

HTS4A80A

3 Quadrants Standard TRIAC

FEATURES

- Repetitive Peak Off-State Voltage : 800V
- R.M.S On-State Current ($I_{T(RMS)} = 4A$)
- Gate Trigger Current : 35mA
- High commutation capability.

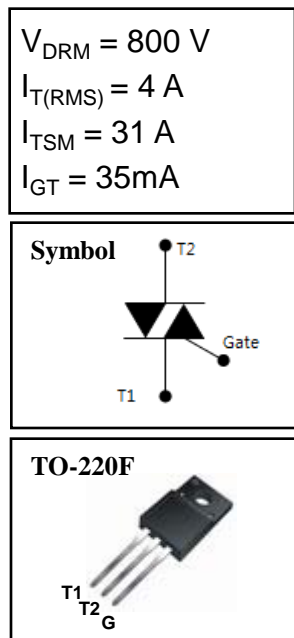
Applications

General purpose of AC switching, heating control, motor control, etc

General Description

Semihow's standard TRIAC product is a glass passivated device, has a high commutative performance, stable gate triggering level to temperature and high off state voltage. It is generally suitable for power and phase control in ac application

Absolute Maximum Ratings ($T_J=25^\circ\text{C}$ unless otherwise specified)



| Symbol | Parameter | Conditions | Ratings | Unit |
|--------------|----------------------------------------|--------------------------------------------------------------|----------|------------------|
| V_{DRM} | Repetitive Peak Off-State Voltage | Sine wave, 50/60Hz, Gate open | 800 | V |
| V_{RRM} | Repetitive Peak Reverse Voltage | | 800 | V |
| $I_{T(AV)}$ | Average On-State Current | Full sine wave, $T_C = 105^\circ\text{C}$ | 3.6 | A |
| $I_{T(RMS)}$ | R.M.S. On-State Current | | 4 | A |
| I_{TSM} | Surge On-State Current | ½ cycle, 50Hz/60Hz, Sine wave, Non repetitive | 30/31 | A |
| I^2t | Fusing Current | $t = 10\text{ms}$ | 5.1 | A ² S |
| P_{GM} | Forward Peak Gate Power Dissipation | $T_J = 125^\circ\text{C}$ | 5 | W |
| $P_{G(AV)}$ | Forward Average Gate Power Dissipation | $T_J = 125^\circ\text{C}$, over any 20ms | 1 | W |
| I_{FGM} | Forward Peak Gate Current | $T_J = 125^\circ\text{C}$, pulse width $\leq 20\mu\text{s}$ | 4 | A |
| V_{RGM} | Reverse Peak Gate Voltage | $T_J = 125^\circ\text{C}$, pulse width $\leq 20\mu\text{s}$ | 5 | V |
| T_J | Operating Junction Temperature | | -40~+125 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | | -40~+150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise specified)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|------------------|--------------------------------------------|----------------------------------------------------------|-------------------------|-----|-----|------|------------------------|
| I_{DRM} | Repetitive Peak Off-State Current | $V_D = V_{\text{DRM}}$ | $T_J=25^\circ\text{C}$ | - | - | 5 | μA |
| | | | $T_J=125^\circ\text{C}$ | - | - | 1 | mA |
| I_{RRM} | Repetitive Peak Reverse Current | $V_D = V_{\text{DRM}}$ | $T_J=25^\circ\text{C}$ | - | - | 5 | μA |
| | | | $T_J=125^\circ\text{C}$ | - | - | 1 | mA |
| I_{GT} | Gate Trigger Current | $V_D = 12\text{V}, R_L=330\Omega$ | 1+, 1-, 3- | - | - | 35 | mA |
| V_{GT} | Gate Trigger Voltage | $V_D = 12\text{V}, R_L=330\Omega$ | 1+, 1-, 3- | - | - | 1.3 | V |
| V_{GD} | Non-Trigger Gate Voltage ¹ | $V_D = 12\text{V}, R_L=330\Omega, T_J=125^\circ\text{C}$ | | 0.2 | - | - | V |
| V_{TM} | Peak On-State Voltage | $I_T = 5.5\text{A}, I_G = 20\text{mA}$ | | - | - | 1.6 | V |
| dv/dt | Critical Rate of Rise of Off-State Voltage | $V_D = 2/3 V_{\text{DRM}}, T_J=125^\circ\text{C}$ | | 400 | - | - | $\text{V}/\mu\text{s}$ |
| I_{H} | Holding current | $I_T = 0.2\text{A}$ | | - | - | 35 | mA |

