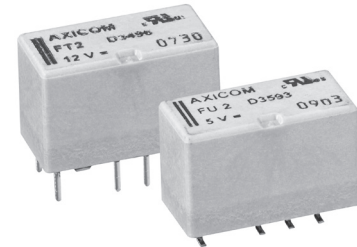


FT2/FU2 Relay

- Telecom/signal relay (dry circuit, test access, ringing)
- Slim line 15x7.5mm (.59x.295")
- Switching current 2A
- 2 form C bifurcated contacts (2 CO)
- High sensitive 24V and 48V coil versions
- Meets Telcordia GR 1089, FCC Part 68 and ITU-T K20, $\geq 2500V$ 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

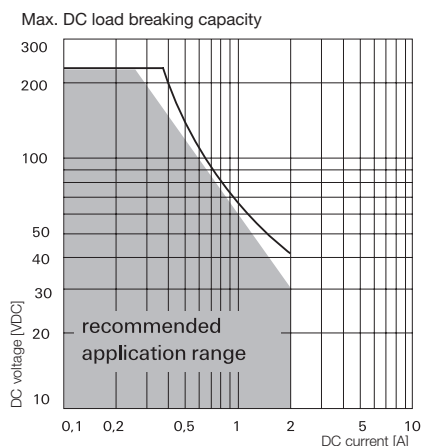


Approvals

UL 508 File No. E 111441
Technical data of approved types on request

Contact Data

| | |
|------------------------------------|-----------------------------------|
| Contact arrangement | 2 Form C (CO) |
| 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 |
| Min. recommended contact load | 100 μ V/1 μ A |
| Initial contact resistance | <70m Ω |
| Thermoelectric potential | <10 μ V |
| Operate time | typ. 3ms, max. 5ms |
| Release time | |
| without diode in parallel | typ. 2ms, max. 5ms |
| with diode in parallel | typ. 4ms, max. 5ms |
| Bounce time max. | typ. 1ms, max. 5ms |
| Electrical endurance | |
| at contact application 0 | |
| ($\leq 30mV/\leq 10mA$) | min. 2.5×10^6 operations |
| cable load open end | min. 2.0×10^6 operations |
| resistive, 24V / 1.25A - 30W | min. 1×10^5 operations |
| resistive, 30VDC / 2A - 60W | min. 1×10^5 operations |
| resistive, 125VDC / 0.24A - 30W | min. 1×10^5 operations |
| Contact ratings, UL contact rating | |
| 220VDC, 0.24A, 60W | |
| 125VDC, 0.24A, 30W | |
| 250VAC, 0.25A, 62.5VA | |
| 125VAC, 0.5A, 62.5VA | |
| 30VDC, 2A, 60W | |
| Mechanical endurance | 100×10^6 operations |



Coil Data

| | |
|-----------------------|---------------------------|
| Magnetic system | monostable, non polarized |
| Coil voltage range | 3 to 48VDC |
| Max. coil temperature | 150°C |
| Thermal resistance | <125K/W |

