



THE DATASHEET OF HT14G



1A, 50V - 1000V High Efficient Rectifier

FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High current capability
- High reliability
- High surge current capability
- High efficiency, Low V_F
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

- Case: TS-1
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.200g (approximately)

| KEY PARAMETERS | | |
|----------------|------------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 1 | A |
| V_{RRM} | 50 - 1000 | V |
| I_{FSM} | 30 | A |
| T_{JMAX} | 150 | °C |
| Package | TS-1 | |
| Configuration | Single die | |



TS-1



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|--|--------------|-------------|--------|--------|--------|--------|--------|--------|--------|------|
| PARAMETER | SYMBOL | HT 11G | HT 12G | HT 13G | HT 14G | HT 15G | HT 16G | HT 17G | HT 18G | UNIT |
| Marking code on the device | | HT 11G | HT 12G | HT 13G | HT 14G | HT 15G | HT 16G | HT 17G | HT 18G | |
| Repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 35 | 70 | 140 | 210 | 280 | 420 | 560 | 700 | V |
| Forward current | I_F | 1 | | | | | | | | A |
| Surge peak forward current, 8.3ms single half sine wave superimposed on rated load | I_{FSM} | 30 | | | | | | | | A |
| Junction temperature | T_J | -55 to +150 | | | | | | | | °C |
| Storage temperature | T_{STG} | -55 to +150 | | | | | | | | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|-----|------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 95 | °C/W |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|--|---|---|----------|-----|-----|---------------|
| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage ⁽¹⁾ | HT11G HT12G HT13G HT14G | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 1.0 | V |
| | HT15G | | | - | 1.3 | V |
| | HT16G HT17G HT18G | | | - | 1.7 | V |
| | | | | | | |
| Reverse current @ rated V_R ⁽²⁾ | | $T_J = 25^\circ\text{C}$ | I_R | - | 5 | μA |
| | | $T_J = 125^\circ\text{C}$ | | - | 150 | μA |
| Junction capacitance | HT11G HT12G HT13G HT14G HT15G | 1MHz, $V_R = 4.0\text{V}$ | C_J | 15 | - | pF |
| | HT16G HT17G HT18G | | | 10 | - | pF |
| Reverse recovery time | HT11G HT12G HT13G HT14G HT15G | $I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$ | t_{rr} | - | 50 | ns |
| | HT16G HT17G HT18G | | | - | 75 | ns |

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

| ORDERING INFORMATION | | |
|---------------------------------|---------|---------------------|
| ORDERING CODE ⁽¹⁾⁽²⁾ | PACKAGE | PACKING |
| HT1xG | TS-1 | 5,000 / Tape & Reel |
| HT1xG A0G | TS-1 | 3,000 / Ammo box |
| HT1xGH | TS-1 | 5,000 / Tape & Reel |
| HT1xGHA0G | TS-1 | 3,000 / Ammo box |

Notes:

1. "x" defines voltage from 50V (HT11G) to 1000V (HT18G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