Notes :

1. Pulse Width $\leq 1.0\text{ms}$, Duty Cycle $\leq 1\%$

Thermal Characteristics

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|-----------------------|--------------------|---------------------|-----|-----|-----|---------------------------|
| $R_{\theta\text{JC}}$ | Thermal Resistance | Junction to Case | | | 4.0 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta\text{JA}}$ | Thermal Resistance | Junction to Ambient | | | 58 | $^\circ\text{C}/\text{W}$ |

Typical Characteristics

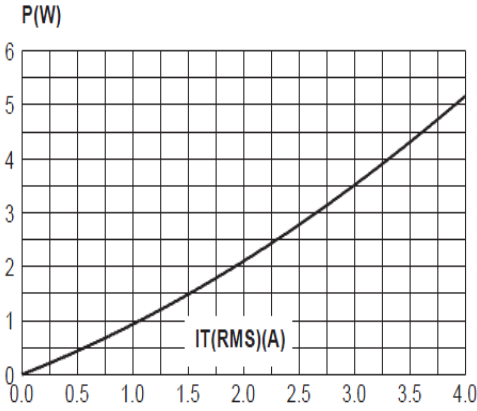


Fig 1. R.M.S. current vs. Power dissipation

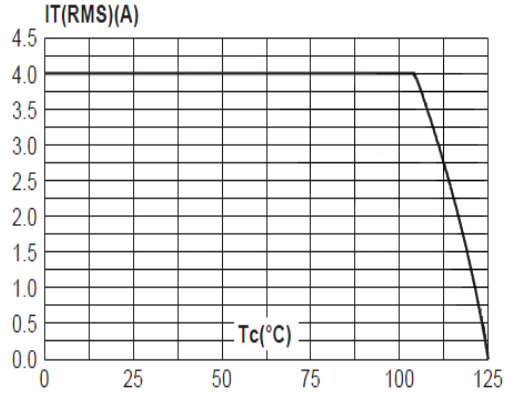


Fig 2. R.M.S. current vs. Case temperature

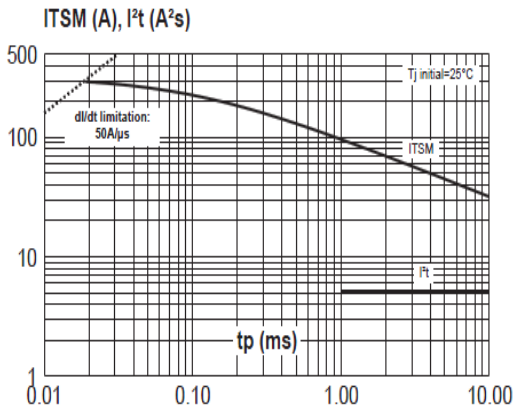


Fig 3. Surge on state vs. pulse time (Non-repetitive)

