

## Description

Single, two and three pole magnetic and hydraulic-magnetic circuit breakers with trip-free mechanism and toggle actuation. A choice of fast magnetic only or hydraulically delayed switching characteristics (S-type MO or HM CBE to EN 60934) ensures suitability for a wide range of applications. Featuring a combi-foot design for symmetric rail mounting. Low temperature sensitivity at rated load. Approved to CBE standard EN 60934 (IEC 60934).

## Typical applications

Power supplies, control equipment, communication systems, EDP systems.

## Standard current ratings and typical internal resistance values

| Current rating (A) | Internal resistance values (Ω) per pole |        |            |            |
|--------------------|-----------------------------------------|--------|------------|------------|
|                    | F1                                      | F2     | K1, M1, T1 | K2, M2, T2 |
| 0,02               | 1 493                                   | 953    | 2 669      | 2 457      |
| 0,05               | 276                                     | 152    | 452        | 376        |
| 0,1                | 58                                      | 37     | 100        | 94         |
| 0,25               | 8,2                                     | 6,0    | 15,5       | 14,7       |
| 0,5                | 2,3                                     | 1,47   | 3,9        | 3,2        |
| 0,75               | 0,98                                    | 0,63   | 1,65       | 1,56       |
| 1                  | 0,58                                    | 0,35   | 0,95       | 0,90       |
| 2                  | 0,145                                   | 0,096  | 0,26       | 0,20       |
| 2,5                | 0,096                                   | 0,061  | 0,15       | 0,15       |
| 3                  | 0,065                                   | 0,048  | 0,10       | 0,10       |
| 5                  | 0,025                                   | < 0,02 | 0,042      | 0,040      |
| 6                  | < 0,02                                  | < 0,02 | 0,029      | 0,028      |
| 8                  | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 10                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 12                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 15                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 16                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 20                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 25                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 30                 | < 0,02                                  | < 0,02 | < 0,02     | < 0,02     |
| 40                 | < 0,01                                  | -      | < 0,01     | -          |
| 50                 | < 0,01                                  | -      | < 0,01     | -          |



## Technical data

For further details please see: [http://www.e-t-a.de/ti\\_e](http://www.e-t-a.de/ti_e)

