

## IM - B Relay

- Minimum board-space 60mm<sup>2</sup>
- Slim line 10x6mm (0.39x0.24") and low profile 5.65mm (0.222")
- Switching power 60W/62.5VA
- Switching voltage 220VDC/250VAC
- Switching current 2A
- Bifurcated contacts
- High mechanical shock resistance

### Typical applications

Telecommunication, access and transmission equipment, optical network terminals, modems, office and business equipment, consumer electronics, measurement and Test equipment, industrial control, medical equipment

### Approvals

UL 508 File No. E 111441

Technical data of approved types on request

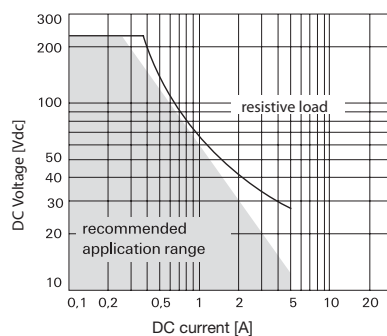
### Contact Data

|                                    |                                     |
|------------------------------------|-------------------------------------|
| Contact arrangement                | 1 form A (1 NO)                     |
| Max. switching voltage             | 220VDC, 250VAC                      |
| Rated current                      | 2A                                  |
| Limiting continuous current        | 2A                                  |
| Switching power                    | 60W, 62.5VA                         |
| Contact material                   | PdRu                                |
|                                    | Au covered                          |
| Contact style                      | twin contacts                       |
| Minimum switching voltage          | 100µV                               |
| Initial contact resistance         | <100mΩ at 10mA/30mV                 |
| Thermoelectric potential           | <10µV                               |
| Operate time                       | typ. 1ms, max. 3ms                  |
| Release time                       |                                     |
| without diode in parallel          | typ. 1ms, max. 3ms                  |
| with diode in parallel             | typ. 3ms, max. 5ms                  |
| Bounce time max.                   | typ. 1ms, max. 5ms                  |
| Electrical endurance               |                                     |
| at contact application 0           |                                     |
| (≤ 30mV / ≤ 10mA)                  | min. 2.5x10 <sup>6</sup> operations |
| cable load open end                | min. 2.0x10 <sup>6</sup> operations |
| resistive, 125VDC / 0.24A - 30W    | min. 5x10 <sup>5</sup> operations   |
| resistive, 220 VDC / 0.27A - 60W   | min. 1x10 <sup>5</sup> operations   |
| resistive, 250VAC / 0.25A - 62.5VA | min. 1x10 <sup>5</sup> operations   |
| resistive, 30VDC / 1A - 30W        | min. 5x10 <sup>5</sup> operations   |
| resistive, 30VDC / 2A - 60W        | min. 1x10 <sup>5</sup> operations   |

### Contact data (continued)

UL contact rating 30VDC, 2A, 60W, NO only

### Max. DC load breaking capacity



IM\_AB



110VDC, 0.3A, 33W  
220VDC, 0.27A, 60W  
125VAC, 0.5A, 62.5W  
250VAC, 0.25A, 62.5W

Mechanical endurance 10<sup>8</sup> operations

### Coil Data

|                       |                      |
|-----------------------|----------------------|
| Magnetic system       | monostable, bistable |
| Coil voltage range    | 1.5 to 24VDC         |
| Max. coil temperature | 125°C                |
| Thermal resistance    | <150K/W              |

### Coil versions, standard version, monostable, 1 coil

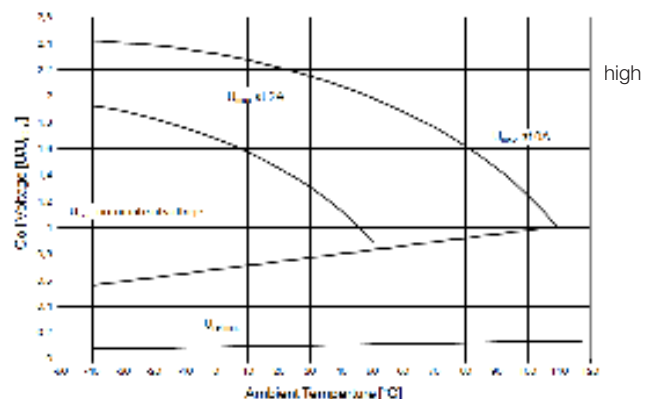
| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|---------------------|
| 01        | 3.0               | 2.25                | 0.30                | 64                    | 140                 |
| 02        | 4.5               | 3.38                | 0.45                | 145                   | 140                 |
| 03        | 5.0               | 3.75                | 0.50                | 178                   | 140                 |
| 06        | 12.0              | 9.00                | 1.20                | 1029                  | 140                 |

