

## P1 Relay V23026

- Directly triggerable with TTL standard modules as ALS, HCT & ACT
- Slim line 13.5x7.85mm (0.531x0.309")
- Switching current 1 A
- Bifurcated 1 form C (CO) contact
- Immersion cleanable
- High sensitivity results in low nominal power consumption, 65 to 130mW for monostable and 30 to 150mW for bistable (latching)
- Initial surge withstand voltage  
2.5kV (2/10µs) meets the Bellcore Requirement GR-1089  
1.5kV (10/160µs) meets FCC Part 68

### Typical applications

Automotive equipment, CAN bus, immobilizer, office equipment, measurement and control equipment, medical equipment, safety equipment

### Approvals

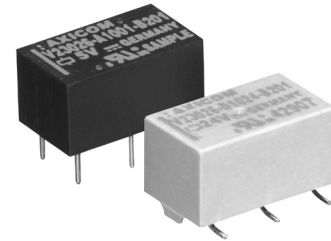
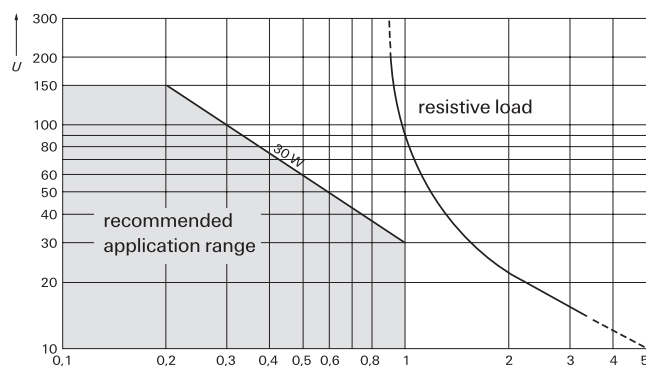
UL 508 File No. E 111441

Technical data of approved types on request

### Contact Data

Contact arrangement	1 form C (CO)
Max. switching voltage	125VDC, 150VAC
Rated current	1A
Limiting continuous current, 85°C	1A
Breaking capacity max.	see max. DC load breaking capacity
Contact material	Palladium nickel, gold-rhodium covered
Contact style	bifurcated contact
Min. recommended contact load	10mA at 20mV
Initial contact resistance	≤50mΩ at 10mA/20mV
Frequency of operation without load	200 ops./s
Operate/release time max.	2ms
Set/reset time max.	2ms
Bounce time max.	3ms
Electrical endurance	
at 12V/10mA	typ. 50x10 <sup>6</sup> operations
at 6V/100mA	typ. 10x10 <sup>6</sup> operations
at 30V/1000mA	typ. 10x10 <sup>3</sup> operations
Contact ratings	
UL contact ratings, resistive load	30VDC/1A 65VDC/0.46A 150VAC/0.46A
Mechanical endurance	typ. 10 <sup>9</sup> operations

### Max. DC load breaking capacity



P1\_THTSMD



### Coil Data

Magnetic system	polarized
Coil voltage range	3 to 24VDC other coil voltages on request
Operative range, IEC 61810	see coil operative range
Max. coil temperature	85°C
Thermal resistance	<130K/W

### Coil versions, THT, monostable

Coil code	Rated voltage VDC	Operate voltage VDC <sub>min.</sub>	Release voltage VDC <sub>min.</sub>	Coil resistance Ω ±10%	Rated coil power mW
006	3	2.25	0.3	137	66
001	5	3.75	0.5	370	68
005	9	6.75	0.9	1165	70
002	12	9.00	1.2	2250	34
004	24	18.00	2.4	4500	128

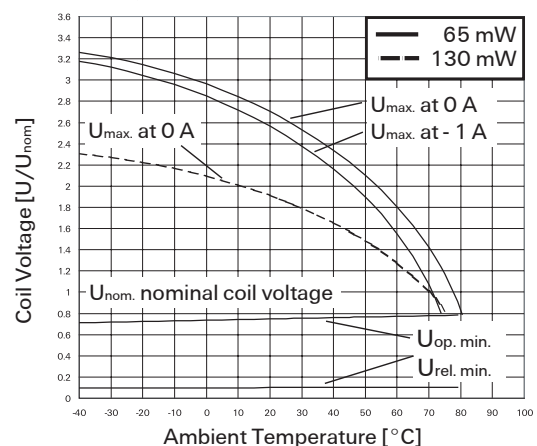
All figures are given for coil without pre-energization, at ambient temperature +23°C.

### Coil versions, SMT, monostable

Coil code	Rated voltage VDC	Operate voltage VDC <sub>min.</sub>	Release voltage VDC <sub>min.</sub>	Coil resistance Ω ±10%	Rated coil power mW
026	3	2.25	0.3	113	80
021	5	3.75	0.5	313	80
025	9	6.75	0.9	1015	80
022	12	9.00	1.2	1800	80
024	24	18.00	2.4	4500	128

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

### Coil operative range, monostable DC coil



**P1 Relay V23026** (Continued)

**Coil data** (continued)

**Coil versions, THT and SMT, bistable 2 coils**

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
106	3	2.25	2.25	130	69
101	5	3.75	3.75	390	64
105	9	6.75	6.75	1200	68
102	12	9.00	9.00	1500	96
24 <sup>1)</sup>					

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

Coils I and II are identical.