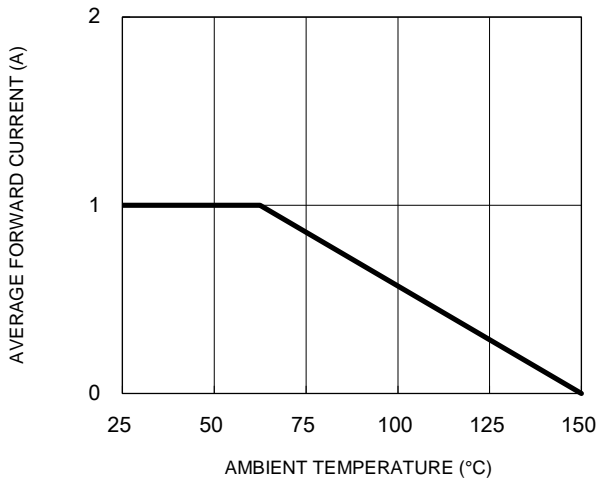


Fig.2 Typical Junction Capacitance

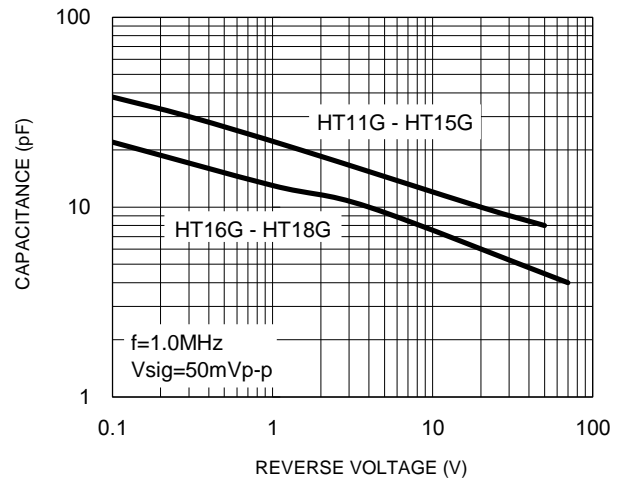


Fig.3 Typical Reverse Characteristics

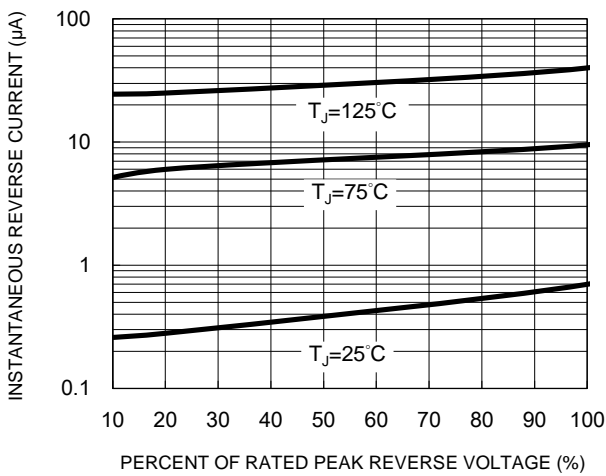


Fig.4 Typical Forward Characteristics

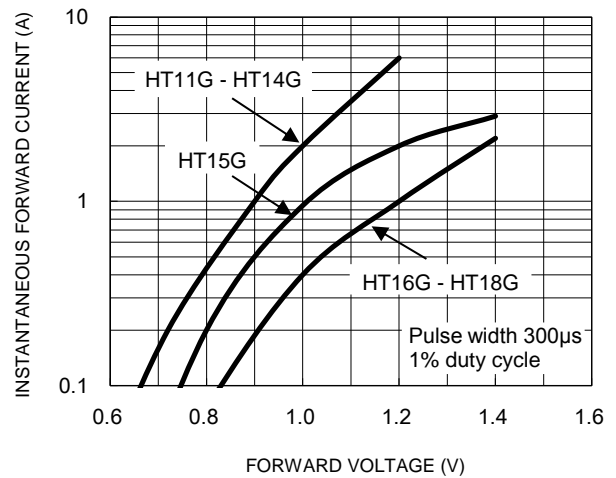
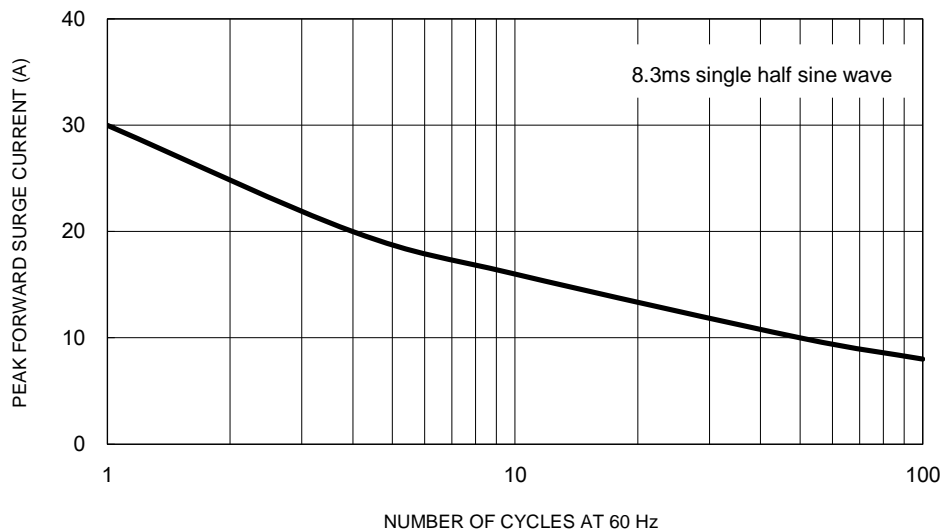