All figures are given for coil without pre-energization, at ambient temperature +23°C

### Insulation

C\*

### Coil operating range



## IM - B Relay (Continued)

### dielectric version

|                                 |                    |
|---------------------------------|--------------------|
| Initial dielectric strength     |                    |
| between open contacts           | 2500Vrms           |
| between contact and coil        | 3500Vrms           |
| Initial surge withstand voltage |                    |
| between open contacts           | 3500V              |
| between contact and coil        | 4900V              |
| Initial insulation resistance   |                    |
| between insulated elements      | >10 <sup>9</sup> Ω |
| Capacitance                     |                    |
| between open contacts           | max. 1pF           |
| between contact and coil        | max. 2pF           |
| between adjacent contacts       | max. 2pF           |

\*this relay contains SF6 (Sulfur hexafluoride, CAS number: 2551-62-4) for dielectric strength enhancement, SF6 is hermetically sealed in relay without leaks to air during normal application as recommended per the applicable product specification. It is clarified that the usage of SF6 in mini signal relay is not prohibited by related regulations. Please contact TE local sales or field engineer for further information and detailed material declaration.

### RF Data

|                                    |               |
|------------------------------------|---------------|
| Isolation at 100MHz/900MHz         | 37.0dB/18.8dB |
| Insertion loss at 100MHz/900MHz    | 0.03dB/0.33dB |
| Voltage standing wave ratio (VSWR) |               |
| at 100MHz/900MHz                   | 1.06/1.49     |

### Other Data

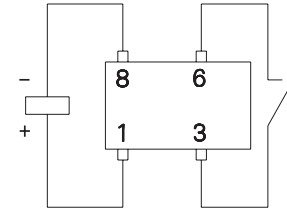
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customersupport/rohssupportcenter](http://www.te.com/customersupport/rohssupportcenter)

|                                                  |                                       |
|--------------------------------------------------|---------------------------------------|
| Ambient temperature                              | -40°C to +85°C                        |
| Thermal resistance                               | < 150K/W                              |
| Category of environmental protection             |                                       |
| IEC 61810                                        | RT V - hermetically sealed            |
| Degree of protection                             |                                       |
| IEC 60529                                        | IP 67, immersion cleanable            |
| Vibration resistance (functional)                | 20g, 10 to 500Hz                      |
| Shock resistance (functional), half sinus 11ms   | 50g                                   |
| Shock resistance (destructive), half sinus 0.5ms | 500g                                  |
| Weight                                           | max. 0.75g                            |
| Resistance to soldering heat THT                 |                                       |
| IEC 60068-2-20                                   | 265°C/10s                             |
| Resistance to soldering heat SMT                 |                                       |
| IEC 60068-2-58                                   | 265°C/10s                             |
| Moisture sensitive level, JEDEC J-Std-020D       | MSL3                                  |
| Ultrasonic cleaning                              | not recommended                       |
| Packaging/unit                                   |                                       |
| THT version                                      | tube/50pcs., box/1000 pcs.            |
| SMT version                                      | reel/1000 pcs., box/1000 or 5000 pcs. |

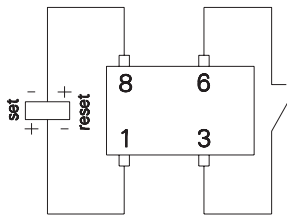
### Terminal assignment

TOP view on relay

IM-B, 1 form A (NO)



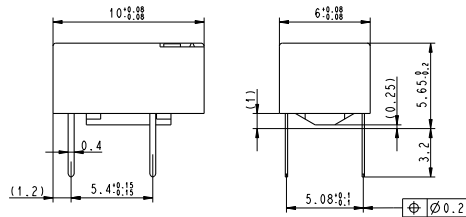
Contacts are shown in reset condition. Contact position might change during transportation and must be reset before use.



