

# Product Data Sheet

One27 Male mid-profile,  
Part No. 403-53020-51

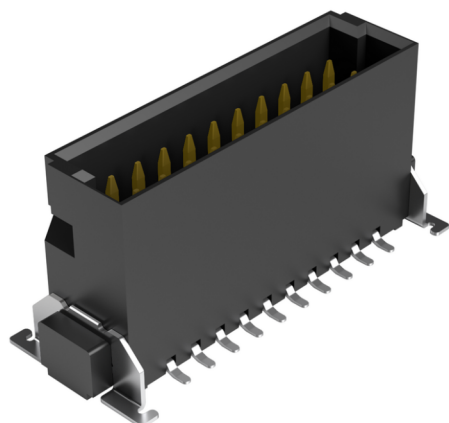
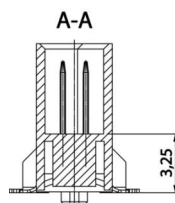
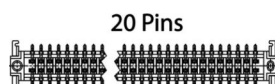


Illustration similar



Parallel



Perpendicular



SMT



Cable-to-Board



High Density



Rugged

- Can be combined for a PCB spacing (board-to-board distance) of 9.5–18.4 mm
- contact wipe 1.5 mm
- number of positions 20 in a pitch of 1.27 mm
- termination technology SMT
- height (unplugged): 3.25 mm
- Performance Level 1



» to product on [www.ept.de](http://www.ept.de)



» to product group One27

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## Technical Specifications

### Basics

|                             |                  |
|-----------------------------|------------------|
| No. of Contacts             | 20               |
| Termination Technology      | SMT              |
| Board-to-Board Distance     | 9.5 mm – 18.4 mm |
| Operating Temperature Range | -55°C to +125°C  |

### Material

|                               |                                        |
|-------------------------------|----------------------------------------|
| Insulator Material            | LCP, UL 94 V-0                         |
| CTI value<br><i>IEC 60112</i> | 175                                    |
| Contact Material              | copper alloy                           |
| Plating                       | gold over palladium-nickel over nickel |
| Termination area              | tin over nickel                        |

### Mechanical

|                                                                                 |                                        |
|---------------------------------------------------------------------------------|----------------------------------------|
| Pitch                                                                           | 1.27 mm                                |
| Mating Force per Pin                                                            | ≤ 0.5 N                                |
| Separating Force per Pin                                                        | ≥ 0.1 N                                |
| Durability<br><i>IEC 60512-9-1</i>                                              | performance level 1: 500 mating cycles |
| Coplanarity                                                                     | ≤ 0.1 mm                               |
| Vibration, sinusoidal<br><i>IEC 60512-6-4</i>                                   | 10–2000 Hz, 20 g                       |
| Contact mating problems if vibrations occur, sinusoidal<br><i>IEC 60512-2-5</i> | ≤ 1 µs                                 |
| Shock, semi-sinusoidal<br><i>IEC 60512-6-3</i>                                  | 50 g, 11 ms                            |
| Contact mating problems if shock occur, semi-sinusoidal<br><i>IEC 60512-2-5</i> | ≤ 1 µs                                 |
| Overmating Distance                                                             | 0.9 mm                                 |
| Wipe lenght                                                                     | 1.5 mm                                 |
| Center offset                                                                   | ± 0.7 mm                               |
| Axial offset when mated (x/y)                                                   | ± 0.4 mm                               |
| Angular offset longitudinally                                                   | ± 4°                                   |
| Angular offset transversally                                                    | ± 2°                                   |

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### Electrical

|                                               |                                                                             |
|-----------------------------------------------|-----------------------------------------------------------------------------|
| Operational Current<br><i>IEC 60512-5-2</i>   | 3.1 A at 20°C (4-pin out of 50-pin)<br>1.4 A at 20°C (50-pin out of 50-pin) |
| Test Voltage<br><i>IEC 60512-4-1</i>          | 500 VAC                                                                     |
| Contact Resistance<br><i>IEC 60512-2-1</i>    | ≤ 25 mΩ                                                                     |
| Clearance and Creepage                        | at least 0.4 mm                                                             |
| Insulation Resistance<br><i>IEC 60512-3-1</i> | ≥ 10 GΩ                                                                     |