|                                                    |                                                                                                                                                                                                                                                                       |                                                                                                          |                                                                    |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Voltage rating                                     | 3 AC 415V; AC 240V (50/60Hz); DC 80V (higher DC voltages to special order)                                                                                                                                                                                            |                                                                                                          |                                                                    |
| Current rating range                               | 0.02...50 A DC<br>0.02...30 A AC                                                                                                                                                                                                                                      |                                                                                                          |                                                                    |
| Auxiliary circuit                                  | 1 A, AC 240 V/DC 65 V; 0.5 A DC 80 V                                                                                                                                                                                                                                  |                                                                                                          |                                                                    |
| Typical life                                       | 3 AC 415 V AC 240 V:<br>0.02...30 A 6,000 operations at 1 x I <sub>N</sub> , inductive<br>10,000 operations at 1 x I <sub>N</sub> , resistive                                                                                                                         |                                                                                                          |                                                                    |
| WDC 80 V:                                          | 0.02...25 A 6,000 operations at 1 x I <sub>N</sub> , inductive<br>0.02...30 A 10,000 operations at 1 x I <sub>N</sub> , resistive<br>40 + 50 A 6,000 operations at 1 x I <sub>N</sub> , resistive                                                                     |                                                                                                          |                                                                    |
| Ambient temperature                                | -40...+85 °C (-40...+185 °F)                                                                                                                                                                                                                                          |                                                                                                          |                                                                    |
| Insulation co-ordination (IEC 60664 and 60664A)    | rated impulse withstand voltage<br>2.5 kV<br>reinforced insulation in operating area                                                                                                                                                                                  | pollution degree<br>2                                                                                    |                                                                    |
| Dielectric strength (IEC 60664 and 60664A)         | operating area test voltage AC 3,000 V<br>Line to Load test voltage AC 1,500 V<br>pole to pole (2- and 3-pole) test voltage AC 1,500 V<br>main to auxiliary circuit test voltage AC 1,500 V                                                                           |                                                                                                          |                                                                    |
| Insulation resistance                              | > 100 MΩ (DC 500 V)                                                                                                                                                                                                                                                   |                                                                                                          |                                                                    |
| Interrupting capacity IEC 60934 - test sequence E4 | 6 x I <sub>N</sub> at AC;<br>4 x I <sub>N</sub> at DC                                                                                                                                                                                                                 |                                                                                                          |                                                                    |
| Interrupting capacity (UL 1077)                    | AC:                                                                                                                                                                                                                                                                   | I <sub>N</sub> 0.02...20 A<br>1-pole AC 250 V/3,500A<br>2-pole AC 250 V/3,500A<br>3-pole 3AC 250V/3,500A | 25...30 A<br>AC 250 V/3,500A<br>AC 250 V/5,000A<br>3AC 250V/5,000A |
|                                                    | DC:                                                                                                                                                                                                                                                                   | 1-pole 0.02...50 A<br>2-pole 0.02...30 A                                                                 | DC 80 V/3,500 A<br>DC 80 V/3500 A                                  |
| Degree of protection (IEC 60529/DIN 40050)         | operating area IP40<br>terminal area IP20                                                                                                                                                                                                                             |                                                                                                          |                                                                    |
| Vibration                                          | with toggle down: 10 g at 0.9 I <sub>N</sub><br>directions 1, 2, 3, 4, 5: 10 g at 1 x I <sub>N</sub><br>with curves F1, F2: 10 g at 0.8 x I <sub>N</sub> in all planes.<br>(57-2000 Hz) ± 0.76 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc<br>10 frequency cycles/axis |                                                                                                          |                                                                    |
| Shock                                              | directions 1, 2, 3, 4, 5: 100 g (11 ms) at 1 x I <sub>N</sub><br>direction 6: 100 g (11 ms) at 0.8 x I <sub>N</sub><br>with curves F1, F2: 100 g (11 ms) at 0.8 x I <sub>N</sub><br>to IEC 60068-2-27, test Ea                                                        |                                                                                                          |                                                                    |
| Corrosion                                          | 96 hours at 5 % salt mist,<br>to IEC 60068-2-11, test Ka                                                                                                                                                                                                              |                                                                                                          |                                                                    |
| Humidity                                           | 240 hours at 95 % RH,<br>to IEC 60068-2-78, test Cab                                                                                                                                                                                                                  |                                                                                                          |                                                                    |
| Mass                                               | approx. 98 g per pole                                                                                                                                                                                                                                                 |                                                                                                          |                                                                    |

## Ordering information

### Type No.

**8340** circuit breaker with toggle actuator

### Mounting

**T** rail mounting

### Configuration

**1** snap-on installation

### Number of poles

**1** single pole protected

**2** two pole protected

**3** three pole protected

} magnetic,  
hydraulic-magnetic

### Panel hardware

**0** without panel hardware

### Terminal design (main contact)

**K1** recessed screw/pressure plates M4

### Characteristic curve \*)

#### Characteristic curve, instantaneous:

**F1** DC

**F2** AC 50/60 Hz

#### Short delay:

**K1** DC

**K2** AC 50/60 Hz

#### Medium delay:

**M1** DC

**M2** AC 50/60 Hz

#### Long delay:

**T1** DC

**T2** AC 50/60 Hz

### Actuator colour / design

**A** black, long toggle

**K** black, short toggle

### Marking on actuator

**0** without marking

**L** I-O; ON-OFF

**M** I-O; ON-OFF ( $I_N$ ,  $U_N$ , trip curve, schematic diagram on housing top)

**N** I-O; ON-OFF ( $I_N$ , on housing top)

### Auxiliary contacts

**H0** without auxiliary contacts

**H1** with auxiliary contact

**H2** with auxiliary contact on one pole only (multipole)

### Auxiliary contact function

(see internal connection diagrams)

**2** 1 N/O contact

**3** 1 N/C contact

### Auxiliary contact terminal design

**6** screw/pressure plate M3

### Current ratings

**0.02...50 A**

**8340 - T 1 1 0 - K1 M1 - A L H1 2 6 - 10 A** ordering example

This is a metric design and millimeter dimensions take precedence ( $\frac{\text{mm}}{\text{inch}}$ )

