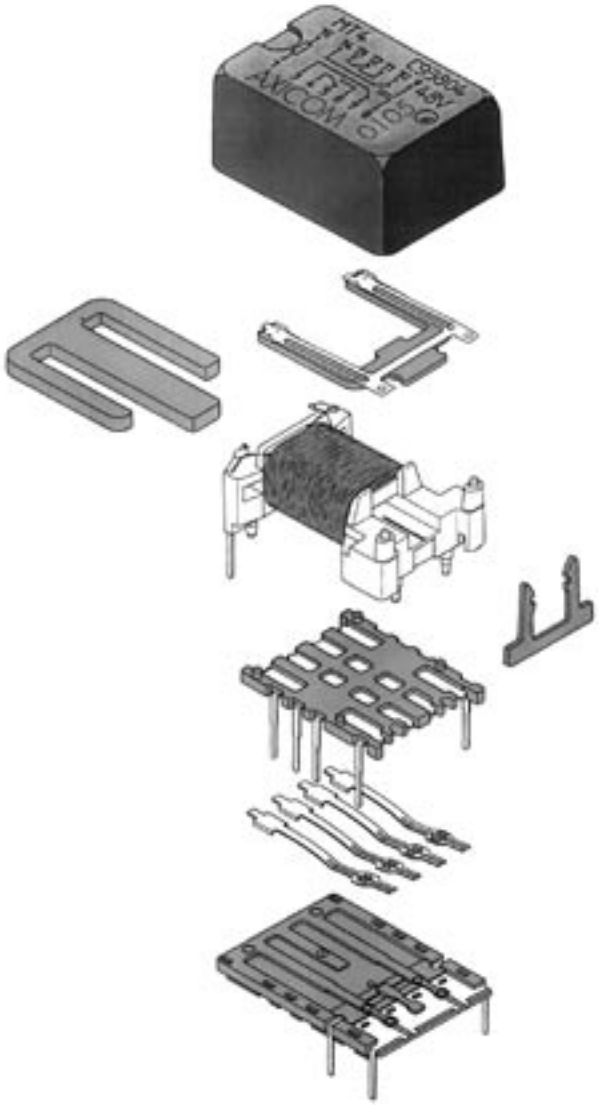
4 pole telecom/signal relay
Through Hole Type (THT)
Non-polarized. non-latching 1 coil



## Features

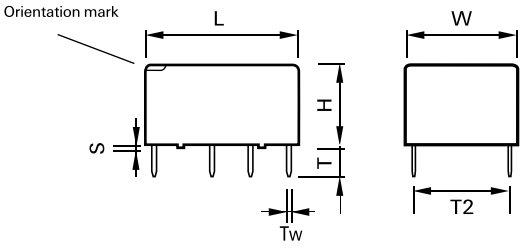
- Telecom/signal relay (dry circuit, test access, ringing)
- 20 x 14.8 mm, 0.795 x 0.582 inch
- Switching current 1.25 A
- 4 changeover contacts (4 form C / 4PDT)
- Bifurcated contacts
- Meets Bellcore GR 1089, FCC Part 68 and ITU-T K20
  2500 V between coil and contacts

## Typical applications

- Communications equipment
  Linecard application – analog, ISDN, xDSL
  PABX
  Voice over IP
- Office and business equipment
- Measurement and control equipment
- Consumer electronics
- Set top boxes, HiFi
- Medical equipment

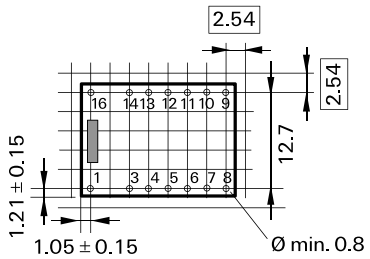
c UL us UL 508 File No. E 111441

## THT Version




## Mounting hole layout

View onto the component side of the PCB
(top view)