<sup>1)</sup> A nominal voltage of 24VDC is feasible with a 12VDC coil with a series resistor (1500 $\Omega$ )

**Coil data** (continued)

**Coil versions, THT, bistable 1 coil**

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
056	3	2.25	-2.25	300	30
051	5	3.75	-3.75	740	34
057	9	6.75	-6.75	2160	38
052	12	9.00	-9.00	4500	32
054	24	18.00	-18.00	4500	128

**Coil data** (continued)

**Coil versions, SMT, bistable 1 coil**

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
051	5	3.75	-3.75	740	34
052	12	9.00	-9.00	4500	32

A nominal voltage of 24V is feasible with a 12V coil with a series resistor (4500 $\Omega$ )

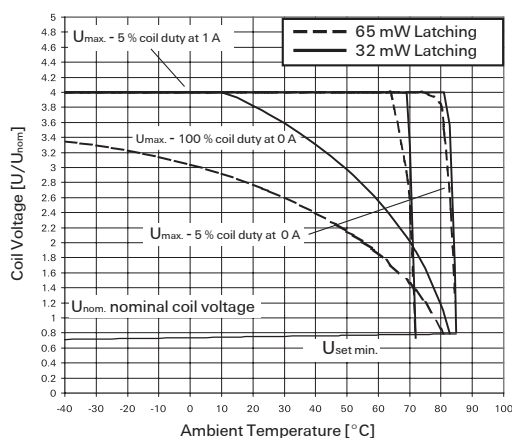
Other coil voltages on request

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

Coils I and II are identical.

**Coil operative range, bistable**

$U_{max}$  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).

**Insulation Data**

Initial dielectric strength	
between open contacts	500V <sub>rms</sub>
between contact and coil	1500V <sub>rms</sub>
Initial surge withstand voltage	
between contact and coil	2500V
Capacitance	
between open contacts	max. 5pF
between contact and coil	max. 6pF
Clearance/creepage	
between contact and coil	0.75mm
between adjacent contacts	0.75mm

**RF Data**

Isolation at 100MHz/900MHz	-30.0dB/-18.0dB
Insertion loss at 100MHz/900MHz	-0.12dB/-1.9dB
Voltage standing wave ratio (VSWR)	
at 100MHz/900MHz	1.06/1.75

**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](http://www.te.com/customer-support/rohssupportcenter)

Ambient temperature	-40 to +85°C
Category of environmental protection, IEC 61810	RT III - immersion cleanable
Vibration resistance (functional)	20g, 200 to 2000Hz 40g, 10 to 200Hz
Shock resistance (functional) IEC 60068-2-27 (half sine)	50 g
Terminal type	PCB terminals and SMT terminals
Weight	max. 2g
Resistance to soldering heat THT IEC 60068-2-20	265 °C/10s
Resistance to soldering heat SMT IEC 60068-2-58	see reflow profile
Moisture sensitive level, JEDEC J-Std-020D	MSL3
Washing	not recommended
Ultrasonic cleaning	possible
Packaging unit	
THT	2000 pcs.
SMT	2400 pcs.

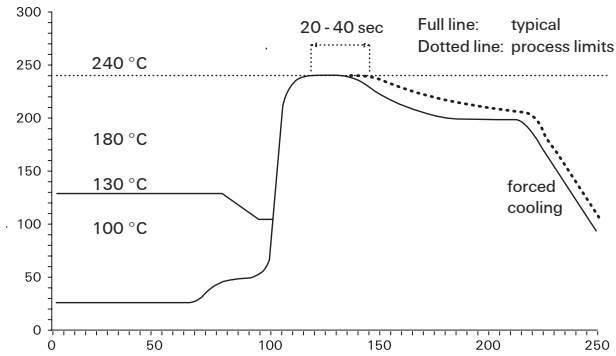


**P1 Relay V23026 (Continued)**

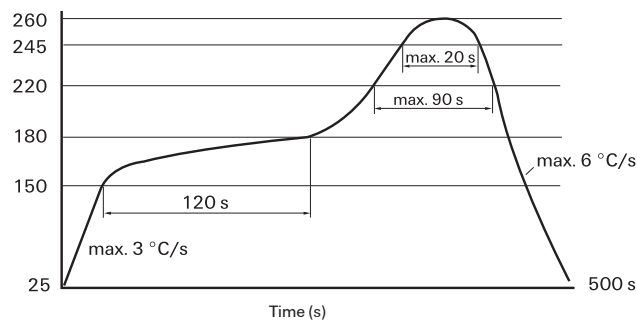
**Processing**

Recommended soldering conditions

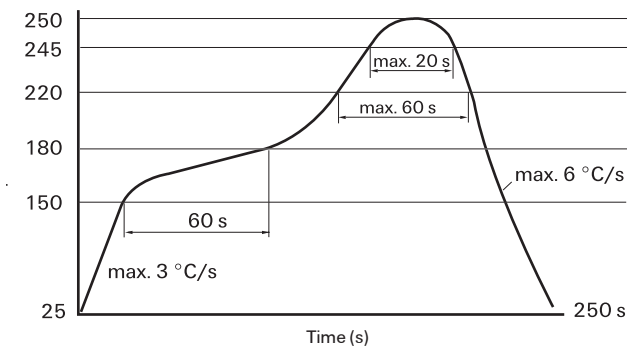
Soldering conditions according IEC 60058-2-58 and IPC/JEDEC J-STD-020B