\*) **Other characteristic curves upon request** (e.g. pulse delayed, for high inrush currents or capacitive loads)

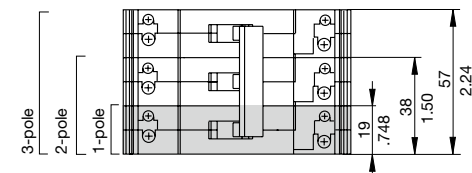
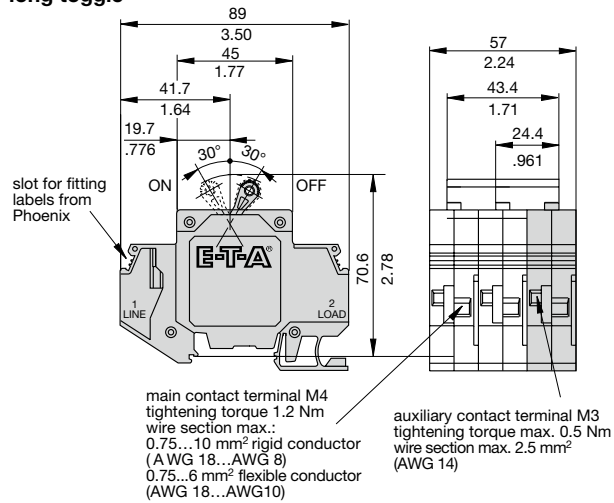
Please be informed that we have minimum ordering quantities to be observed.

## Approvals

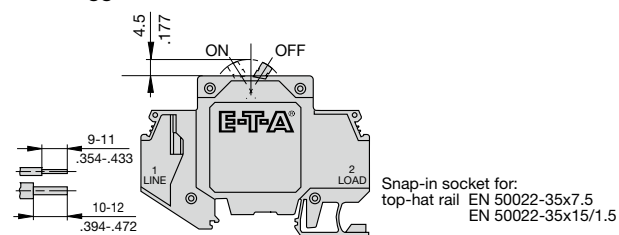
| Authority                          | Standard       | Rated voltage                                     | Current ratings                                                                                     |
|------------------------------------|----------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| VDE                                | IEC / EN 60934 | AC 240/415 V<br>AC 240 V<br>DC 80 V               | 0.02 A...30 A<br>0.02 A...30 A<br>0.02 A...50 A                                                     |
| UL                                 | UL 1077        | AC 250 V<br>DC 80 V<br>DC 80 V                    | 0.02 A...30 A<br>0.02 A...50 A<br>100 A (2 poles in parallel)                                       |
| UL                                 | UL 489A        | DC 80 V                                           | 0.05 A...30 A<br>(1 + 2 pole)                                                                       |
| CSA                                | C22.2 No 235   | AC 250 V<br>DC 80 V                               | 0.02 A...30 A<br>0.02 A...30 A                                                                      |
| CQC                                | GB 17701       | AC 240/415 V<br>AC 240 V<br>DC 80 V               | 0.02 A...30 A<br>0.02 A...30 A<br>0.02 A...50 A                                                     |
| QPL Sweden Defence Material Admin. | MIL-C-55629    | AC 240 V<br>DC 50 V<br>AC 240 V<br>AC 240 / 415 V | 1 A...30 A (8340-F410)<br>1 A...30 A (8340-410)<br>1 A...30 A (8340-F420)<br>1 A...30 A (8340-F430) |

