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# ET Standard Size Toggle Switch

# ET



RoHS RoHS Compliant

## Introduction

The ET series is Copal's standard size high capacity toggle switch. The ET series are available in various current rating, switching functions, and terminals. The housing is made of self-extinguishing phenol resin which has excellent heat resistance, arc resistance, and tracking resistance. The contacts are designed to eliminate chattering and bouncing to prevent insulation deterioration.

## Part Numbering

**E T 2 25 K 12 — Z**

Series code | Actuator shape | No. of poles | Current | Swiching function | Terminal styles

| Fig. | No. of poles |
|---|---|
| 1 | 1pole |
| 2 | 2poles |
| 3 | 3poles |
| 4 | 4poles |
| 6 | 6poles |

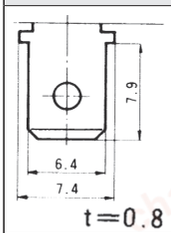
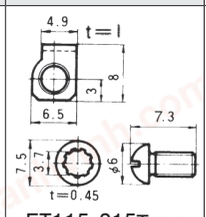
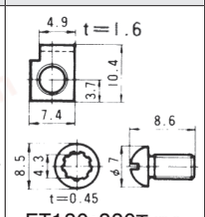
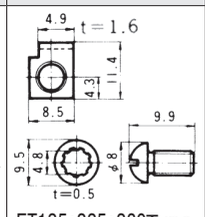
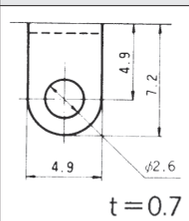
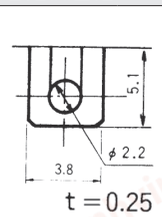
| Fig. | AC125V | AC250V |
|---|---|---|
| 03 | 3A | — |
| 05 | 5A | 3A |
| 06 | 6A | (2A) |
| 10 | 10A | (7A) |

| Fig. | AC125V | AC250V |
|---|---|---|
| 15 | 15A | 10A |
| 20 | 20A | 12A |
| 25 | 25A | 15A |
| 30 | 30A | (25A) |

| 1pole 3pole | 2pole 4pole 6pole | Key way | Key way | Key way |
|---|---|---|---|---|
| A | K | ON | — | OFF |
| C | M | OFF | — | (ON) |
| D•V | N | ON | — | ON |
| E | P | ON | OFF | ON |
| F | R | ON | — | (ON) |
| G | S | (ON) | OFF | (ON) |
| H | — | ON | OFF | (ON) |
| — | PA | ON | ON | OFF |

| Fig. | Terminal style |
|---|---|
| None | TAB#250 |
| 10 | Screw Terminal |
| 12 | Solder Terminal |
| 13 | Plate Connect SolderTerminal |

## Terminal Style and Dimentions

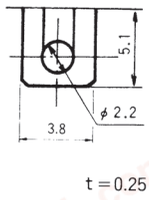
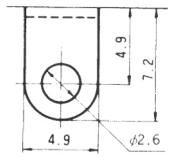
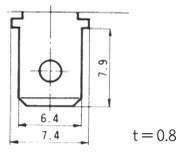
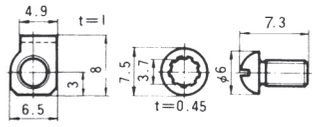
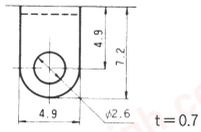
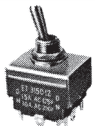
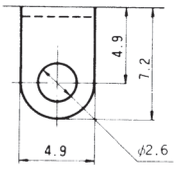
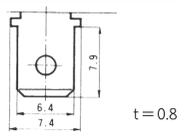
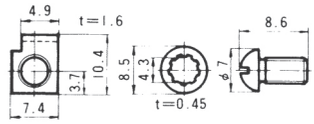
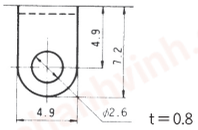
| TAB#250 (Style:—) | Screw Terminal (Style:10) | | | Solder Terminal | |
|---|---|---|---|---|---|
| | | | | Solder Terminal (Style:12•13) | Style:12 |
| | M3.5×0.6 | M4×0.7 | M4.5×0.75 | | ET103□12 ET206□12 Type |
|  t=0.8 |  ET115•215Type |  ET120•220Type |  ET125•225•230Type |  t=0.7 |  t=0.25 |

(ON) and (OFF) : Momentary.

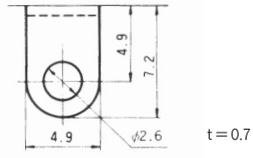
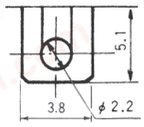
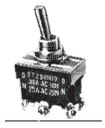
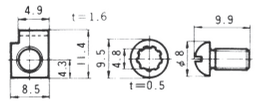
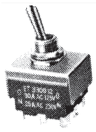
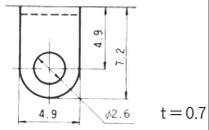
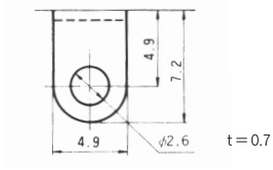
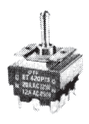
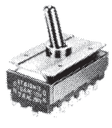
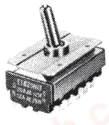
Please refer to P.564 for Common Specifications

