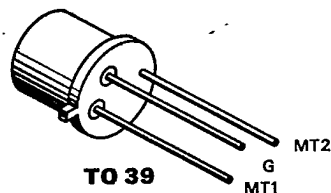


8834750 TAG SEMICONDUCTORS LTD

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TAG SEMICONDUCTORS LTD


**Z0305BG -  
Z0305MG TRIACS**
**3.0 A 200-600 V  
5/5/5/5 mA**

The Z0305 series of TRIAC's are high performance PNP devices diffused with TAG's proprietary Top Glass™ Process. These parts are intended for general purpose applications where logic compatible gate sensitivity is required.

**Absolute Maximum Ratings**  $T_A = 25^\circ\text{C}$  unless otherwise noted

| Parameter                         | Part Nr.       | Symbol       | Min. | Max. | Unit             | Test Conditions                                                                |
|-----------------------------------|----------------|--------------|------|------|------------------|--------------------------------------------------------------------------------|
| Repetitive Peak Off State Voltage | <b>Z0305BG</b> | $V_{DRM}$    | 200  |      | V                | $T_J = -40^\circ\text{C}$ to $125^\circ\text{C}$<br>$R_{GK} = 1\text{K}\Omega$ |
|                                   | <b>Z0305DG</b> |              | 400  |      | V                |                                                                                |
|                                   | <b>Z0305MG</b> |              | 600  |      | V                |                                                                                |
| On-State Current                  |                | $I_{T(RMS)}$ | 3.0  |      | A                | All Conduction Angles $T_C = 85^\circ\text{C}$                                 |
| Nonrept. On-State Current         |                | $I_{TSM}$    | 22   |      | A                | Half Cycle, 60 Hz                                                              |
| Nonrept. On-State Current         |                | $I_{TSM}$    | 20   |      | A                | Half Cycle, 50 Hz                                                              |
| Fusing Current                    |                | $I^2t$       | 2    |      | A <sup>2</sup> s | $t = 10\text{ ms}$                                                             |
| Peak Gate Current                 |                | $I_{GM}$     | 1.2  |      | A                | 10 $\mu\text{s}$ max.                                                          |
| Peak Gate Dissipation             |                | $P_{GM}$     | 3    |      | W                | 10 $\mu\text{s}$ max.                                                          |
| Gate Dissipation                  |                | $P_{G(AV)}$  | 0.2  |      | W                | 20 ms max.                                                                     |
| Operating Temperature             |                | $T_J$        | -55  | 125  | $^\circ\text{C}$ |                                                                                |
| Storage Temperature               |                | $T_{stg}$    | -65  | 150  | $^\circ\text{C}$ |                                                                                |
| Soldering Temperature             |                | $T_{sld}$    |      | 250  | $^\circ\text{C}$ | 1.6 mm from case, 10 s max.                                                    |

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

| Parameter                        | Symbol            | Min. | Max. | Unit             | Test Conditions                                                                 |
|----------------------------------|-------------------|------|------|------------------|---------------------------------------------------------------------------------|
| Off-State Leakage Current        | $I_{DRM}$         |      | 200  | $\mu\text{A}$    | $V_D = V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_J = 125^\circ\text{C}$            |
| Off-State Leakage Current        | $I_{DRM}$         |      | 5    | $\mu\text{A}$    | $V_D = V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_J = 25^\circ\text{C}$             |
| On-State Voltage                 | $V_T$             |      | 1.85 | V                | at $I_T = 4.5\text{ A}$ , $T_J = 25^\circ\text{C}$                              |
| On-State Threshold Voltage       | $V_{T(TO)}$       |      | 0.95 | V                | $T_J = 125^\circ\text{C}$                                                       |
| On-State Slope Resistance        | $r_T$             |      | 200  | m $\Omega$       | $T_J = 125^\circ\text{C}$                                                       |
| Gate Trigger Current             | $I_{GT I+}$ (1)   |      | 5    | mA               | $V_D = 12\text{ V}$                                                             |
|                                  | $I_{GT I-}$ (2)   |      | 5    | mA               | $V_D = 12\text{ V}$                                                             |
|                                  | $I_{GT III-}$ (3) |      | 5    | mA               | $V_D = 12\text{ V}$                                                             |
|                                  | $I_{GT III+}$ (4) |      | 5    | mA               | $V_D = 12\text{ V}$                                                             |
| Gate Trigger Voltage             | $V_{GT}$          |      | 2    | V                | $V_D = 12\text{ V}$ All Quadrants                                               |
| Holding Current                  | $I_H$             |      | 5    | mA               | $R_{GK} = 1\text{K}\Omega$                                                      |
| Critical Rate of Voltage Rise    | $dv/dt$           | 30   |      | V/ $\mu\text{s}$ | $V_D = .67 \times V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_J = 125^\circ\text{C}$ |
| Critical Rate of Rise, Off-State | $dv/dt_c$         | 1    |      | V/ $\mu\text{s}$ | $I_T = 0.8\text{ A}$ $di/dt = 0.35\text{ A/ms}$ $T_C = 85^\circ\text{C}$        |
| Thermal Resistance junc. to case | $R_{\theta jc}$   |      | 9    | K/W              |                                                                                 |
| Thermal Resistance junc. to amb. | $R_{\theta ja}$   |      | 160  | K/W              |                                                                                 |