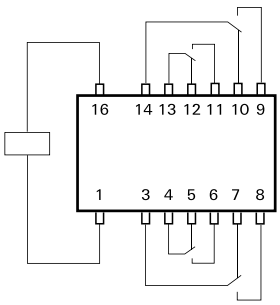



Basic grid 2.54 mm

## Terminal assignment

Relay - top view

non-latching 1 coil
release condition




## Dimension

| | THT | |
|---|---|---|
| | mm | inch |
| L | 20.0 ± 0.1 | 0.795 ± 0.004 |
| W | 14.8 ± 0.1 | 0.582 ± 0.004 |
| H | 11 +0.1/-0.2 | 0.433 +0.004/-0.008 |
| T | 3.1± 0.3 | 0.122 + 0.011 |
| T1 | N/A | N/A |
| T2 | 12.7 ± 0.15 | 0.5 ± 0.005 |
| Tw | 0.5 | 0.020 |
| S | 0.8 | 0.031 |

## Coil Data (values at 23°C)

| Nominal voltage *U*nom | Operate voltage range | | Release voltage Minimum | Nominal power consumption | Resistance | Relay Code |
|---|---|---|---|---|---|---|
| | Minimum voltage $U_I$ | Maximum voltage $U_{II}$ | | | | |
| Vdc | Vdc | Vdc | Vdc | mW | Ω / ± 10 % | |
| non-latching<br>1 coil | | | | | | |
| 4.5 | 3.2 | 7.8 | 0.45 | 300 | 67 | C 93807 |
| 5 | 3.6 | 8.65 | 0.50 | 300 | 83 | C 93801 |
| 9 | 6.4 | 15.6 | 0.90 | 300 | 270 | C 93805 |
| 12 | 8.6 | 20.8 | 1.20 | 300 | 480 | C 93802 |
| 24 | 17.1 | 41.6 | 2.40 | 300 | 1920 | C 93803 |
| 48 | 34.1 | 83.2 | 4.80 | 300 | 7680 | C 93804 |

$U_I$ = Minimum voltage at 23° C after pre-energizing with nominal voltage without contact current

$U_{II}$ = Maximum continous voltage at 23°

The operating voltage limits $U_I$ and $U_{II}$ depend on the temperature according to the formula:

$U_{I\,tamb} = K_I \cdot U_{I\,23°C}$ and

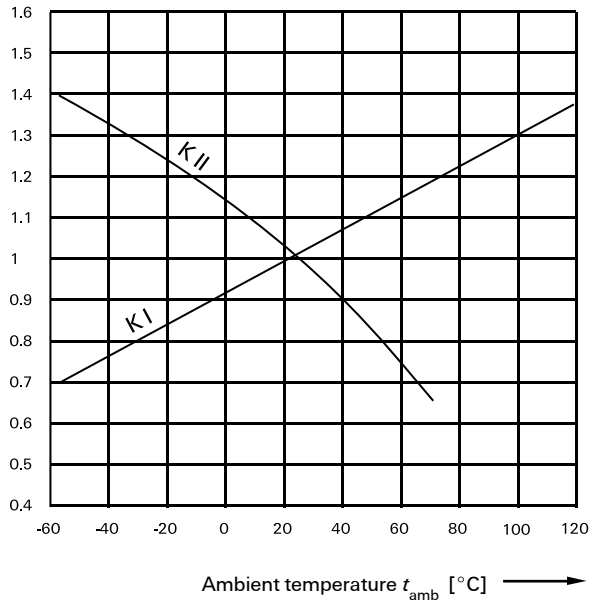
$U_{II\,tamb} = K_{II} \cdot U_{II\,23°C}$

$t_{amb}$ = Ambient temperature

$U_{I\,tamb}$ = Minimum voltage at ambient temperature, $t_{amb}$

$U_{II\,tamb}$ = Maximum voltage at ambient temperature, $t_{amb}$

$k_I$, $k_{II}$ = Factors (dependent on temperature), see diagram



## Contact Data

| | | |
|---|---|---|
| Number of contacts and type | | 4 changeover contacts |
| Contact assembly | | Bifurcated contacts |
| Contact material | | Silver-nickel, gold-covered |
| Limiting continuous current at max. ambient temperature | | 1.25 A |
| Maximum switching current | | 1.25 A |
| Maximum swichting voltage | | 150 Vdc<br>150 Vac |
| Maximum switching capacity | | 30 W, 62.5 VA |
| Thermoelectric potential | | < 10 $\mu$V |
| Initial contact resistance / measuring condition: 10 mA / 20 mV | | < 70 m$\Omega$ |
| Electrical endurance | Contact application 0 (< =30 mV/< = 10 mA) | min. 1 x $10^7$ operations |
| | Cable load open end | min. 5 x $10^6$ operations |
| | Resistive load 150 V / 0.2 A - 30 W | min. 2.0 x $10^5$ operations |
| | 24 V / 1.25 | min. 2.0 x $10^5$ operations |
| A - 30 W | | typ. $10^8$ operations |
| Mechanical endurance | | 24 Vdc / 1.25 A |
| UL/CSA ratings | | 125 Vac / 0.4 A |