### Processing

|                                                  |                        |
|--------------------------------------------------|------------------------|
| Soldering Temperature<br><i>JEDEC J-STD-020E</i> | 20–40 seconds at 260°C |
| MSL<br><i>JEDEC J-STD-020E</i>                   | 1                      |
| Assembly                                         | Pick and Place         |

### Approval / Compliance

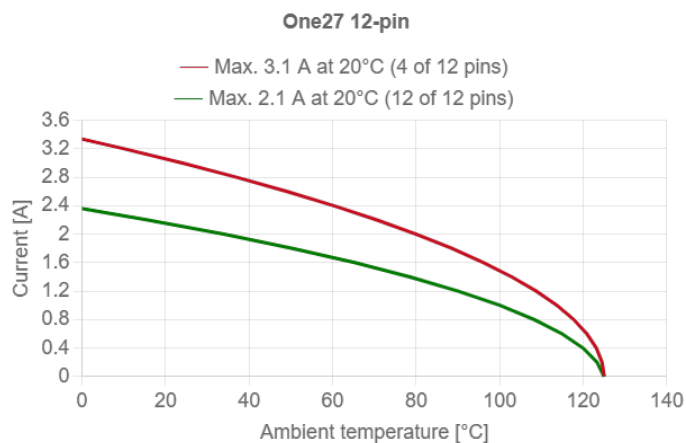
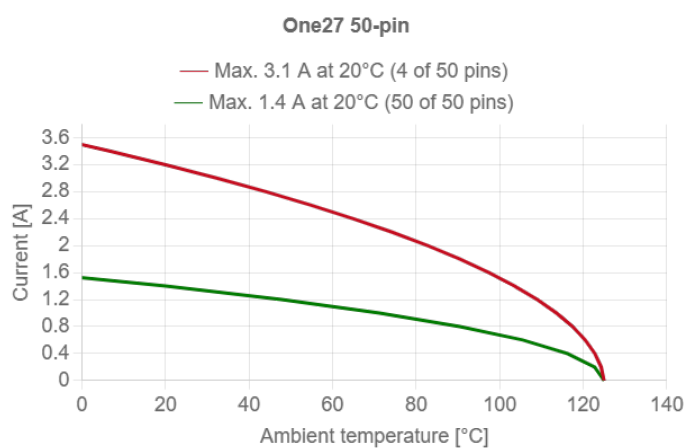
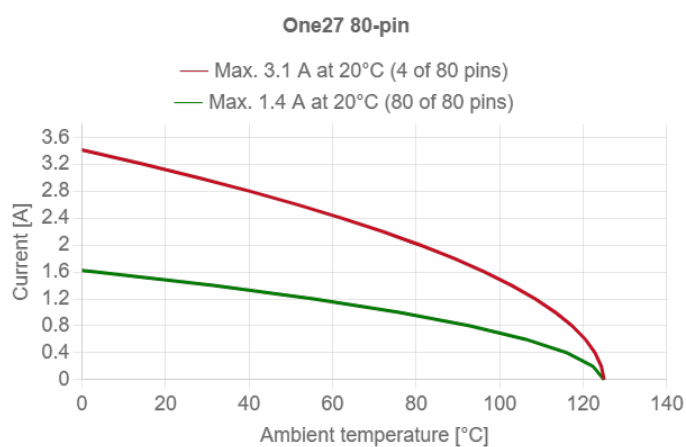
|             |                |
|-------------|----------------|
| UL file     | E130314        |
| Environment | RoHS compliant |

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## Derating Diagram



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## Modifications

Available on request

- other pole counts
- other quality grades

## Drawings

Component data in 2D and 3D format you can download here:

[» PDF](#)

[» 3D IGES](#)

[» 3D STEP](#)

[» 3D PDF](#)