

TRIAC

BT138S

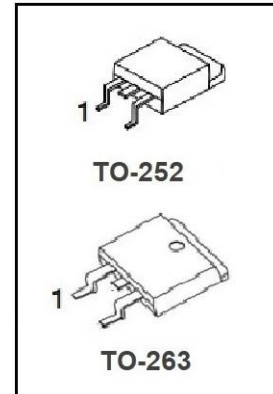
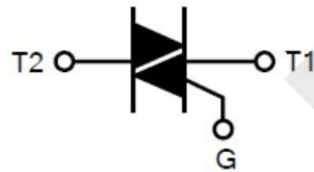
FEATURES

This device of sensitive TRIAC product is a glass passivated device, has a low gate trigger current, high stability in gate trigger current to variation of operating temperature and high off state voltage.

APPLICATIONS

This device is suitable for low power AC switching application, phase control application such as fan speed and temperature modulation control, lighting control and static switching relay.

SYMBOL:



| Package | Pin assignment | | |
|---------|----------------|----|---|
| | 1 | 2 | 3 |
| TO-252 | T1 | T2 | G |
| TO-263 | T1 | T2 | G |

ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | VALUE | | UNIT |
|---|--------------------|-------------------|-----|------------------|
| Repetitive Peak Off-State Voltages | V_{DRM}, V_{RRM} | BT138S-600(D/E/F) | 600 | V |
| | | BT138S-800(D/E/F) | 800 | |
| RMS on-State Current | $I_{T(RMS)}$ | 12 | | A |
| Non-Repetitive Peak On-State Current | I_{TSM} | 120 | | A |
| I^2t for fusing | I^2t | 78 | | A ² s |
| Repetitive rate of rise of on-state current after triggering | dI_T/dt | I-IV | 50 | A/uS |
| Peak gate current | I_{GM} | 4 | | A |
| Peak Gate Power | P_{GM} | 5 | | W |
| Average Gate Power | $P_{G(AV)}$ | 1 | | W |
| Operating junction temperature | T_J | -40~+125 | | °C |
| Storage Temperature | T_{STG} | -40 ~ +150 | | °C |

ELECTRICAL CHARACTERISTICS (T_J=25°C)

| Parameter | Symbol | Test Conditions | | MIN | MAX | | | Units |
|---|--------------------------------------|--|-----|-----|-----|----|----|-------|
| | | | | | D | E | F | |
| Peak Repetitive Forward or Reverse Blocking Current | I _{DRM} I _{RRM} | V _{AK} = Rated V _{DRM} or V _{RRM} ; | | | 5 | | | uA |
| Gate Trigger Current | I _{GT} | V _D =12V, R _L =100Ω | I | | 5 | 10 | 25 | mA |
| | | | II | | 5 | 10 | 25 | |
| | | | III | | 5 | 10 | 25 | |
| | | | IV | | 10 | 25 | 50 | |
| Gate Trigger Voltage | V _{GT} | V _D =12V, R _L =100Ω | | | 1.3 | | | V |
| Gate Non-Trigger Voltage | V _{GD} | V _D = V _{DRM} , R _L = 33 kΩ, T _j = 125 °C | | 0.2 | | | | V |
| Peak Forward On-State Voltage | V _{TM} | I _T =15A, | | | 1.6 | | | V |
| Latch Current | I _L | I _G =1.2I _{GT} | I | | 10 | 20 | 40 | mA |
| | | | II | | 20 | 40 | 80 | |
| | | | III | | 10 | 20 | 40 | |
| | | | IV | | 10 | 20 | 40 | |
| Holding Current | I _H | I _T =0.1A | | | 10 | 15 | 35 | mA |
| Critical Rate of Rise of Off-State Voltage | dV/dt | V _D =67%V _{DRM} , T _J =25°C, Gate open | | 40 | | | | V/μs |