Resistance to soldering heat - Reflow profile Vapor Phase Soldering: temperature/time profile (lead and housing peak temperature)

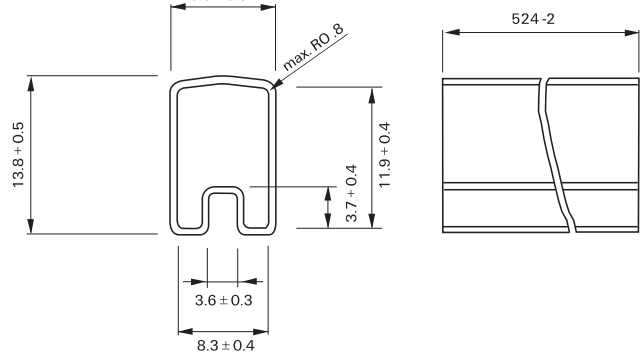


Recommended reflow soldering profile

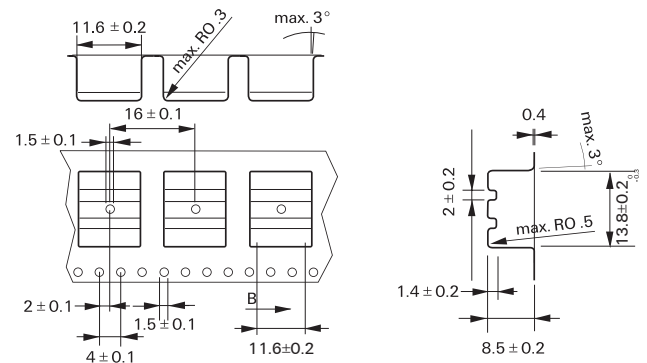


**Packing**

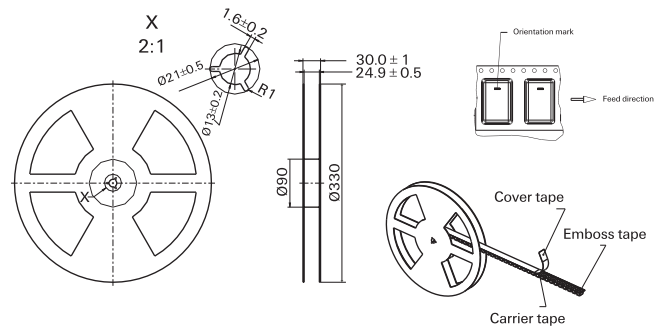
Tube for THT version  
40 relays per tube, 2000 relays per box



Tape and reel for SMT version  
480 relays per reel, 2400 relays per box



Reel dimensions



## P1 Relay V23026 (Continued)

### Product code structure

Typical product code

**V23026**
**A1**
**002**
**B201**

#### Type

**V23026** P1 Series Signal Relay

#### Version

**A1** THT, monostable

**D1** SMT, monostable

**B1** THT, bistable (latching), 2 coils

**E1** SMT, bistable (latching), 2 coils

**C1** THT, bistable (latching), 1 coil

**F1** SMT, bistable (latching), 1 coil

#### Coil

Coil code: please refer to coil versions table

#### Contacts

**B201** 1 form C, 1 CO

Product Code	Version	Coil	Coil voltage	Part Number
V23026A1006B201	THT version	monostable	3VDC	1-1393774-7
V23026A1001B201			5VDC	1393774-1
V23026A1005B201			9VDC	1-1393774-5
V23026A1002B201			12VDC	1393774-8
V23026A1004B201			24VDC	1-1393774-2
V23026B1106B201		bistable, 2 coils	3VDC	1393775-3
V23026B1101B201			5VDC	3-1393774-4
V23026B1105B201			9VDC	1393775-2
V23026B1102B201			12VDC	3-1393774-5
V23026C1056B201			3VDC	2-1393774-6
V23026C1051B201			5VDC	2-1393774-0
V23026C1057B201			9VDC	2-1393774-7
V23026C1052B201			12VDC	2-1393774-1
V23026C1054B201	SMT version	monostable	24VDC	2-1393774-4
V23026D1026B201			3VDC	1393776-8
V23026D1021B201			5VDC	1393776-3
V23026D1025B201			9VDC	1422015-9
V23026D1022B201			12VDC	1393776-4
V23026D1024B201			24VDC	1393776-7
V23026E1106B201		bistable, 2 coils	3VDC	1393777-3
V23026E1101B201			5VDC	1422015-6
V23026E1105B201			9VDC	1393777-2
V23026E1102B201			12VDC	1393776-9
V23026F1051B201			9VDC	1422015-8
V23026F1052B201			12VDC	4-1393774-3