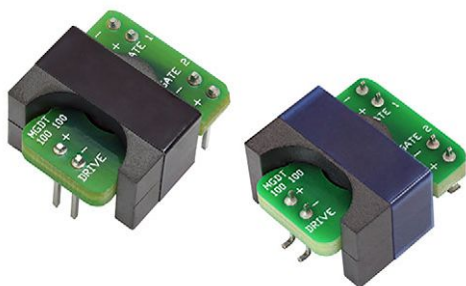


## Miniaturized Gate Drive Planar Transformers



### FEATURES

**RoHS\***  
Available

- Deliver MOSFET / IGBT gate power and timing signals simultaneously
- Directly drive high side MOSFETs / IGBTs on busses up to 1200 V
- Excellent rise time, overshoot, and peak current characteristics
- 8 mm minimum creepage and clearance from drive to gates
- Low profile planar package
- LF and SM versions are RoHS-compliant
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### Note

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

| ABSOLUTE MAXIMUM RATINGS               |                                |                       |                 |
|----------------------------------------|--------------------------------|-----------------------|-----------------|
| PARAMETER                              | CONDITIONS                     | LIMITS                | UNITS           |
| Dielectric withstand voltage           | Drive to gate, 1 min           | 3750                  | V <sub>AC</sub> |
|                                        | Gate to gate, 1 min            | 2500                  | V <sub>AC</sub> |
| Total power dissipation <sup>(1)</sup> | T <sub>A</sub> = 25 °C         | 2.0                   | W               |
| Operating temperature <sup>(2)</sup>   | Continuous                     | -55 to +125           | °C              |
| Storage temperature                    | Continuous                     | -55 to +130           | °C              |
| Frequency                              |                                | 100 to 500            | kHz             |
| Size (L x W x H)                       |                                | 20.57 x 18.42 x 11.43 | mm              |
| Terminals                              | Through-hole and surface-mount |                       |                 |

### Note

- <sup>(1)</sup> Derate at 33.3 mW/°C above 25 °C  
<sup>(2)</sup> Derate drive level to 60 V/μs above 85°C

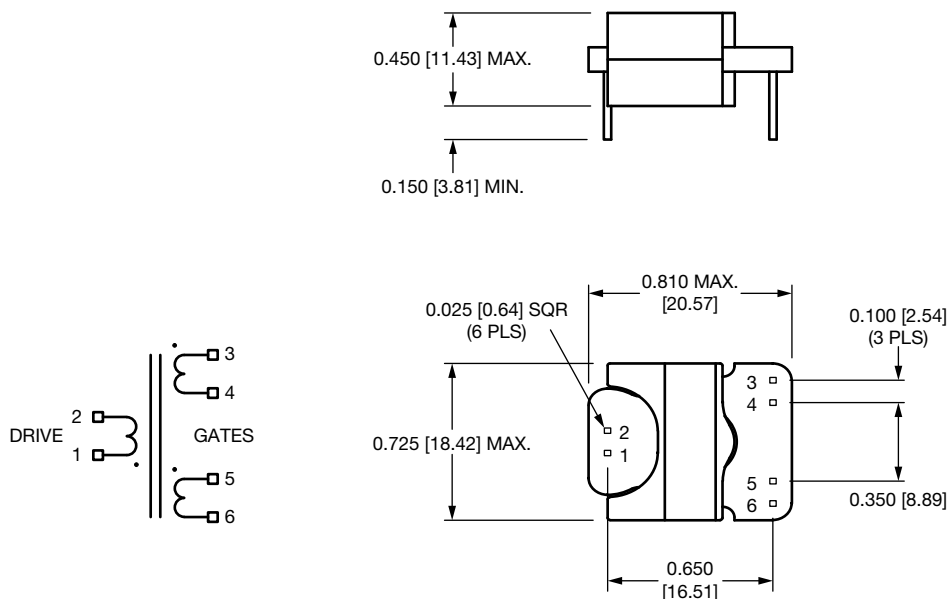
| STANDARD ELECTRICAL SPECIFICATIONS |                          |                                       |                             |                                                    |                                             |                              |                |                          |                        |
|------------------------------------|--------------------------|---------------------------------------|-----------------------------|----------------------------------------------------|---------------------------------------------|------------------------------|----------------|--------------------------|------------------------|
| PART NUMBER                        | USEFUL FREQ. RANGE (kHz) | TRANSFER RATIO (± 3 %) <sup>(1)</sup> | DRIVE EXCITATION MAX. (Vμs) | MAGNETIZING INDUCTANCE MIN. (μH) <sup>(2)(3)</sup> | LEAKAGE INDUCTANCE MAX. (μH) <sup>(4)</sup> | DC RESISTANCE <sup>(2)</sup> |                | INTERWINDING CAPACITANCE |                        |
|                                    |                          |                                       |                             |                                                    |                                             | DRIVE MAX. (Ω)               | GATES MAX. (Ω) | DRIVE TO GATE MAX. (pF)  | GATE TO GATE MAX. (pF) |
| MGDT100100                         | 100 to 500               | 1 : 1 : 1                             | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.35           | 15                       | 10                     |
| MGDT100100LF                       | 100 to 500               | 1 : 1 : 1                             | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.35           | 15                       | 10                     |
| MGDT100100-SM                      | 100 to 500               | 1 : 1 : 1                             | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.35           | 15                       | 10                     |
| MGDT100125                         | 100 to 500               | 1 : 1.25 : 1.25                       | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.50           | 25                       | 10                     |
| MGDT100125LF                       | 100 to 500               | 1 : 1.25 : 1.25                       | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.50           | 25                       | 10                     |
| MGDT100125-SM                      | 100 to 500               | 1 : 1.25 : 1.25                       | 80                          | 240                                                | 0.5                                         | 0.35                         | 0.50           | 25                       | 10                     |