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# ET Series Selection Table

| Part No. | Appearance | No. of poles | Rating | Switching function | Terminal style | Page |
|---|---|---|---|---|---|---|
| **ET103** |  | 1 | AC125V 3A | ON – OFF<br>ON – ON | Solder Terminal<br> | **416** |
| **ET105** |  | 1 | AC125V 5A<br>AC250V 3A | ON – OFF<br>ON – ON<br>ON – OFF – ON | Solder Terminal<br> | **416** |
| **ET205** |  | 2 | | | | **418** |
| **ET110** |  | 1 | AC125V 10A<br>AC250V 7A | ON – OFF<br>ON – ON<br>ON – OFF – ON<br>ON – (ON)<br>ON – OFF – (ON) | TAB # 250<br> | **417** |
| **ET210** |  | 2 | | | Screw Terminal (M3.5×0.6)<br> | **419** |
| | | | AC125V 10A | ON – ON – OFF | | |
| **ET115** |  | 1 | AC125V 15A<br>AC250V 10A | ON – OFF<br>OFF – (ON)<br>ON – ON<br>ON – OFF – ON<br>ON – (ON)<br>(ON) – OFF – (ON)<br>ON – OFF – (ON) | Solder Terminal<br> | **417** |
| **ET215** |  | 2 | | | | **419** |
| **ET315** |  | 3 | | | Solder Terminal<br> | **421** |
| **ET415** |  | 4 | | | | |
| **ET120** |  | 1 | AC125V 20A<br>AC250V 12A | ON – OFF<br>ON – ON | TAB # 250<br> | **417** |
| **ET125** |  | 1 | AC125V 25A<br>AC250V 15A | ON – OFF<br>ON – ON<br>ON – OFF – ON | Screw Terminal (M4.5×0.6)<br> | **418** |
| **ET225** |  | 2 | | | Solder Terminal<br> | **420** |

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| Part No. | Appearance | No. of poles | Rating | Switching function | Terminal style | Page |
|---|---|---|---|---|---|---|
| **ET425** |  | 4 | AC125V 25A<br>AC250V 15A | ON – OFF<br>ON – ON | Solder Terminal   | **424** |
| **ET206** |  | 2 | AC125V 6A | ON – OFF | Solder Terminal   | **418** |
| | | | AC125V 6A<br>AC250V 2A | ON – ON | | |
| **ET220** |  | 2 | AC125V 20A<br>AC250V 12A | ON – OFF<br>ON – ON<br>(ON) – OFF – (ON) | Solder Terminal | **420** |
| **ET230** |  | 2 | AC125V 30A<br>AC250V 25A | ON – OFF<br>ON – ON<br>ON – OFF – ON | Screw Terminal (M4.5×0.75)   | **420** |
| **ET330** |  | 3 | | | Solder Terminal   | **422** |
| **ET310** |  | 3 | AC125V 10A<br>AC250V 7A | ON – OFF<br>ON – ON<br>ON – OFF – ON | Solder Terminal | **421** |
| **ET410** |  | 4 | | | Solder Terminal   | **422** |
| **ET420** |  | 4 | AC125V 20A<br>AC250V 12A | ON – ON | | **423** |
| **ET420 Plate type** |  | | | | | **424** |
| **ET610N Plate type** |  | 6 | AC125V 10A<br>AC250V 7A | ON – ON | | **424** |
| **ET620N Plate type** |  | 6 | AC125V 20A<br>AC250V 12A | ON – ON | | **425** |

● Ratings are based on resistance load.
● Refer to P.425 for UL-recognized and CSA, PSE-certified products.

(ON) and (OFF) : Momentary.

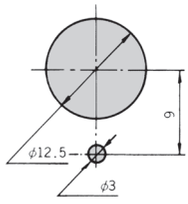
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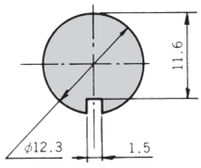
## ■Panel Cut-Out Dimensions

●Refer to P.426 for a list of accessories.

Panel thickness : 5.5mm max.




With Locking Ring

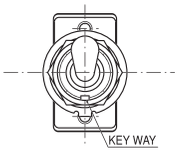


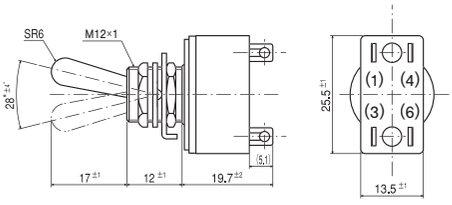

Without Locking Ring

Note : Panel thickness should be 5.5 mm max. unless otherwise specified.

## ET103□12 (1 pole)




Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET103A12-Z** | ON | — | OFF |
| Connecting terminals | 1–4 | — | — |
| ★ **ET103V12-Z** | ON | — | ON |
| Connecting terminals | 1–4 | — | 3–6 |

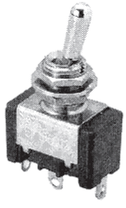
Terminal pins No.3 and No.6 are not available in switches with Switching Function "A".

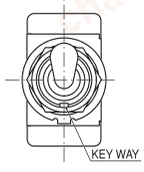
### ■Specifications

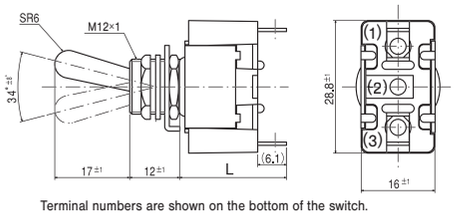
| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET103A12** | AC125V 3A | 30mΩ Max. (DC2V 100mA) | AC1500V 1minute | 100MΩ Min. (DC500V) | 10,000◻ cycles |
| **ET103V12** | | | | | |

## ET105□12 (1 pole)

Terminal pin No.2 is not available in switches with Switching Function "**A**".






Terminal numbers are shown on the bottom of the switch.

