

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

| | |
|-------------|-----------------|
| $I_{F(AV)}$ | 2 x 10 A |
| V_{RRM} | 60 V |
| $V_F (max)$ | 0.58 V |

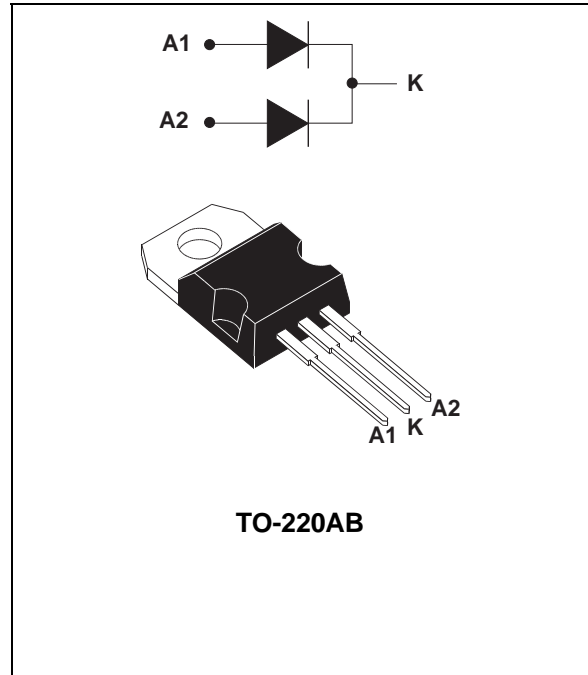
FEATURES AND BENEFITS

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

DESCRIPTION

High voltage dual Schottky rectifier suited to Switch Mode Power Supplies and other Power Converters.

Packaged in TO-220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses are required.



ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | | | Value | Unit |
|--------------|--|--|-------------------------|---------------|-------------|
| V_{RRM} | Repetitive peak reverse voltage | | | 60 | V |
| $I_{F(RMS)}$ | RMS forward current | | Per diode | 30 | A |
| $I_{F(AV)}$ | Average forward current | $T_{case} = 120^{\circ}C$ $V_R = 60V$ $\delta = 0.5$ | Per diode Per device | 10 20 | A |
| I_{FSM} | Surge non repetitive forward current | $t_p = 10\ ms$ Sinusoidal | Per diode | 200 | A |
| I_{RRM} | Repetitive peak reverse current | $t_p = 2\ \mu s$ $F = 1\ kHz$ | Per diode | 1 | A |
| I_{RSM} | Non repetitive peak reverse current | $t_p = 100\ \mu s$ | Per diode | 1 | A |
| T_{stg} | Storage temperature range | | | - 65 to + 150 | $^{\circ}C$ |
| T_j | Maximum junction temperature | | | 150 | |
| dV/dt | Critical rate of rise of reverse voltage | | | 10000 | V/ μs |

THERMAL RESISTANCES

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

When the diodes 1 and 2 are used simultaneously :
 $T_j - T_c(\text{diode } 1) = P(\text{diode } 1) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode } 2) \times R_{th(c)}$

ELECTRICAL STATIC CHARACTERISTICS (per diode)

| 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 :
 $P = 0.54 \times I_F(AV) + 0.013 \times I_F^2(RMS)$

PACKAGE MECHANICAL DATA

TO-220AB

| REF. | DIMENSIONS | | | |
|-------|-------------|-------|------------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 4.40 | 4.60 | 0.173 | 0.181 |
| C | 1.23 | 1.32 | 0.048 | 0.051 |
| D | 2.40 | 2.72 | 0.094 | 0.107 |
| E | 0.49 | 0.70 | 0.019 | 0.027 |
| F | 0.61 | 0.88 | 0.024 | 0.034 |
| F1 | 1.14 | 1.70 | 0.044 | 0.066 |
| F2 | 1.14 | 1.70 | 0.044 | 0.066 |
| G | 4.95 | 5.15 | 0.194 | 0.202 |
| G1 | 2.40 | 2.70 | 0.094 | 0.106 |
| H2 | 10 | 10.40 | 0.393 | 0.409 |
| L2 | 16.4 typ. | | 0.645 typ. | |
| L4 | 13 | 14 | 0.511 | 0.551 |
| L5 | 2.65 | 2.95 | 0.104 | 0.116 |
| L6 | 15.25 | 15.75 | 0.600 | 0.620 |
| L7 | 6.20 | 6.60 | 0.244 | 0.259 |
| L9 | 3.50 | 3.93 | 0.137 | 0.154 |
| M | 2.6 typ. | | 0.102 typ. | |
| Diam. | 3.75 | 3.85 | 0.147 | 0.151 |

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