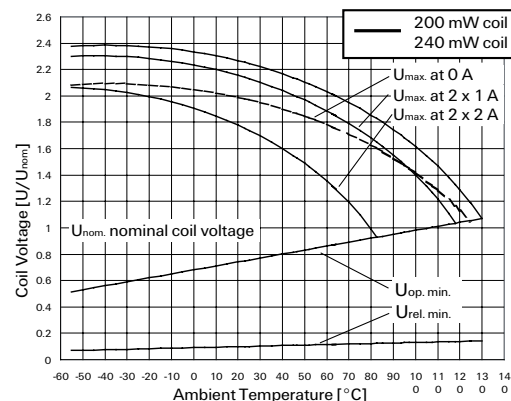
Coil versions, monostable

| Coil code | Rated voltage VDC | Operate voltage VDC _{min.} | Limiting voltage VDC _{max.} | Release voltage VDC _{min.} | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-------------------------------------|-------------------|-------------------------------------|--------------------------------------|-------------------------------------|-----------------------------------|---------------------|
| Standard version, monostable | | | | | | |
| 21 | 3 | 2.25 | 6.80 | 0.30 | 45 | 200 |
| 29 | 4 | 3.00 | 9.00 | 0.40 | 80 | 200 |
| 22 | 4.5 | 3.38 | 10.10 | 0.45 | 101 | 200 |
| 23 | 5 | 3.75 | 11.20 | 0.50 | 125 | 200 |
| 24 | 6 | 4.50 | 13.50 | 0.60 | 180 | 200 |
| 25 | 9 | 6.75 | 20.30 | 0.90 | 405 | 200 |
| 26 | 12 | 9.00 | 27.00 | 1.20 | 720 | 200 |
| 27 | 24 | 18.00 | 47.50 | 2.40 | 2400 | 240 |
| 28 | 48 | 36.00 | 95.00 | 4.80 | 9600 | 240 |

High dielectric version, monostable

| | | | | | | |
|----|-----|-------|-------|------|------|-----|
| 91 | 3 | 2.25 | 6.80 | 0.30 | 45 | 200 |
| 92 | 4.5 | 3.38 | 10.10 | 0.45 | 101 | 200 |
| 93 | 5 | 3.75 | 11.20 | 0.50 | 125 | 200 |
| 96 | 12 | 9.00 | 27.00 | 1.20 | 720 | 200 |
| 97 | 24 | 18.00 | 47.50 | 2.40 | 2400 | 240 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.



FT2/FU2 Relay (Continued)

Coil Data (continued)

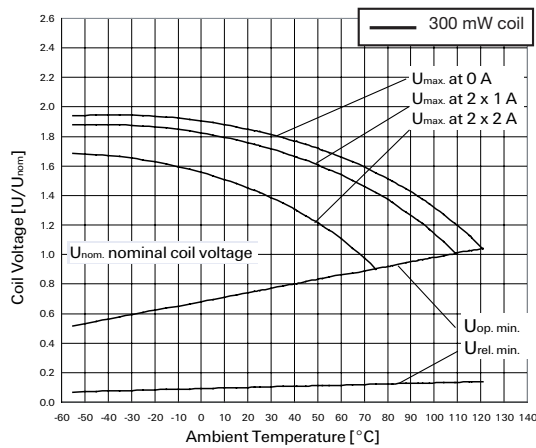
Coil versions, monostable

| Coil code | Rated voltage VDC | Operate voltage VDC _{min.} | Limiting voltage VDC _{max.} | Release voltage VDC _{min.} | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|-----------|-------------------|-------------------------------------|--------------------------------------|-------------------------------------|-----------------------------------|---------------------|
| 71 | 3 | 2.25 | 5.50 | 0.30 | 30 | 300 |
| 73 | 5 | 3.75 | 9.20 | 0.50 | 83 | 300 |
| 76 | 12 | 9.00 | 22.10 | 1.20 | 480 | 300 |

High dielectric Australia version, monostable

| | | | | | | |
|----|----|------|-------|------|-----|-----|
| 71 | 3 | 2.25 | 5.50 | 0.30 | 30 | 300 |
| 73 | 5 | 3.75 | 9.20 | 0.50 | 83 | 300 |
| 76 | 12 | 9.00 | 22.10 | 1.20 | 480 | 300 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.



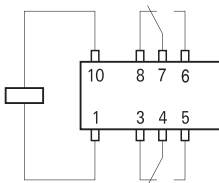
U_{max} upper limit of the operative range of the coil voltage (limiting voltage) when coils are continuously energized

$U_{op. min.}$ lower limit of the operative range of the coil voltage (reliable operate voltage)

$U_{rel. min.}$ lower limit of the operative range of the coil voltage (reliable release voltage)

