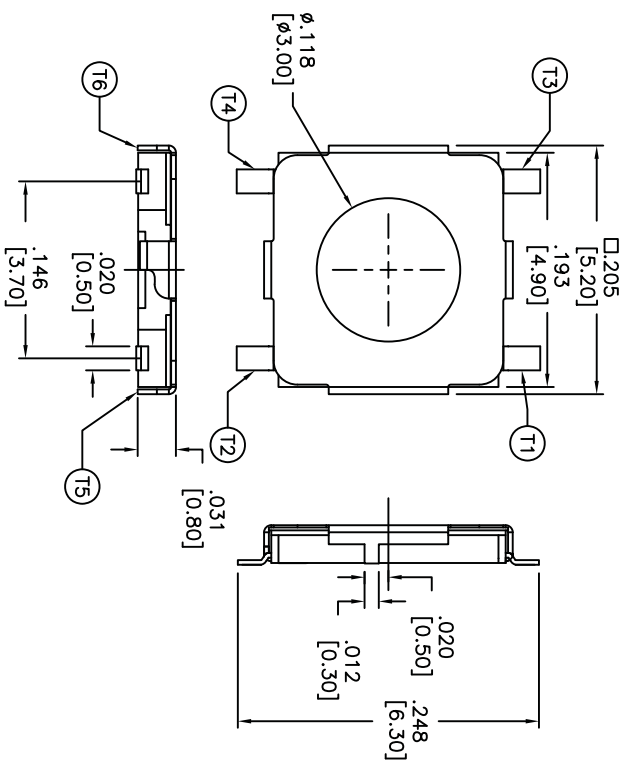
P.C.B. LAYOUT  
UNLESS OTHERWISE SPECIFIED  
ALL P.C. TOLERANCES ARE  $\pm .002$  [0.05]



OPERATION FORCE: \_\_\_\_\_  
ATMG52\*V\*  
PACKAGE STYLE: \_\_\_\_\_  
T/R=TAPE AND REEL  
LEAD FREE  
2=100gf  
3=160gf  
4=260gf



CIRCUIT DIAGRAM



DESCRIPTION: MINIATURE MECHANICAL CONTACT SWITCH WITH SMT, AND GROUNDING TERMINALS.

SPECIFICATIONS:  
OPERATION TEMPERATURE RANGE: -25°C TO +70°C  
STORAGE TEMPERATURE RANGE: -30°C TO +80°C  
VIBRATION TEST: PASSES METHOD 2014 MIL-STD-202F.  
STROKE: .010  $\pm .005$  [0.25  $\pm .013$ ]  
SHOCK TEST: 50G PER METHOD 213B MIL-STD202F.  
ELECTRICAL LIFE: 1,000,000 CYCLES MIN FOR 100gf AND 160gf.  
200,000 CYCLES MIN FOR 260gf.

RATING: 50mA, 12VDC.  
CONTACT RESISTANCE: 100mΩ MAX.  
INSULATION RESISTANCE: 100MΩ MIN. AT 500VDC.  
DIELECTRIC STRENGTH: 250VAC/1 MINUTE.  
CONTACT ARRANGEMENT: 1POLE 1 THROW.  
MATERIALS:  
COVER: NICKEL SILVER.  
BASE: HIGH-TEMP. THERMOPLASTIC.  
COLOR, BLACK.  
STEM: BRASS WITH NICKEL PLATING  
CONTACT DISC: STAINLESS STEEL WITH SILVER CLADDING.  
TERMINAL: BRASS WITH SILVER PLATING.  
TAPE: TEFLON  
SOLDERING:  
HAND SOLDERING: 30 WATT IRON AT 350°C FOR 5 SEC.  
IR REFLOW: 260°C MAX  
LEAD FREE PROCESS COMPATIBLE  
ROHS COMPLIANT

DATE	SYM	REVISION	RECORD	DWN.	CK.

Q.A. INSPECT:		DESIGNATES CRITICAL		DIMENSION	
TOLERANCES (UNLESS AS NOTED)		X.XX=±.02[0.05]		.XXX=±.008[0.20]	
TITLE		MECHANICAL		CONTACT SWITCH	
DATE		DRAWING NO.		REV	
8/15/05		ATMG52*V*		A	



63 Neck Rd.  
Haverhill, MA 01830  
Tel: 978-372-3534  
Fax: 978-372-3534

DRN. CJD  
BR. PJD

THIRD ANGLE PROJECTION

THIS DOCUMENT IS THE PROPERTY OF APEM COMPONENTS AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED OR USED AS THE BASIS FOR MANUFACTURING OR SALE WITHOUT PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF APEM COMPONENTS INC.

OPERATION FORCE: ATUG52\*V  
 2=100gf  
 3=160gf  
 4=260gf

PACKAGE STYLE:  
 T/R=TAPE AND REEL  
 LEAD FREE

DATE	SYM	REVISION RECORD	DWN.	CK.