### Dimensions

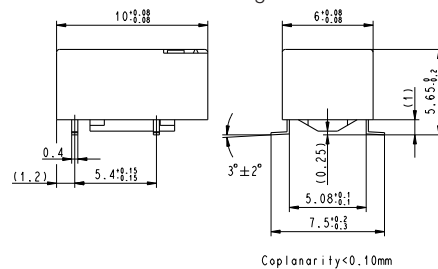
#### THT version

#### Standard version



#### SMT version

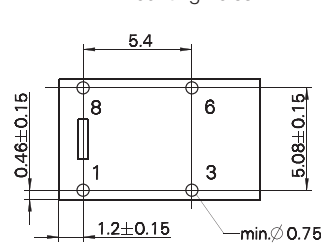
#### Gull wings



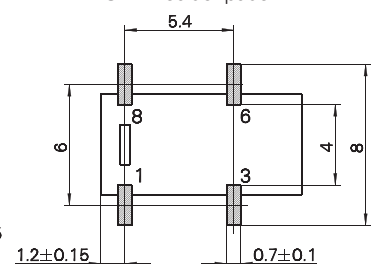
### PCB layout

TOP view on component side of PCB

#### THT mounting holes



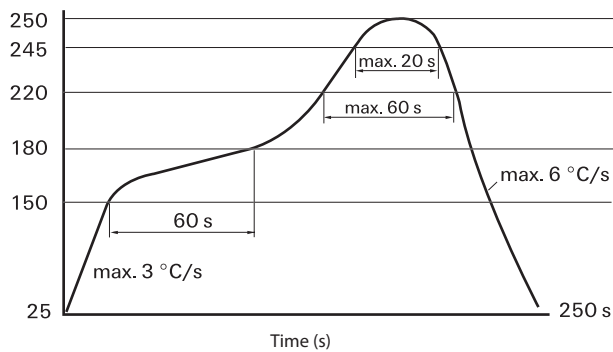
#### SMT - solder pads



## IM - B Relay (Continued)

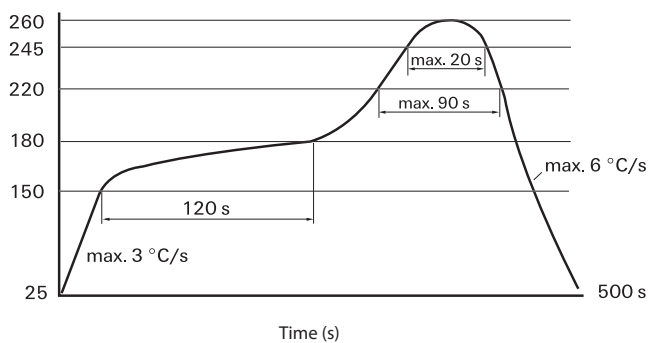
### Processing Recommended soldering conditions

Soldering conditions according IEC 60058-2-58 and IPC/JEDEC J-STD-020D

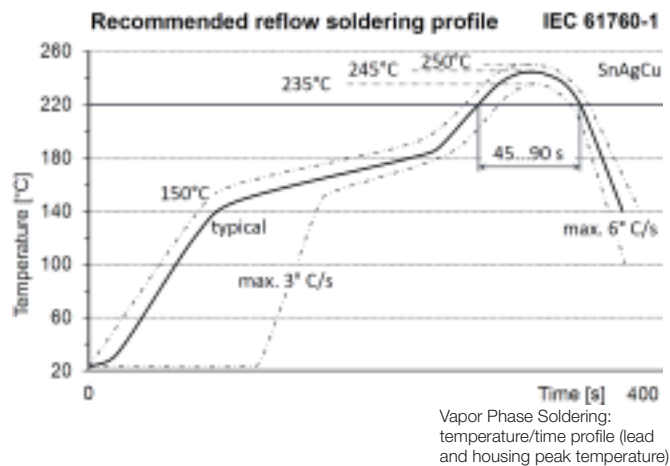


### Resistance to soldering heat - Reflow profile

Infrared Soldering: temperature/time profile (lead and housing peak temperature)



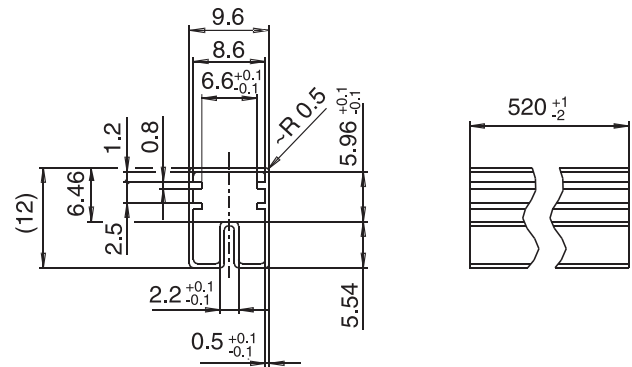
### Recommended reflow soldering profile