### L dimensions

| Part No. \ Terminal style | Solder Terminal |
|---|---|
| **ET105A12-Z** | 24.6±1 |
| **ET105D12-Z** | 24.6±1 |
| **ET105E12-Z** | 24.6±1 |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ☆ **ET105A12-Z** | ON | — | OFF |
| Connecting terminals | 1–3 | — | — |
| ☆ **ET105D12-Z** | ON | — | ON |
| ☆ **ET105E12-Z** | ON | OFF | ON |
| Connecting terminals | 2–3 | — | 2–1 |

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET105A12** | AC125V 5A AC250V 3A | 20mΩ Max. (DC2V 100mA) | AC1500V 1minute | 100MΩ Min. (DC500V) | 20,000◻ cycles |
| **ET105D12** | | | | | |
| **ET105E12** | | | | | |

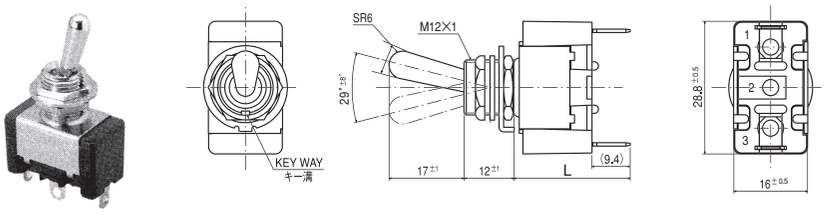
☆ : Semi-standard products. ★ : Made to order products.

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## ET110 (1 pole)

Terminal pin No.2 is not available in switches with Switching Function "**A**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET110A■**<br>**ET110D■**<br>**ET110E■** | AC125V 10A<br>AC250V 7A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 30,000 cycles |
| **ET110F■**<br>**ET110H■** | AC125V 10A<br>AC250V 7A | | | | 20,000 cycles |

### L dimensions

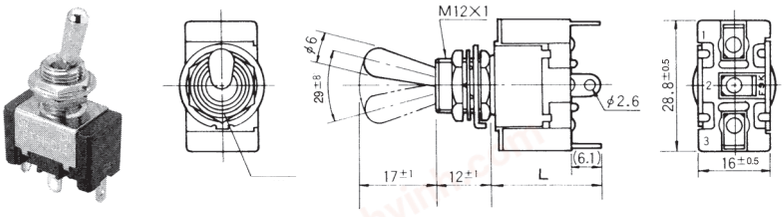
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET110A■•D■-Z** | – | – | $24.6^{\pm1}$ |
| **ET110E■-Z** | – | – | $24.6^{\pm1}$ |
| **ET110F■-Z** | $27.6^{\pm1}$ | – | $24.6^{\pm1}$ |
| **ET110H■-Z** | $27.6^{\pm1}$ | $25.4^{\pm1}$ | $24.6^{\pm1}$ |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET110A■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 | — | — |
| **ET110D■-Z** | ON | — | ON |
| **ET110E■-Z** | ON | OFF | ON |
| **ET110F■-Z** | ON | — | (ON) |
| **ET110H■-Z** | ON | OFF | (ON) |
| Connecting terminals | 2–3 | — | 2–1 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

## ET115 (1 pole)

Terminal pin No.2 is not available in switches with Switching Function "**A**", "**B**", or " ".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET115A■**<br>**ET115D■**<br>**ET115E■** | AC125V 15A<br>AC250V 10A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 30,000 cycles |
| **ET115C■**<br>**ET115G■**<br>**ET115H■** | AC125V 15A<br>AC250V 10A | | | | 20,000 cycles |

### L dimensions

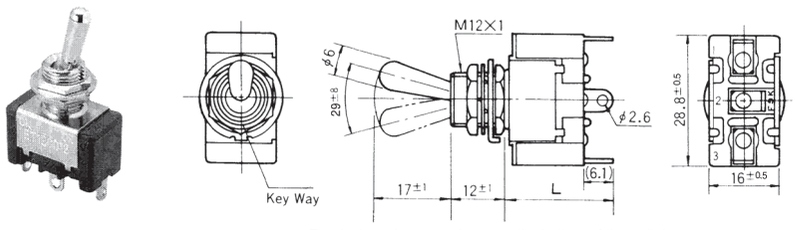
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET115A■•D■-Z** | $27.6^{\pm1}$ | $25.4^{\pm1}$ | $24.6^{\pm1}$ |
| **ET115E■-Z** | $27.6^{\pm1}$ | $25.4^{\pm1}$ | $24.6^{\pm1}$ |
| **ET115C■•F~H■-Z** | – | $25.4^{\pm1}$ | $24.6^{\pm1}$ |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET115A■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 | — | — |
| **ET115C■-Z** | OFF | — | (ON) |
| Connecting terminals | — | — | 1–3 |
| **ET115D■-Z** | ON | — | ON |
| **ET115E■-Z** | ON | OFF | ON |
| **ET115G■-Z** | (ON) | OFF | (ON) |
| **ET115H■-Z** | ON | OFF | (ON) |
| Connecting terminals | 2–3 | — | 2–1 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

## ET120 ( pole)

Terminal pin No.2 is not available in switches with Switching Function "**A**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET120A■**<br>**ET120D■** | AC125V 20A<br>AC250V 12A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000 cycles |

### L dimensions

| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET120A■•D■-Z** | — | — | $24.6^{\pm1}$ |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET120A■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 | — | — |
| **ET120D■-Z** | ON | — | ON |
| Connecting terminals | 2–3 | — | 2–1 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

(ON) : Momentary.

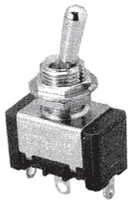
■ shows the terminal style "(blank)", "10", or "12".

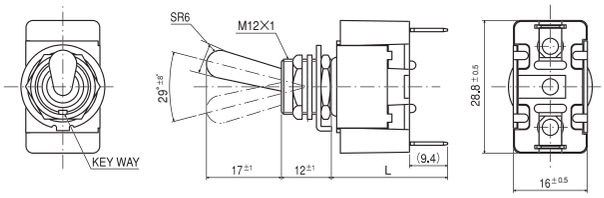
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# ET

## ET125 (1 pole)

Terminal pin No.2 is not available in switches with Switching Function "**A**".






Terminal numbers are shown on the bottom of the switch.