DESCRIPTION: MINIATURE MECHANICAL CONTACT SWITCH WITH J TYPE SMT AND GROUNDING TERMINALS.

### SPECIFICATIONS:

OPERATION TEMPERATURE RANGE:  $-25^{\circ}\text{C}$  TO  $+70^{\circ}\text{C}$

STORAGE TEMPERATURE RANGE: -30°C TO +80°C

VIBRATION TEST: PASSES METHOD 201A MIL-STD-202F.  
SHOCK TEST: 500 PPK VIBRATION 64ZD III STD0000F

SHOCK TEST: 50G PER METHOD 213B MIL-STD-202F.  
ELECTRICAL LIFE: 1,000,000 CYCLES MIN FOR 100gf 160gf.

200,000 CYCLES MIN FOR 260gf.  
RATING: 50mA, 12VDC.

**CONTACT RESISTANCE:**

INSULATION RESISTANCE: 100MΩ MIN. AT 500VDC.

DIELECTRIC STRENGTH: 250VAC/1 MINUTE.

STROKE: 0.25  $\pm$ 0.10  
-0.20mm

CONTACT ARRANGEMENT: 1POLE 1 THROW.

**MATERIALS:**

COVER: NICKEL SILVER

BASE: HIGH-TEMP. THERMOPLASTIC.

COLOR, BLACK.

STEM: BRASS WITH NICKEL PLATING

CONTACT DISC: STAINLESS STEEL WITH SILVER CLADDING.  
FEDERAL PROCESS WITH SILVER PLATING

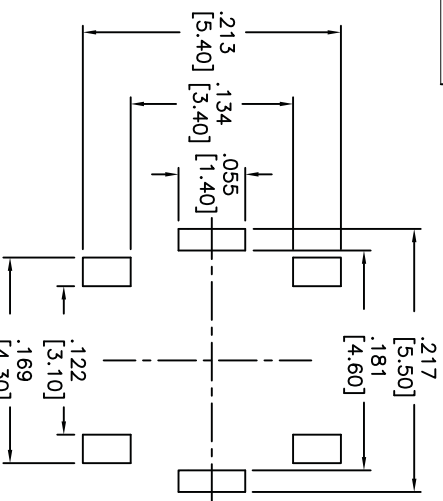
TERMINAL: BR.  
TAPF. TEEI ON

## SOLDERING:

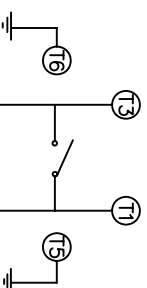
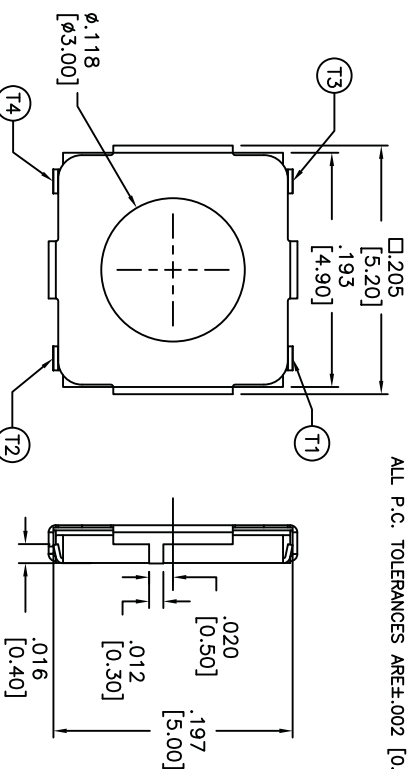
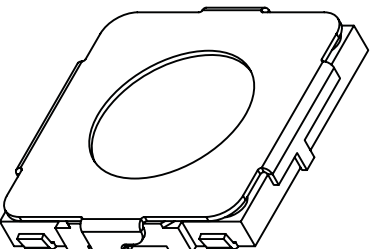
HAND SOLDERING: 30 WATT IRON AT 350°C FOR 5 SEC.

IR REFLOW: 260°C MAX


LEAD FREE PROCESS COMPATIBLE  
ROHS COMPLIANT



P.C.B LAYOUT  
UNLESS OTHERWISE SPECIFIED  
ALL P.C. TOLERANCES ARE±.002 [0.05]



### WITH GROUND CIRCUIT DIAGRAM

Q.A. INSECT △		 63 Meik. RD. 10-8355 Tel: 878-372-1802 Fax: 878-372-8534 www.apen.com		BRN. CJD
DESIGNER'S CRITICAL TOLERANCES		INCH SHEET SIZE SCALE (MM) 1 OF 1 B 10:1		BRN. CJM C.M.K. PJD
DIMENSIONS (except as noted) XXX=±0.02(0.05) XXXX=±0.008(0.20) XXXXX=±0.0008(0.02) ANGLE = 40.5°		TITLE MECHANICAL CONTACT SWITCH		THIRD ANGLE PROJECTION 
DO NOT SCALE DRAWING	DATE 8/11/06	DRAWING NO. ATJG52*V*	REV A	