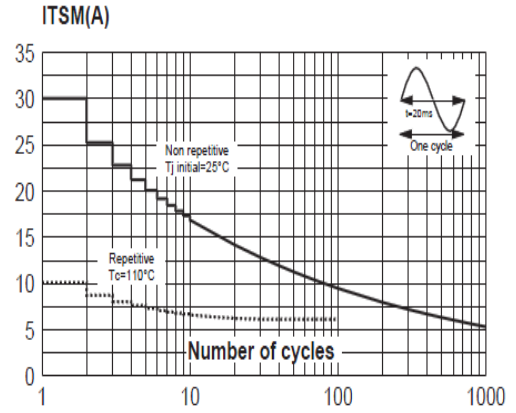


Fig 4. Surge on state current rating

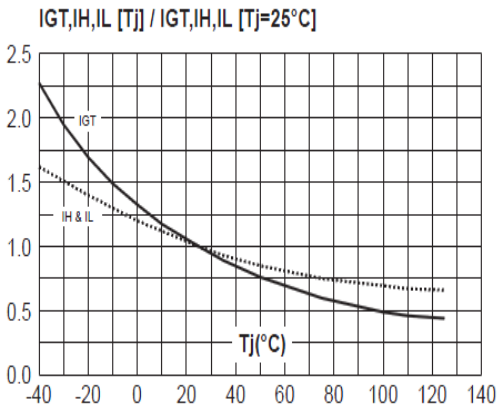


Fig 5. Gate trigger current vs. junction temperature

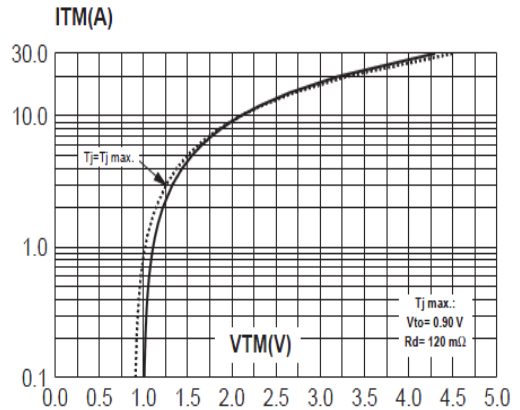


Fig 6. Instantaneous on state current vs. Instantaneous on state voltage

Typical Characteristics

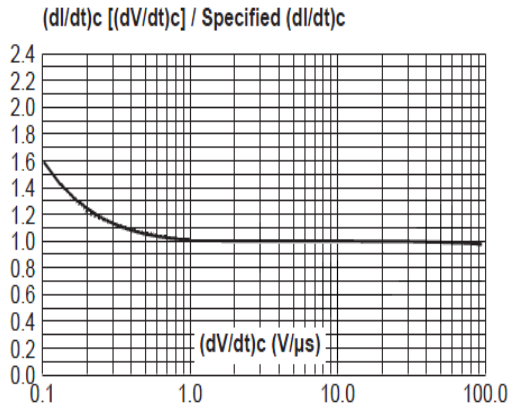


Fig 7. Relative Variation of Critical Rate of Decrease of main Current Versus(dV/dt)_c

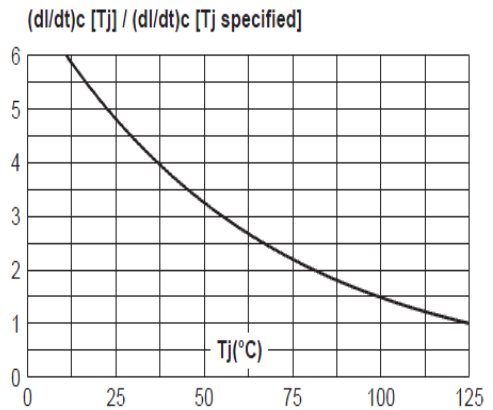
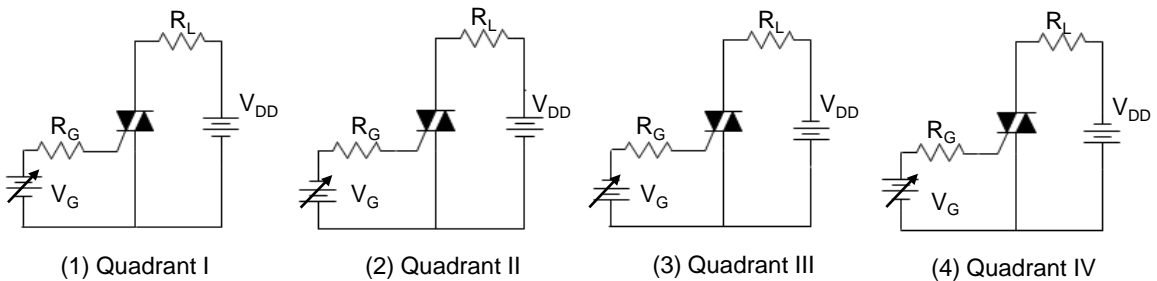


Fig 8. Relative Variation of Critical Rate of Decrease of main Current Junction Temperature

Measurement of gate trigger current



Note. Whole parameter and test condition can not be over absolute maximum ratings in this datasheet.

Package Dimension

TO-220F