### L dimensions

| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET125A■–Z**<br>**ET125D■–Z** | 27.6±1 | 28.8±1 | 24.6±1 |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET125A■–Z** | ON | — | OFF |
| Connecting terminals | 1–3 | — | — |
| **ET125D■–Z** | ON | — | ON |
| Connecting terminals | 2–3 | — | 2–1 |

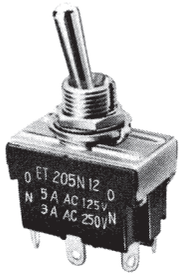
■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

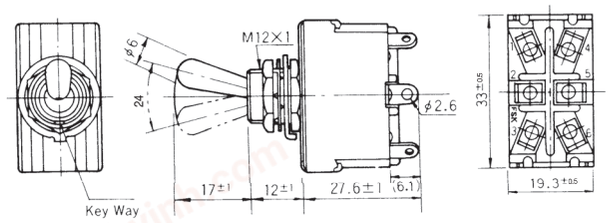
### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET125A■**<br>**ET125D■** | AC125V 25A<br>AC250V 15A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

## ET205 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**".




Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ **ET205K12–Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6 | — | — |
| ★ **ET205N12–Z** | ON | — | ON |
| ★ **ET205P12–Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |

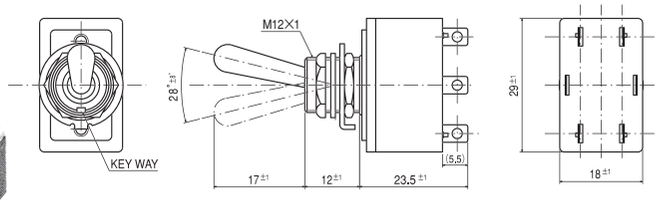
### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET205K12**<br>**ET205N12**<br>**ET205P12** | AC125V 5A<br>AC250V 3A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

## ET206□12 (2 poles)

Terminal pins No.3 and No.6 are not available in switches with Switching Function "**K**".




Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ **ET206K12–Z** | ON | — | OFF |
| Connecting terminals | 2–1 5–4 | — | — |
| ★ **ET206N12–Z** | ON | — | ON |
| Connecting terminals | 2–1 5–4 | — | 2–3 5–6 |

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET206K12** | AC125V 6A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 10,000<br>cycles |
| **ET206N12** | AC125V 6A<br>AC250V 2A | | | | |

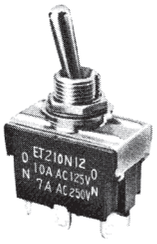
■ shows the terminal style "(blank)", "**10**", or "**12**". ☆ : Semi-standard products. ★ : Made to order products.

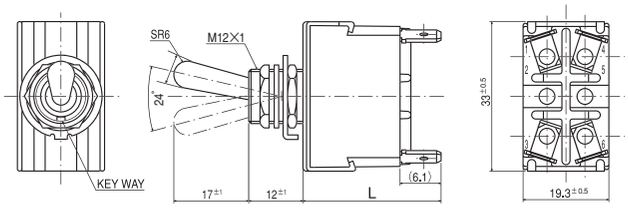
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## ET210 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET210K■**<br>**ET210N■**<br>**ET210P■** | AC125V 10A<br>AC250V 7A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 30,000 cycles |
| **ET210PA12** | AC125V 10A | | | | 20,000 cycles |

### L dimensions

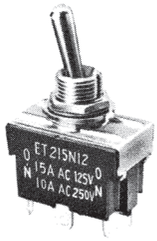
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET210K■•N■–Z** | $30.6^{\pm1}$ | $28.4^{\pm1}$ | $27.6^{\pm1}$ |
| **ET210P■–Z** | $30.6^{\pm1}$ | $28.4^{\pm1}$ | $27.6^{\pm1}$ |
| **ET210PA12–Z** | – | – | $27.6^{\pm1}$ |

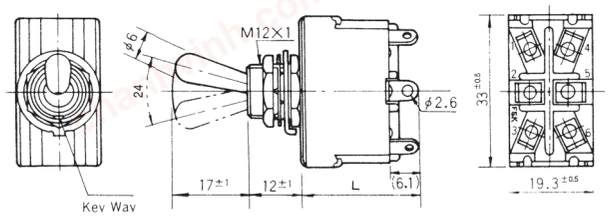
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET210K■–Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6 | — | — |
| **ET210N■–Z** | ON | — | ON |
| **ET210P■–Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |
| ★ **ET210PA12–Z** | ON | ON | OFF |
| Connecting terminals | 2–3 5–6 | 5–6 | — |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.of part numbers.

## ET215 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**", "**L**", or "**M**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET215K■**<br>**ET215N■** | AC125V 15A<br>AC250V 10A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 30,000 cycles |
| **ET215P■**<br>**ET215M■**<br>**ET215R■**<br>**ET215S■** | AC125V 15A<br>AC250V 10A | | | | 20,000 cycles |

### L dimensions

| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET215K■•N■–Z** | $30.6^{\pm1}$ | $28.4^{\pm1}$ | $27.6^{\pm1}$ |
| **ET215P■–Z** | $30.6^{\pm1}$ | $28.4^{\pm1}$ | $27.6^{\pm1}$ |
| **ET215M·R·S ■–Z** | – | $28.4^{\pm1}$ | $27.6^{\pm1}$ |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET215K■–Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6 | — | — |
| **ET215M■–Z** | OFF | — | (ON) |
| Connecting terminals | — | — | 1–3 4–6 |
| **ET215N■–Z** | ON | — | ON |
| **ET215P■–Z** | ON | OFF | ON |
| **ET215R■–Z** | ON | — | (ON) |
| **ET215S■–Z** | (ON) | OFF | (ON) |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.of part numbers.

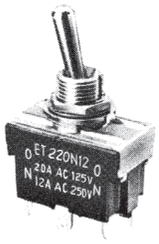
(ON) and (OFF) : Momentary. ■ shows the terminal style "(blank)", "**10**", or "**12**".