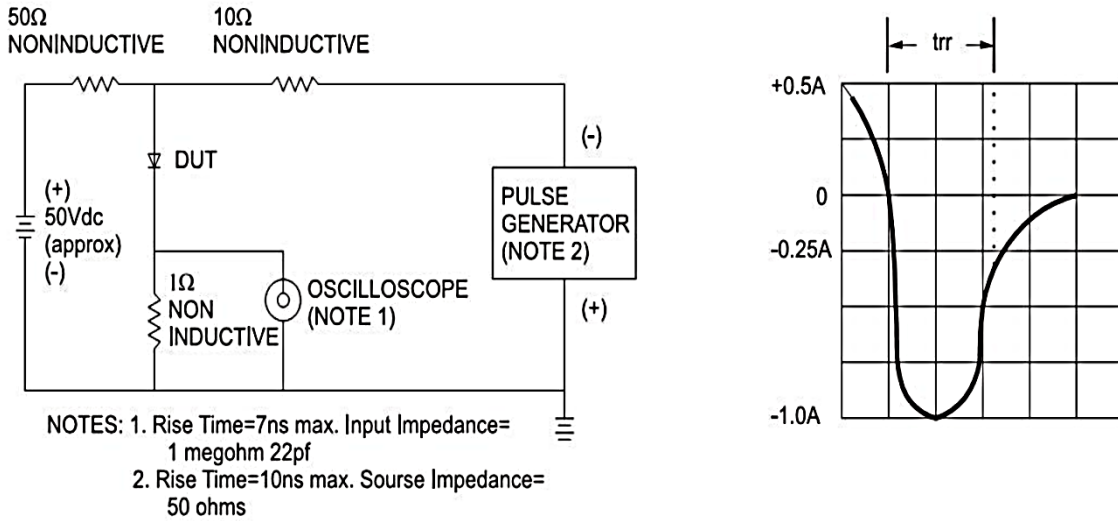
Fig.5 Maximum Non-Repetitive Forward Surge Current



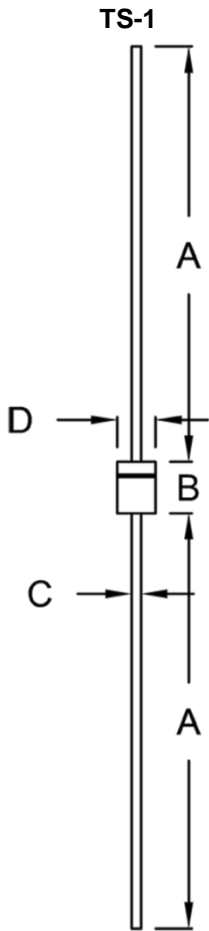
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 25.40 | - | 1.000 | - |
| B | 3.00 | 3.30 | 0.118 | 0.130 |
| C | 0.53 | 0.64 | 0.021 | 0.025 |
| D | 2.00 | 2.70 | 0.079 | 0.106 |

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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