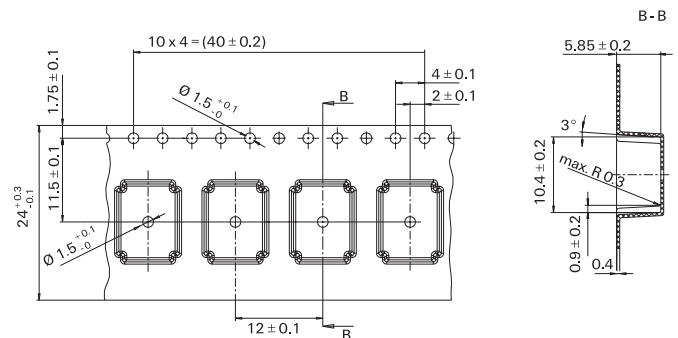
Vapor Phase Soldering: temperature/time profile (lead and housing peak temperature)

### Packing

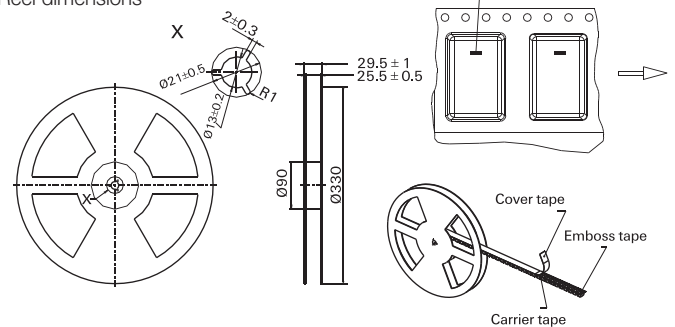
Tube for THT version  
50 relays per tube, 1000 relays per box



Tape and reel for SMT version  
1000 relays per reel, 1000 or 5000 relays per box



### Reel dimensions



## IM - B Relay (Continued)

| Product code structure |                                 | Typical product code                           |  |   | IM                      | B | 03 | G | R |
|------------------------|---------------------------------|------------------------------------------------|--|---|-------------------------|---|----|---|---|
| Type                   |                                 |                                                |  |   |                         |   |    |   |   |
| IM                     | Signal Relays IM Series IMA/IMB |                                                |  |   |                         |   |    |   |   |
| Contact arrangement    |                                 |                                                |  |   |                         |   |    |   |   |
| B                      | 1 form A, 1 NO                  |                                                |  |   |                         |   |    |   |   |
| Coil                   |                                 |                                                |  |   |                         |   |    |   |   |
|                        |                                 | Coil code: please refer to coil versions table |  |   |                         |   |    |   |   |
| Performance type       |                                 |                                                |  |   |                         |   |    |   |   |
| Blank                  | Standard version                |                                                |  | C | High Dielectric Version |   |    |   |   |
| Terminals              |                                 |                                                |  |   |                         |   |    |   |   |
| T                      | THT - standard                  |                                                |  | G | SMT-gull wing           |   |    |   |   |
| Packing                |                                 |                                                |  |   |                         |   |    |   |   |
| S                      | Tube                            |                                                |  | R | Reel                    |   |    |   |   |

| Product code | Arrangement                  | Perf. type      | Coil   | Coil type  | Terminals     | Part number |
|--------------|------------------------------|-----------------|--------|------------|---------------|-------------|
| IMB01CGR     | 1 form A,<br>1 NO<br>contact | High dielectric | 3VDC   | Monostable | SMT gull wing | 1462041-1   |
| IMB01CTS     |                              |                 |        |            | THT standard  | 1462041-4   |
| IMB02CGR     |                              |                 | 4.5VDC |            | SMT gull wing | 1462041-2   |
| IMB02CTS     |                              |                 |        |            | THT standard  | 1462041-5   |
| IMB03CGR     |                              |                 | 5VDC   |            | SMT gull wing | 1462041-7   |
| IMB03CTS     |                              |                 |        |            | THT standard  | 1462041-8   |
| IMB04CGR     |                              |                 | 6VDC   |            | SMT gull wing | 1462041-9   |
| IMB06CGR     |                              |                 | 12VDC  |            |               | 1462041-3   |
| IMB06CTS     |                              |                 |        |            | THT standard  | 1462041-6   |
| IMB07CGR     |                              |                 | 24VDC  |            | SMT gull wing | 1-1462041-3 |
| IMB07CTS     |                              |                 |        |            | THT standard  | 1-1462041-4 |
| IMB42CGR     |                              |                 | 4.5VDC | Bistable   | SMT gull wing | 1-1462041-6 |
| IMB42CTS     |                              |                 |        |            | THT standard  | 1-1462041-5 |