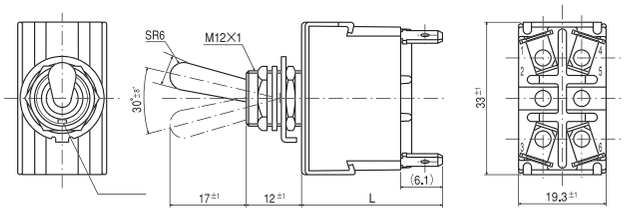
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# ET

## ET220 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**", "**L**", or "**M**".






Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET220K■**<br>**ET220N■** | AC125V 20A<br>AC250V 12A | 20mΩMax.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |
| **ET220S■** | AC125V 20A<br>AC250V 12A | | | | |

### L dimensions

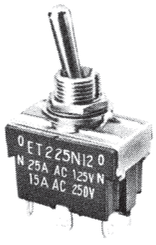
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET220K■•N■-Z** | – | – | $27.6^{\pm 1}$ |
| **ET220S-Z** | $30.6^{\pm 1}$ | $31.8^{\pm 1}$ | $27.6^{\pm 1}$ |

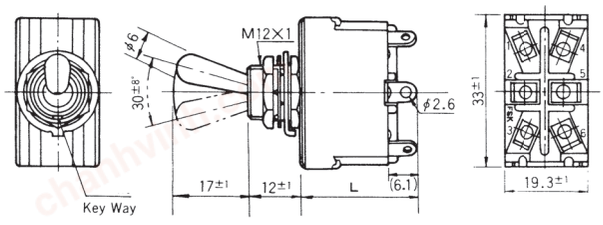
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET220K■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6 | — | — |
| **ET220N■-Z** | ON | — | ON |
| **ET220S■-Z** | (ON) | OFF | (ON) |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

## ET225 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**".






Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET225K■**<br>**ET225N■**<br>**ET225P■** | AC125V 25A<br>AC250V 15A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

### L dimensions

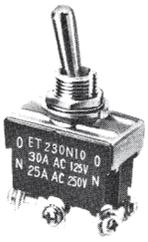
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET225K■•N■-Z**<br>**ET225P■-Z** | $30.6^{\pm 1}$ | $31.8^{\pm 1}$ | $27.6^{\pm 1}$ |

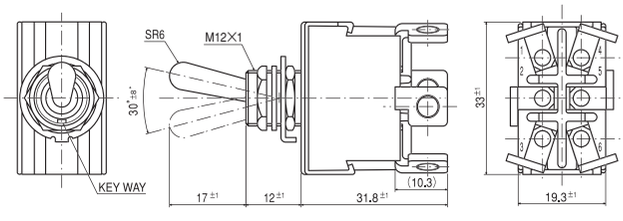
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET225K■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6 | — | — |
| **ET225N■-Z** | ON | — | ON |
| **ET225P■-Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

## ET230 (2 poles)

Terminal pins No.2 and No.5 are not available in switches with Switching Function "**K**".






Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET230N10**<br>**ET230P10** | AC250V 25A<br>AC125V 30A | 20mΩMax.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ **ET230N■-Z** | ON | — | ON |
| ★ **ET230P■-Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6 | — | 2–1 5–4 |

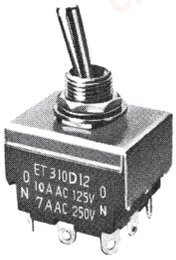
(ON) : Momentary. ■ shows the terminal style "(blank)", "**10**", or "**12**". ★ : Made to order products.

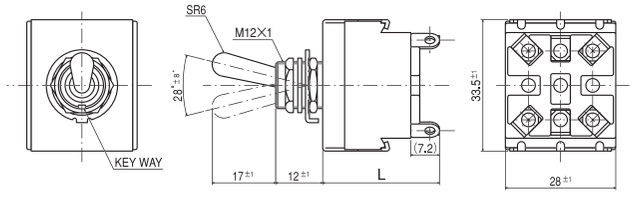
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## ET310 (3 poles)

Terminal pins No.2, No.5, and No.8 are not available in switches with Switching Function "**A**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET310A■**<br>**ET310D■**<br>**ET310E■** | AC125V 10A<br>AC250V 7A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

### L寸法/L dimensions

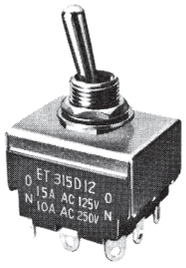
| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET310A■-Z** | $34^{\pm 2}$ | – | $29.1^{\pm 1}$ |
| **ET310D■-Z**<br>**ET310E■-Z** | $36.4^{\pm 1}$ | | |

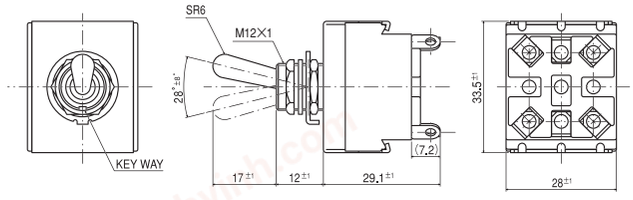
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET310A■-Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6<br>7–9 | — | — |
| **ET310D■-Z** | ON | — | ON |
| **ET310E■-Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6<br>8–9 | — | 2–1 5–4<br>8–7 |

■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

## ET315□12 (3 poles)

Terminal pins No.2, No.5, and No.8 are not available in switches with Switching Function "**A**".




Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET315D12**<br>**ET315E12** | AC125V 15A<br>AC250V 10A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **★ET315D12-Z** | ON | — | ON |
| **★ET315E12-Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6<br>8–9 | — | 2–1 5–4<br>8–7 |

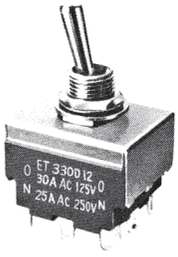
★ : Made to order products. (ON) : Momentary. ■ shows the terminal style "(blank)" or "**12**".