### Notes

- <sup>(1)</sup> Drive : gate : gate  
<sup>(2)</sup> T<sub>A</sub> = 25 °C  
<sup>(3)</sup> 100 mV at 100 kHz across the drive winding with all gates open  
<sup>(4)</sup> 100 mA at 100 kHz into the drive winding with all gates shorted

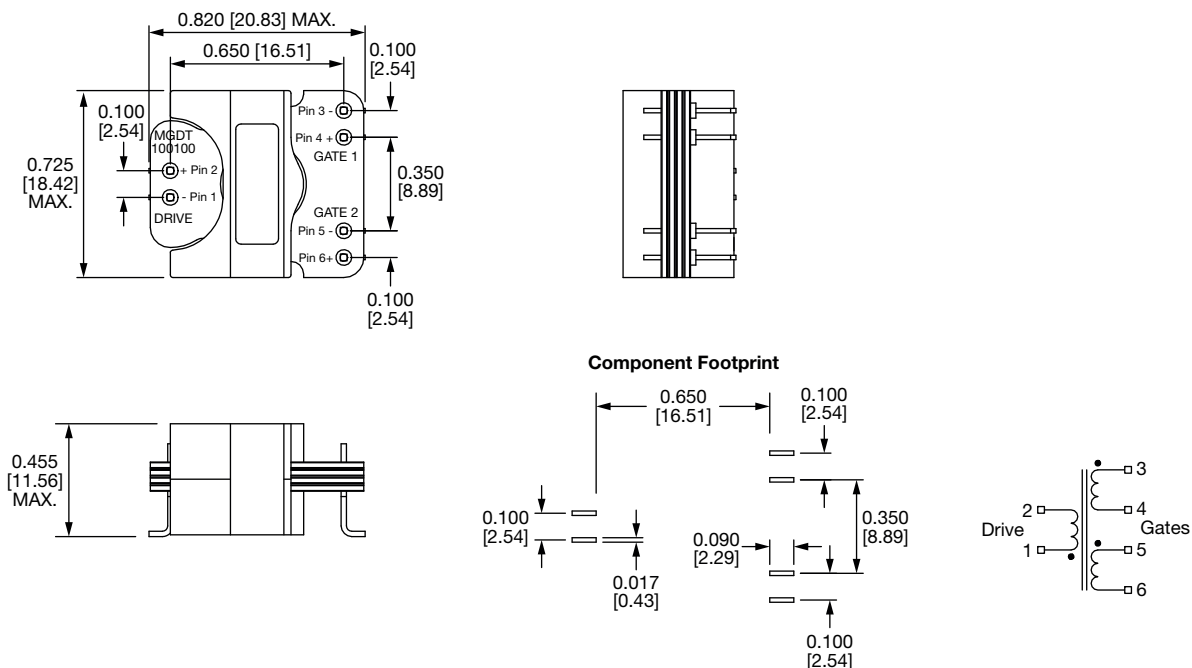
### DIMENSIONS in inches [millimeters]

#### MGDT1001..., MGDT1001...LF



Tolerance on all dimensions is  $\pm 0.010$  [0.25] unless otherwise specified.

#### MGDT1001...-SM





## Disclaimer

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