## Dimensions

### long toggle

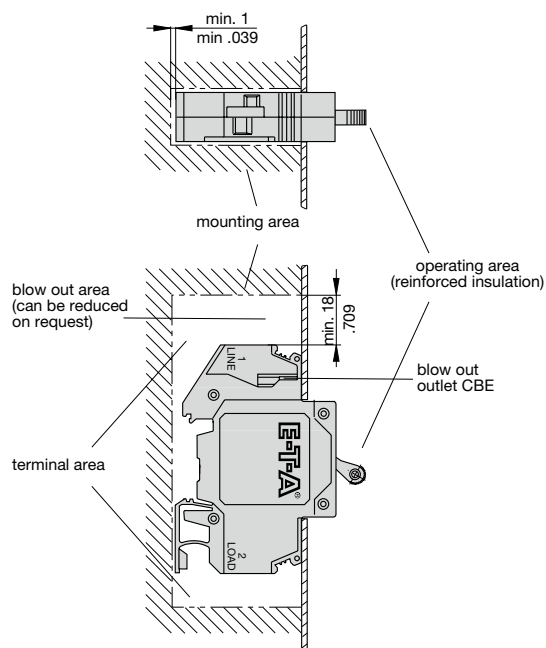


### short toggle



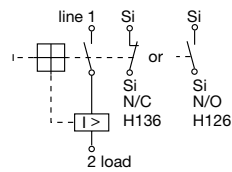
Snap-in socket for:  
top-hat rail EN 50022-35x7.5  
EN 50022-35x15/1.5

## Installation drawing

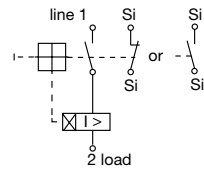


## Internal connection diagrams

### 1-pole protected magnetically

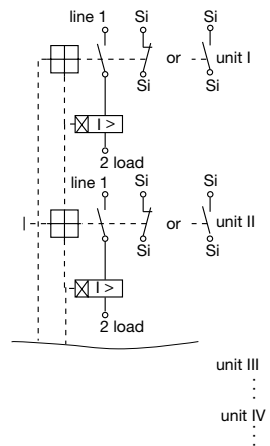


### 1-pole protected hydraulic-magnetically

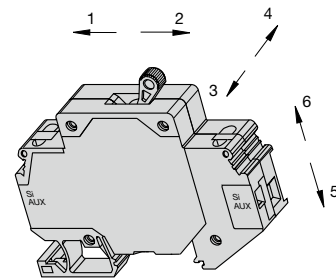


Optional N/C or N/O auxiliary contact (Si)