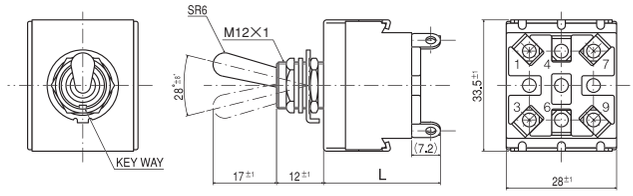
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## ET

### ET330□12 (3 poles)

Terminal pins No.2, No.5, and No.8 are not available in switches with Switching Function "**A**".




Terminal numbers are shown on the bottom of the switch.

#### L dimensions

| Part No. \ Terminal style | TAB#250 | ScrewTerminal | Solder Terminal |
|---|---|---|---|
| **ET330A■–Z** | $33.9^{\pm 2}$ | – | $29.1^{\pm 1}$ |
| **ET330D12–Z**<br>**ET330E12–Z** | – | | |

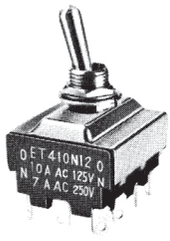
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| **ET330A■–Z** | ON | — | OFF |
| Connecting terminals | 1–3 4–6<br>7–9 | — | — |
| ☆**ET330D12–Z** | ON | — | ON |
| ★**ET330E12–Z** | ON | OFF | ON |
| Connecting terminals | 2–3 5–6<br>8–9 | — | 2–1 5–4<br>8–7 |

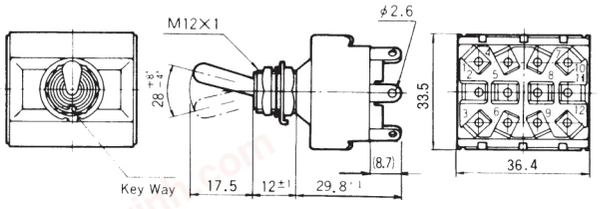
■ : Refer to "Table of Part Numbers" on P.425 for a full list of part numbers.

#### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET330A■**<br>**ET330D12**<br>**ET330E12** | AC125V 30A<br>AC250V 25A | 20mΩMax.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

### ET410□12 (4 poles)




Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★**ET410N12–Z** | ON | — | ON |
| Connecting terminals | 2–3 5–6<br>8–9 11–12 | — | 2–1 5–4<br>8–7 11–10 |

#### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| **ET410N12** | AC125V 10A<br>AC250V 7A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

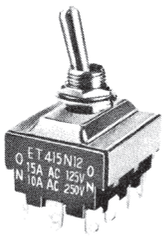
■ shows the terminal style "(blank)", "10", or "12". (ON) : Momentary. ☆ : Semi-standard products. ★ : Made to order products.

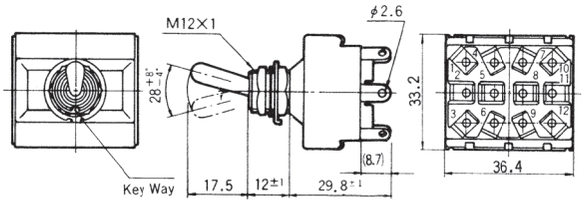
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## ET415□12 (4 poles)

Terminal pins No.2, No.5, No.8, and No.11 are not available in switches with Switching Function "**K**".




Terminal numbers are shown on the bottom of the switch.

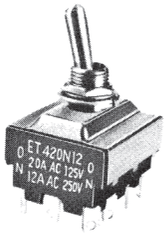
| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ET415P12-Z | ON | OFF | ON |
| Connecting terminals | 2-3 5-6<br>8-9 11-12 | — | 1-2 5-4<br>8-7 11-10 |

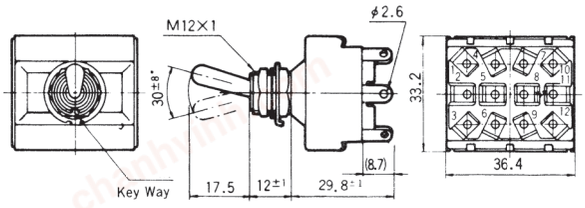
### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET415P12 | AC125V 15A<br>AC250V 10A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

## ET420□12 (4 poles)

Terminal pins No.2, No.5, No.8, and No.11 are not available in switches with Switching Function "**K**".




Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ET420N12-Z | ON | — | ON |
| Connecting terminals | 2-3 5-6<br>8-9 11-12 | — | 2-1 5-4<br>8-7 11-10 |

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET420N12 | AC125V 20A<br>AC250V 12A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

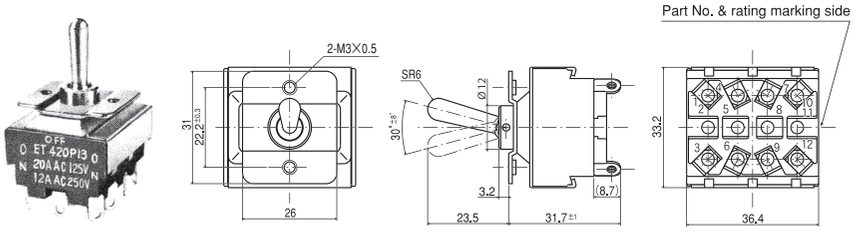
★ : Made to order products.