Terminal assignment

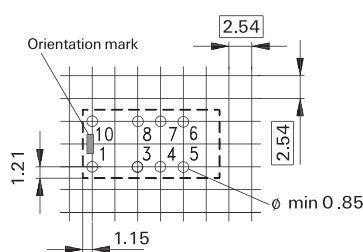
TOP view on component side of PCB



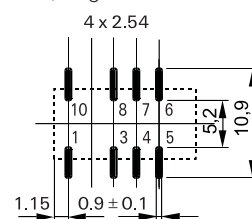
PCB layout

TOP view on component side of PCB

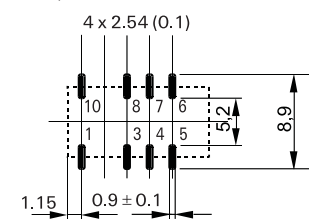
THT version



SMT, long terminals



SMT, short terminals



Insulation

| | standard | high dielectric |
|------------------------------------|----------------------|----------------------|
| Initial dielectric strength | | |
| between open contacts | 1000V _{rms} | 1500V _{rms} |
| between contact and coil | 1500V _{rms} | 4000V _{rms} |
| between adjacent contacts | 1500V _{rms} | 1800V _{rms} |
| Initial surge withstand voltage | | |
| between open contacts | 1500V | 2500V |
| between contact and coil | 2500V | 5000V |
| between adjacent contacts | 1500V | 2500V |
| Initial insulation resistance | | |
| between insulated elements | >10 ⁹ Ω | >10 ⁹ Ω |
| Capacitance | | |
| between open contacts | | max. 4pF |
| between contact and coil | | max. 1pF |
| between adjacent contacts | | max. 1pF |
| Cross talk at 100MHz/900MHz | -30.6dB/-13.7dB | |
| Insertion loss at 100MHz/900MHz | -0.02dB/-0.50dB | |
| Voltage standing wave ratio (VSWR) | | |
| at 100MHz/900MHz | 1.02 / 1.27 | |

Other Data

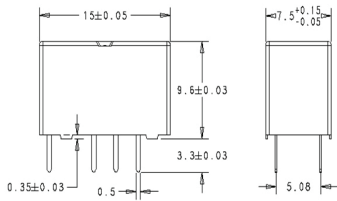
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter

| | |
|--|------------------------------|
| Ambient temperature | -55°C to +85°C |
| Thermal resistance | <125K/W |
| Category of environmental protection | |
| IEC 61810 | RT III - wash tight |
| Vibration resistance (functional) | 10g, 10 to 500Hz |
| Shock resistance (functional), half sinus 11ms | 15g |
| Shock resistance (destructive), half sinus 0.5ms | 500g |
| Weight | max. 3g |
| Resistance to soldering heat THT | |
| IEC 60068-2-20 | 265°C/10s |
| For all High Dielectric Versions (HDV) | 260°C/5s |
| Moisture sensitive level, JEDEC J-Std-020D | MSL3 |
| related only to SMT and THT-HDV relays | |
| packed in original dry-packs | |
| Ultrasonic cleaning | not recommended |
| Packaging/unit | |
| THT version | tube/50 pcs., box/2000 pcs. |
| SMT short terminals | reel/500 pcs., box/2500 pcs. |
| SMT long terminals | reel/400 pcs., box/2000 pcs. |

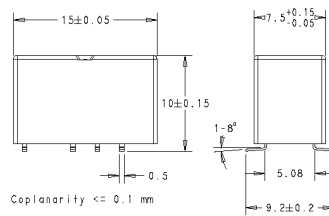
FT2/FU2 Relay (Continued)