## Insulation

| | |
|---|---|
| Insulation resistance at 500 Vdc | > $10^9$ $\Omega$ |
| Dielectric test voltage (1 min) | |
| between coil and contacts | 1800 Vrms |
| between adjacent contact sets | 750 Vrms |
| between open contacts | 750 Vrms |
| Surge voltage resistance | |
| according to Bellcore TR-NWT-001089 (2 / 10 $\mu$s) | |
| between coil and contacts | 2500 V |
| between adjacent contact sets | 1500 V |
| between open contacts | 1500 V |
| according to FCC 68 (10 / 160 $\mu$s) and IEC (10 / 700 $\mu$s) | |
| between coil and contacts | 2500 V |
| between adjacent contact sets | 1500 V |
| between open contacts | 1500 V |

## High Frequency Data

| | |
|---|---|
| Capacitance | |
| between coil and contacts | max. 4 pF |
| between adjacent contact sets | max. 2 pF |
| between open contacts | max. 2 pF |
| RF Characteristics | |
| Isolation at 100 / 900 MHz | - 31.2 dB / - 17.2 dB |
| Insertion loss at 100 / 900 MHz | - 0.05 dB / - 0.91 dB |
| V.S.W.R. at 100 / 900 MHz | 1.03 / 1.31 |

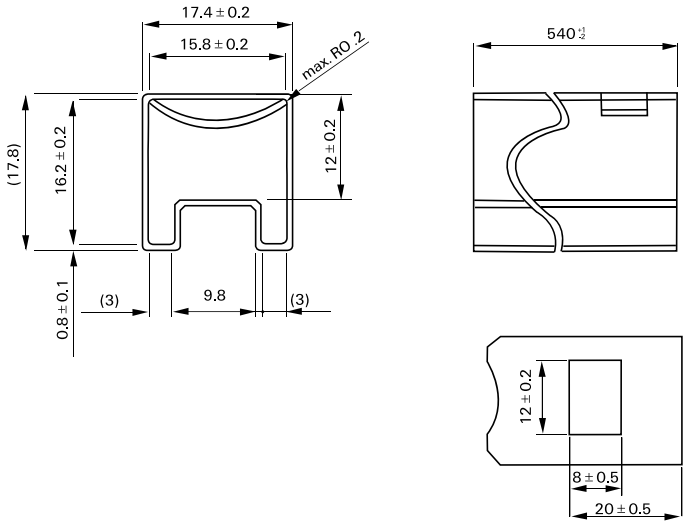
## General data

| | |
|---|---|
| Operate time at $U_{nom}$ typ. / max. | 4 ms / 6 ms |
| Release time without diode in parallel (non-latching), typ. / max. | 1 ms / 3 ms |
| Release time with diode in parallel (non-latching), typ. / max. | 4 ms / 6 ms |
| Bounce time at closing contact, typ. / max. | 1 ms / 5 ms |
| Maximum switching rate without load | 50 operations/s |
| Ambient temperature | -55° C ... +85° C |
| Thermal resistance | < 105 K/W |
| Maximum permissible coil temperature | 100° C |
| Vibration resistance (function) | 10 G<br>10 to 500 Hz |
| Shock resistance, half sinus, 11 ms | 10 G (function)<br>100 G (damage) |
| Degree of protection | immersion cleanable, IP 67 |
| Needle flame test | application time 10 s, |
| Mounting position | any |
| Processing information | Ultrasonic cleaning is not recommended |
| Weight (mass) | max. 7 g |
| Resistance to soldering heat | 260° C / 10 s |

All data refers to 23° C unless otherwise specified.

## Packing

Tube for THT version - 25 relays per tube, 500 relays per box



## Ordering Information

| Relay Code | Tyco Part Number |
|---|---|
| C93801 | 0-1462032-1 |
| C93802 | 0-1462032-4 |
| C93803 | 0-1462032-7 |
| C93804 | 0-1462032-8 |
| C93805 | 0-1462032-9 |
| C93807 | 1-1462032-0 |