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# ET

## ET420□13 (4 poles)

Terminal pins No.2, No.5, No.8, and No.11 are not available in switches with Switching Function "K".




| Part No. \ Switching function | Viewed from part No. and rating marking side | | |
|---|---|---|---|
| ★ET420N13-Z | ON | — | ON |
| Connecting terminals | 2-3 5-6<br>8-9 11-12 | — | 2-1 5-4<br>8-7 11-10 |

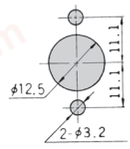
Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET420N13 | AC125V 20A<br>AC250V 12A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

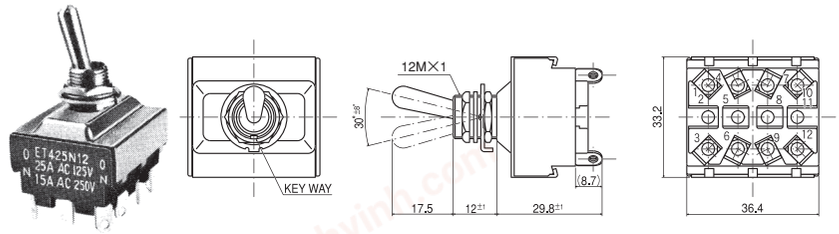
### ■Panel Cut-Out Dimensions

(Plate mounting type)




## ET425□12 (4 poles)

Terminal pins No.2, No.5, No.8, and No.11 are not available in switches with Switching Function "K".



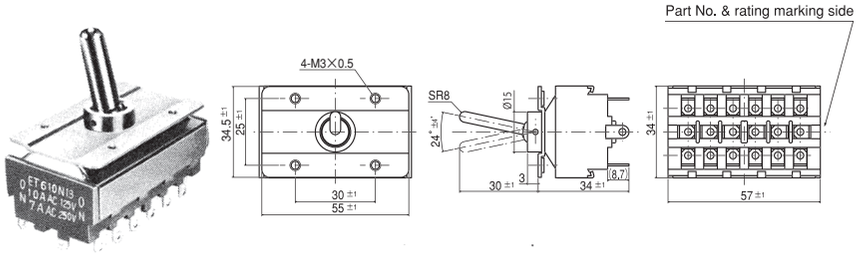

| Part No. \ Switching function | Key way | Key way | Key way |
|---|---|---|---|
| ★ET425K12-Z | ON | — | OFF |
| Connecting terminals | 1-3 4-6<br>7-9 10-12 | — | — |
| ★ET425N12-Z | ON | — | ON |
| Connecting terminals | 2-3 5-6<br>8-9 11-12 | — | 2-1 5-4<br>8-7 11-10 |

Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET425K12<br>ET425N12 | AC125V 25A<br>AC250V 15A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 20,000<br>cycles |

## ET610N13 (6 poles)




| Part No. \ Switching function | Viewed from part No. and rating marking side | | |
|---|---|---|---|
| ☆ET610N13-Z | ON | — | ON |
| Connecting terminals | 2-3 5-6<br>8-9 11-12<br>14-15 17-18 | — | 2-1 5-4<br>8-7 11-10<br>14-13 17-16 |

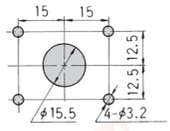
Terminal numbers are shown on the bottom of the switch.

### ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET610N13 | AC125V 10A<br>AC250V 7A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 5,000<br>cycles |

### ■Panel Cut-Out Dimensions

(Plate mounting type)

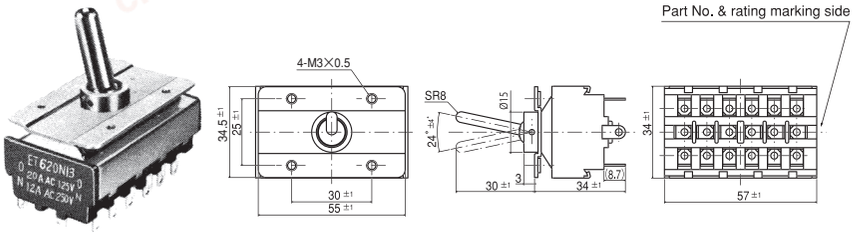



☆ : Semi-standard products. ★ : Made to order products.

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## ET620N13 (6 poles)

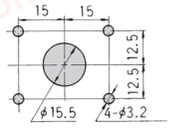



Terminal numbers are shown on the bottom of the switch.

| Part No. \ Switching function | Viewed from part No. and rating marking side | | |
|---|---|---|---|
| |  |  |  |
| ★ET620N13-Z | ON | — | ON |
| Connecting terminals | 2–3 5–6<br>8–9 11–12<br>14–15 17–18 | — | 2–1 5–4<br>8–7 11–10<br>14–13 17–16 |

## ■Panel Cut-Out Dimensions

(Plate mounting type)




## ■Specifications

| Rating | | Initial contact resistance | Dielectric strength | Insulation resistance | Electrical life |
|---|---|---|---|---|---|
| ET620N13 | AC125V 20A<br>AC250V 12A | 20mΩ Max.<br>(DC2V 100mA) | AC1500V<br>1minute | 100MΩ Min.<br>(DC500V) | 5,000<br>cycles |