Dimensions

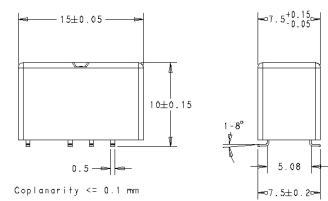
THT version



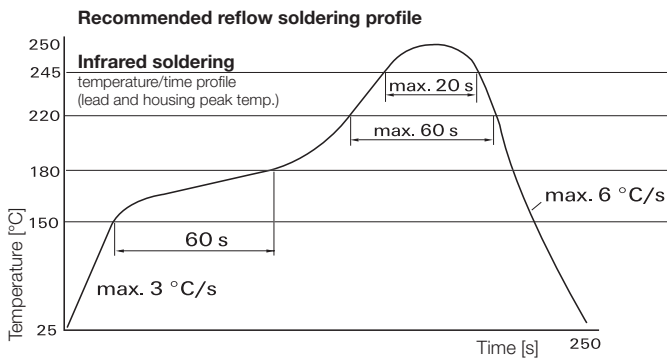
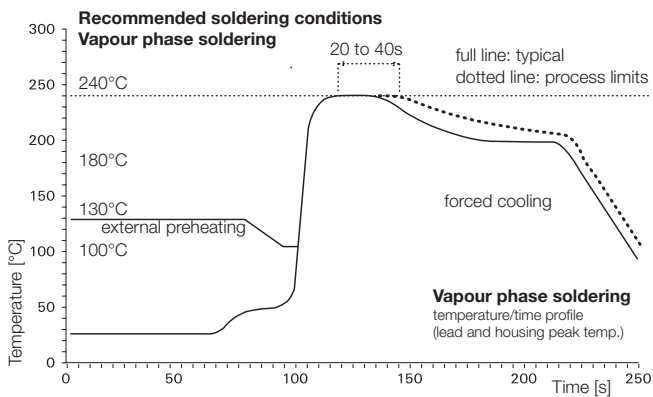
SMT, long terminals



SMT, short terminals

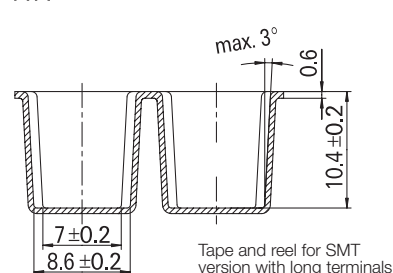
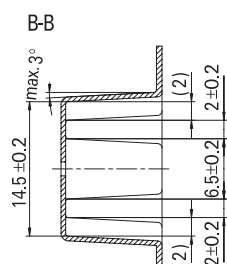
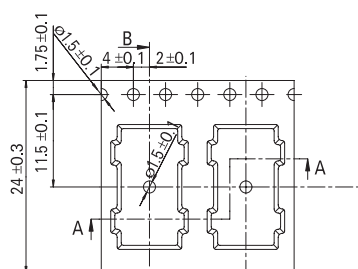
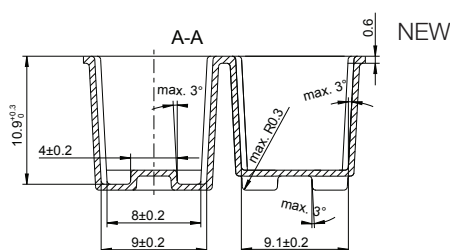
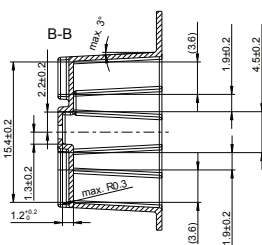
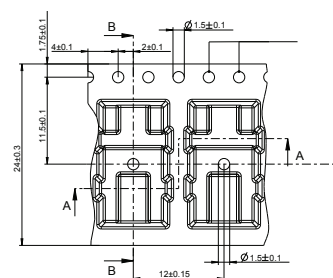
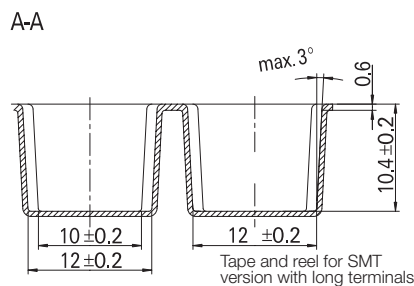
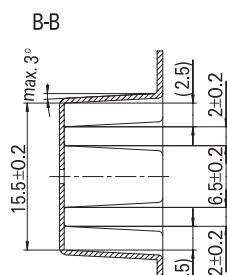
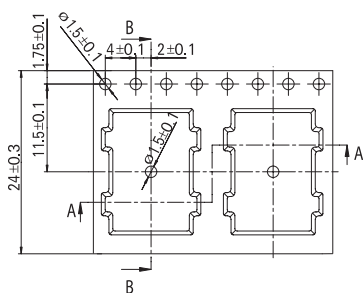
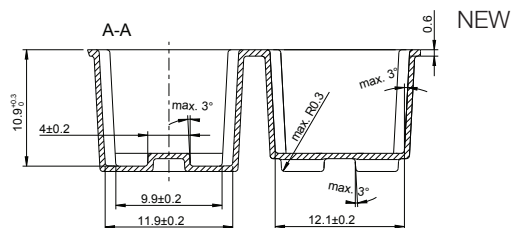
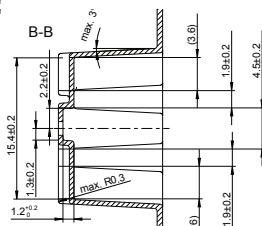
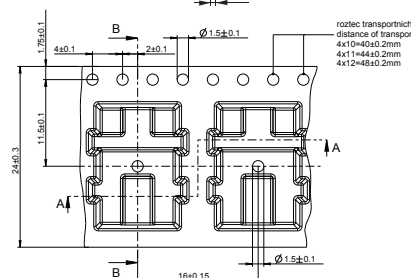
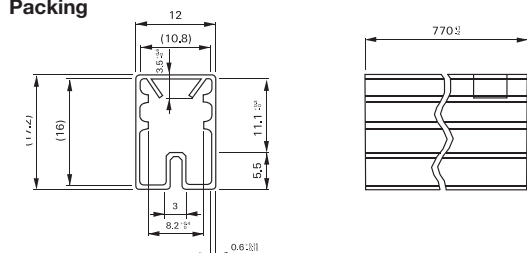