### multipole

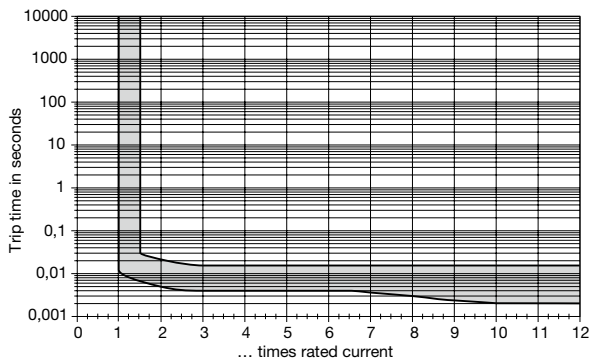


## Shock directions

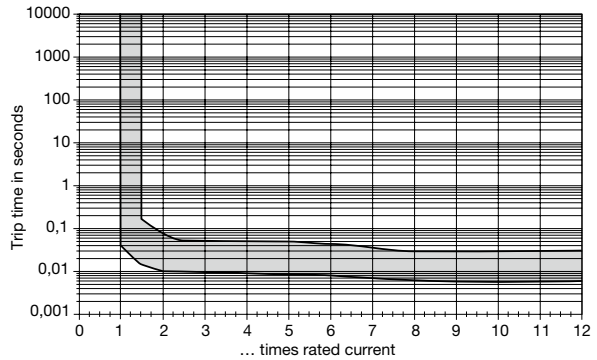


Typical time/current characteristics at 23 °C / +73.4 °F

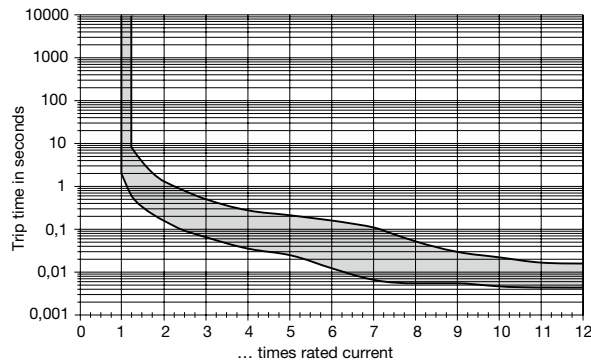
**Curve F1 (instantaneous) for DC**



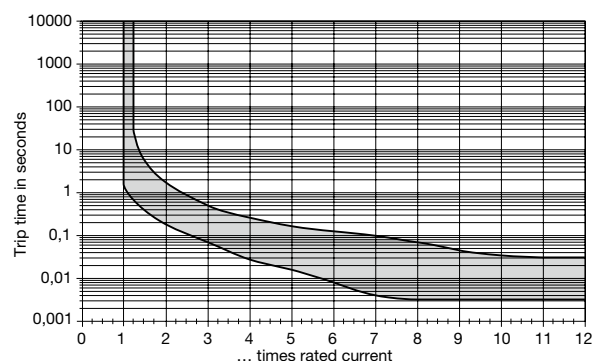
**Curve F2 (instantaneous) for AC**



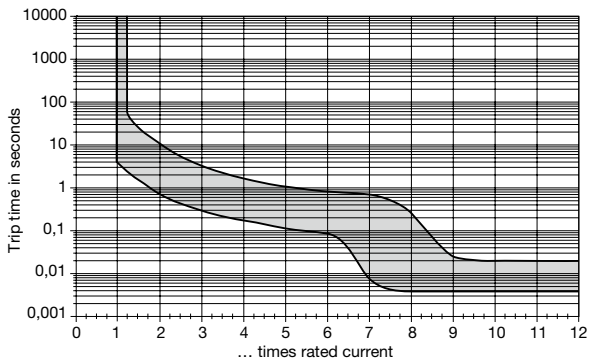
**Curve K1 (short delay) for DC**



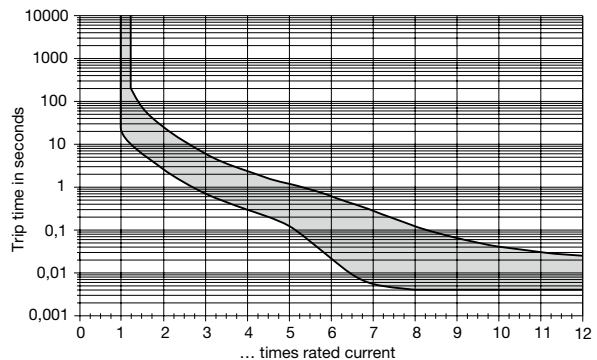
**Curve K2 (short delay) for AC 50/60 Hz**



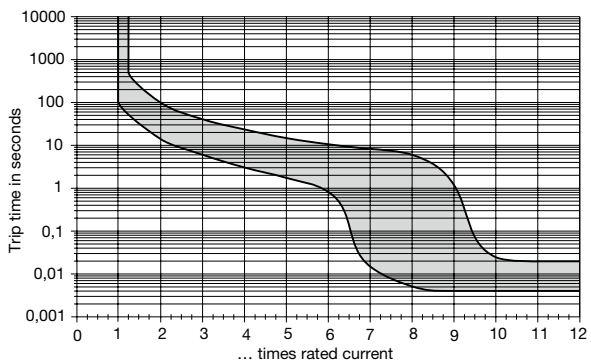
**Curve M1 (medium delay) for DC**



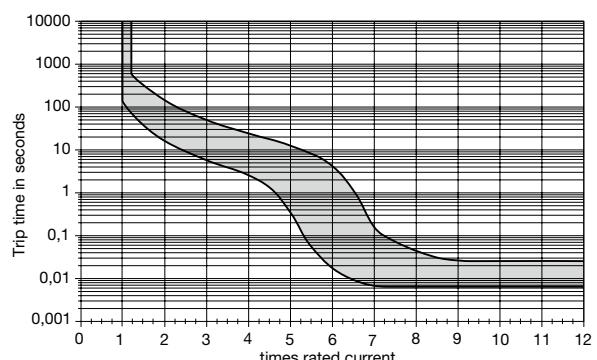
**Curve M2 (medium delay) for AC 50/60 Hz**