## ■Table of Part Numbers

| | Part No. | ※1. | Part No. | ※1. | Part No. | ※1. | Part No. | ※1. |
|---|---|---|---|---|---|---|---|---|
| TAB terminals | ★ ET110F-Z | | ★ ⓈⓅ ET115D-Z | | ★ ⓈⓅ ET215N-Z | 40.0 | ET225P-Z | |
| | ★ ET110H-Z | | ★ ET125A-Z | 26.6 | ☆ ⓈⓅ ET215P-Z | 39.7 | ★ ET330A-Z | |
| | ⓈⓅ ET115A-Z | 29.4 | ★ ⓈⓅ ET215K-Z | 39.3 | ☆ ET225K-Z | 39.4 | | |
| Screw terminals | ☆ⓅⓈⓅ ET115A10-Z | | ★Ⓟ ET125A10-Z | | ☆ ⓈⓅ ET215N10-Z | | ★ ET230N10-Z | 54.4 |
| | ★ⓅⓈⓅ ET115D10-Z | | ★ⓅⓈⓅ ET215K10-Z | | ★ ⓈⓅ ET215P10-Z | | ★ ET230P10-Z | |
| Solder terminals | ⓈⓅ ET103A12-Z | 21.0 | ☆ Ⓢ ET120A12-Z | | ★ ET215M12-Z | | ★ ⓈⓅ ET315D12-Z | 54.7 |
| | ★ ET103V12-Z | 21.0 | ★ Ⓢ ET120D12-Z | | ☆ ⓈⓅ ET215N12-Z | 38.1 | ★ ⓈⓅ ET315E12-Z | |
| | ☆ ET105A12-Z | | ☆ ET125A12-Z | 25.9 | ★ ⓈⓅ ET215P12-Z | 37.8 | ★ ET330A12-Z | |
| | ☆ ET105D12-Z | 25.8 | ★ ET125D12-Z | 26.0 | ★ ET215R12-Z | | ☆ ET330D12-Z | 54.2 |
| | ☆ ET105E12-Z | | ★ ET205K12-Z | | ET215S12-Z | 38.4 | ★ ET330E12-Z | |
| | ☆ ET110A12-Z | 25.8 | ★ ET205N12-Z | | ★ Ⓢ ET220K12-Z | | ★ ET410N12-Z | 57.4 |
| | ☆ ET110D12-Z | | ★ ET205P12-Z | | ★ Ⓢ ET220N12-Z | | ★ ⓈⓅ ET415P12-Z | |
| | ★ ET110E12-Z | | ⓈⓅ ET206K12-Z | 26.1 | ★ ET220S12-Z | | ★ ET420N12-Z | |
| | ⓈⓅ ET115A12-Z | 25.9 | ☆ ⓈⓅ ET206N12-Z | 26.3 | ☆ ET225K12-Z | 38.1 | ★ ET420N13-Z | |
| | ★ ET115C12-Z | | ☆ ET210K12-Z | | ET225N12-Z | 38.6 | ★ ET425K12-Z | |
| | ⓈⓅ ET115D12-Z | 25.9 | ☆ ET210N12-Z | 38.0 | ET225P12-Z | | ★ ET425N12-Z | |
| | ★ ⓈⓅ ET115E12-Z | 25.9 | ☆ ET210P12-Z | 37.9 | ★ ET310A12-Z | 54.0 | ☆ ET610N13-Z | 105.0 |
| | ★ ET115G12-Z | | ★ ET210PA12-Z | | ☆ ET310D12-Z | 54.6 | ★ ET620N13-Z | |
| | ★ ET115H12-Z | 25.0 | ☆ ⓈⓅ ET215K12-Z | 37.9 | ☆ ET310E12-Z | | —— | — |

As shown in the above table, not all products are UL-recognized or CSA-certified.Please check with your local sales representative if you have any questions.

Note: For overseas standards, see P.627.

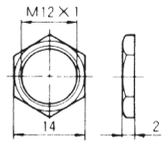
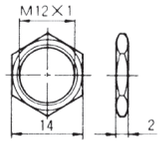
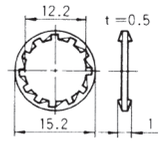
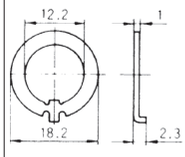
※1 : Switch mass (g) : includes accessories = hex nut, locking ring, lock washer and terminal screw

★ : Made to order products. ☆ : Semi-standard products.

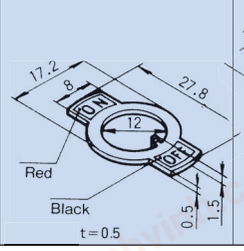
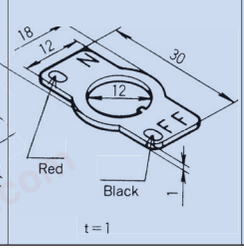
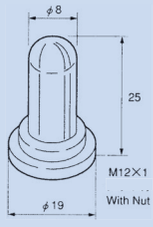
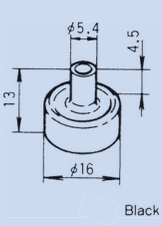
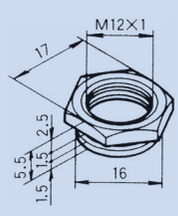
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## ET

### ■ Standard Accessories ——— 《Supplied with switch》

| Part Name | Hex Nut | Hex Nut | Lockwasher | Locking Ring |
|---|---|---|---|---|
| Part No. | **140008010235** | **140008010221** | **140008030055** | **140008020065** |
| Dimensions |   |   |   |   |
| Finish | Nickel plated | Zinc plated | Zinc plated | Zinc plated |

### ■ Optional Accessories ——— 《Supplied separately》

| Type | ET·8B | | ET | ET | |
|---|---|---|---|---|---|
| Part Name | Plate | Plate | Waterproof boot | Boot | Bushing |
| Part No. | **140008040021** | **140008040025** | **Red 140000610335**<br>**Gray 140000610334**<br>**Black 140000610333** | **140000610080** | **140008010244** |
| Dimensions |   |   |   |   |   |

### ■ Handling Precautions

**1. Soldering Specifications**

(1)Manual Soldering
Device：Soldering iron
420℃, Max.; 3 seconds, Max.

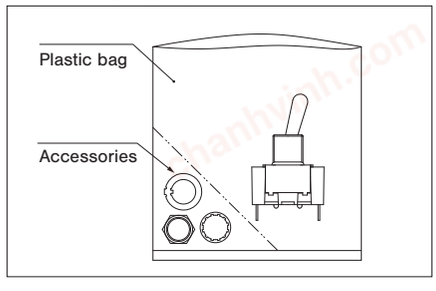
(2) Waterproof boot
①The boot is fixed to the switch with the built-in screw.
②The boot cannot be used for plate-mounting switches.

**2. Flux Cleaning**

(1) Solvent : Fluorine or Alcohol type.

(2) The ET series are not washable. To wash the PC board, clean the soldering surface of the PC board with a brush so that the switch is not exposed to the cleaning solution.

### ■ Packaging Specification




:Optional Accessories.