Processing

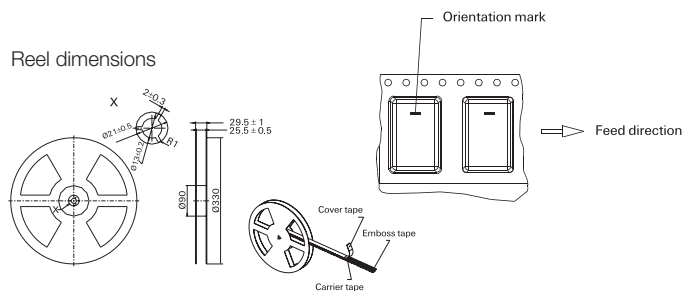


FT2/FU2 Relay (Continued)

Packing



Reel dimensions



FT2/FU2 Relay (Continued)

Product code structure

Typical product code **D34 02**

Type

- D34** Signal Relays FT2 (THT)
D35 Signal Relays FU2 (SMT)
 2 form C, 2 CO

Coil

Coil code: please refer to coil versions table

Performance and coil type

2x Standard version, monostable

9x High dielectric version, monostable

7x High dielectric, Australia version, monostable (SMT version only)

Terminals

- Blank** THT, Standard packaging
L THT, dry-pack (on request)
N SMT, short pins
W SMT, long pins

| Product code | Arrangement | Perf. type | Coil type | Coil | Terminals | Part Number |
|--------------|-----------------|-----------------|------------|--------|-----------|-------------|
| D3421 | 2 form C (2 CO) | Standard | Monostable | 3VDC | THT | 1462035-9 |
| D3423 | | | | 5VDC | | 1-1462035-1 |
| D3426 | | | | 12VDC | | 1-1462035-4 |
| D3427 | | | | 24VDC | | 1-1462035-7 |
| D3523N | 2 form C (2 CO) | Standard | Monostable | 5VDC | SMT short | 2-1462036-1 |
| D3527N | | | | 24VDC | | 2-1462036-9 |
| D3528N | | | | 48VDC | | 9-1462036-3 |
| D3521W | 2 form C (2 CO) | Standard | Monostable | 3VDC | SMT long | 1-1462036-8 |
| D3522W | | | | 4.5VDC | | 2-1462036-0 |
| D3523W | | | | 5VDC | | 2-1462036-2 |
| D3526W | | | | 12VDC | | 2-1462036-8 |
| D3527W | | | | 24VDC | | 9-1462036-1 |
| D3491 | 2 form C (2 CO) | High dielectric | Monostable | 3V | THT | 2-1462035-0 |
| D3492 | | | | 4.5VDC | | 2-1462035-1 |
| D3493 | | | | 5V | | 1-1462035-5 |
| D3496 | | | | 12VDC | | 2-1462035-4 |
| D3497 | | | | 24VDC | | 2-1462035-5 |
| D3491L | | | | 3VDC | | 2-1462035-7 |

Other types on request

This list represents the most common types and does not show all variants covered by this data sheet.