



HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

| | |
|----------------------|---------|
| I _{F(AV)} | 2 x 10A |
| V _{RRM} | 60V |
| V _F (typ) | 0.58V |

PRELIMINARY DATASHEET

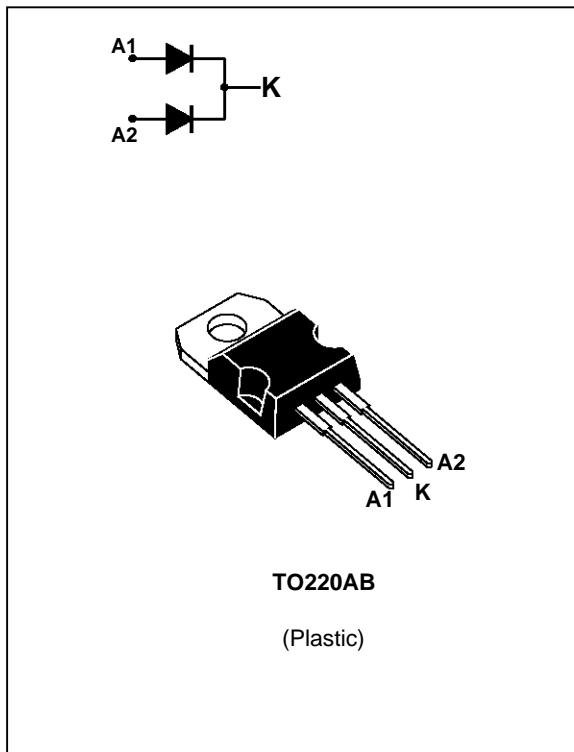
FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY

DESCRIPTION

High voltage dual Schottky rectifier suited for switchmode power supplies and other power converters.

Packaged in TO220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses and low noise are required.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | | Value | Unit | |
|---------------------|--|--|-------------------------|----------|--------|
| V _{RRM} | Repetitive peak reverse voltage | | 60 | V | |
| I _{F(RMS)} | RMS forward current | | 30 | A | |
| I _{F(AV)} | Average forward current | T _c =110°C V _R = 60V δ = 0.5 | Per diode Per device | 10 20 | A A |
| I _{FSM} | Surge non repetitive forward current | tp=10ms sinusoidal | Per diode | 200 | A |
| I _{RRM} | Repetitive peak reverse current | tp=2μs F=1KHz | Per diode | 1 | A |
| I _{RSR} | Non repetitive peak reverse current | tp=100μs | Per diode | 1 | A |
| T _{tsg} | Storage temperature range | | - 65 to + 150 | °C | |
| T _j | Max. Junction temperature | | 150 | °C | |
| dV/dt | Critical rate of rise of reverse voltage | | 1000 | V/μs | |

STPS2060CT

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|-----------|------------------|-----------|------|
| Rth (j-c) | Junction to case | Per diode | 1.6 |
| | | Total | 0.9 |
| Rth (c) | Coupling | 0.15 | °C/W |

When the diodes 1 and 2 are used simultaneously :

$$T_j - T_c(\text{diode } 1) = P(\text{diode } 1) \times R_{\text{th(j-c)}}(\text{Per diode}) + P(\text{diode } 2) \times R_{\text{th(c)}}$$

ELECTRICAL CHARACTERISTICS (Per diode)

STATIC CHARACTERISTICS

| Symbol | Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|-------------------|-------------------------|-----------------------------------|------------------------|------|------|------|------|
| I _R * | Reverse leakage current | V _R = V _{RRM} | T _j = 25°C | | | 70 | µA |
| | | | T _j = 125°C | | | 33 | mA |
| V _F ** | Forward voltage drop | I _F = 20 A | T _j = 125°C | | | 0.8 | V |
| | | I _F = 10 A | T _j = 125°C | | 0.58 | 0.67 | |
| | | I _F = 20 A | T _j = 25°C | | | 0.94 | |
| C | Capacitance | 60 V, 1MHz | T _j = 125°C | | 150 | | pF |

Pulse test : * tp = 5 ms, duty cycle < 2 %

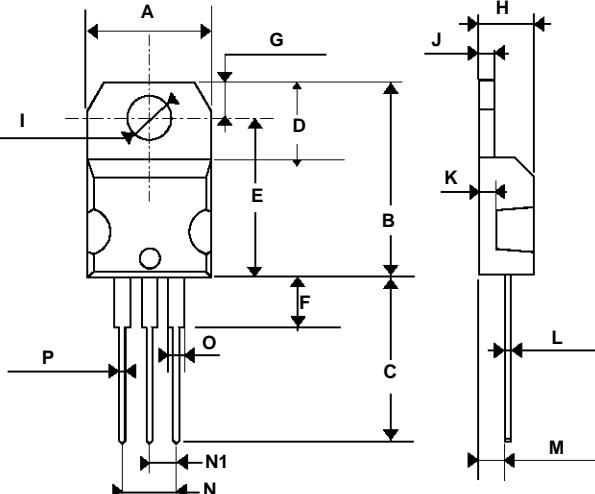
** tp = 380 µs, duty cycle < 2 %

To evaluate the conduction losses use the following equation :

$$P = 0.54 \times I_F(AV) + 0.013 \times I_F^2(\text{RMS})$$

PACKAGE MECHANICAL DATA (millimeters)

TO220AB Plastic



| REF. | DIMENSIONS | | | |
|------|-------------|-------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 9.66 | 10.66 | 0.380 | 0.419 |
| B | 15.2 | 15.9 | 0.598 | 0.626 |
| C | 13 | 14 | 0.511 | 0.551 |
| D | 6.2 | 6.6 | 0.244 | 0.260 |
| E | 16.4 | typ. | 0.645 | typ. |
| F | 3.5 | 4.2 | 0.137 | 0.165 |
| G | 2.65 | 2.95 | 0.104 | 0.116 |
| H | 4.4 | 4.6 | 0.173 | 0.181 |
| I | 3.75 | 3.85 | 0.147 | 0.151 |
| J | 1.23 | 1.32 | 0.048 | 0.051 |
| K | 1.27 | typ. | 0.050 | typ. |
| L | 0.49 | 0.70 | 0.019 | 0.027 |
| M | 2.4 | 2.72 | 0.094 | 0.107 |
| N | 4.95 | 5.15 | 0.194 | 0.203 |
| N1 | 2.40 | 2.70 | 0.094 | 0.106 |
| O | 1.14 | 1.70 | 0.044 | 0.067 |
| P | 0.61 | 0.88 | 0.024 | 0.034 |

Cooling method : by conduction (methode C)

Marking : Type number

Weigth : 2 g

Recommended torque value : 0.8m.N

Maximum torque value : 1m.N

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