**Curve T1 (long delay) for DC**



**Curve T2 (long delay) for AC 50/60 Hz**

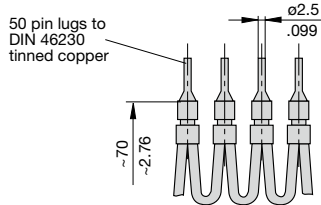


**N.B.** All curves will only be maintained if the escutcheon is mounted on a vertical surface.  
Ambient temperature or mounting side-by-side does not influence the trip curve, derating is not required.  
The breakers may trip in the event of current peaks < 0.003 sec. For these applications we offer a mechanical pulse delay – please enquire.  
**Other characteristic curves upon request (e.g. pulse delayed, for high inrush currents or capacitive loads).**

## Accessories

### Connector bus links -K10

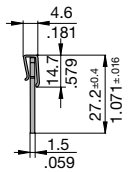
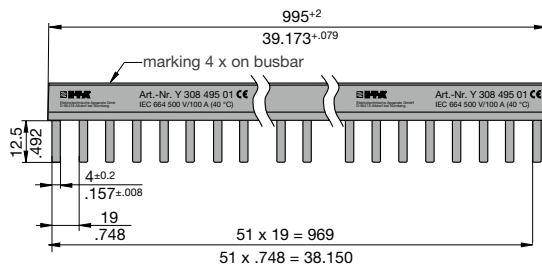
**X210 589 01**/2.5 mm<sup>2</sup>, (AWG 14) (black) up to 20 A max. load  
**X210 589 02**/1.5 mm<sup>2</sup>, (AWG 16) (brown) up to 13 A max. load



### Busbar 1-pole Y 308 495 01

The one metre long busbars can be cut to suitable lengths. Plug-on caps can be fitted on the ends to provide brush contact protection.

$I_{max}$  - busbar 100 A (40 °C)

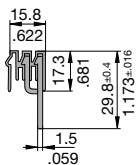
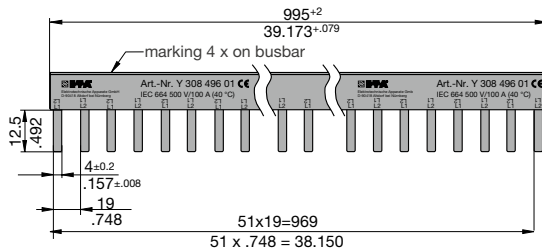


### Plug-on cap, 1-pole Y 307 851 01

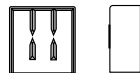


### Busbar 2-pole Y 308 496 01

$I_{max}$  - busbar 100 A (40 °C)

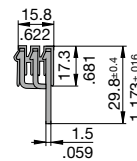
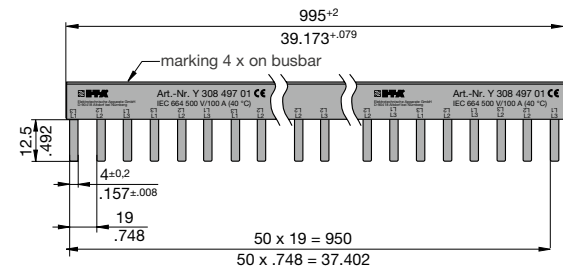


### Plug-on cap, busbar 2/3-pole Y 308 506 01

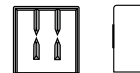


### Busbar 3-pole Y 308 497 01

$I_{max}$  - busbar 100 A (40 °C)



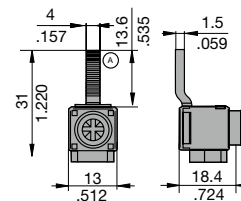
### Plug-on cap, busbar 2/3-pole Y 308 506 01



### Supply terminal $I_{max}$ 63 A

#### Y 308 504 01

Max. tightening torque of terminal screw 2 Nm  
 Max. cable cross section: 25 mm<sup>2</sup> / single strand  
 16 mm<sup>2</sup> / multistrand  
 with wire end ferrule



### Caution:

When using multipole busbars please leave at least one pole's width between two adjacent line entry terminals.

This is a metric design and millimeter dimensions take precedence ( $\frac{\text{mm}}{\text{inch}}$ )

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

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