HALOGEN

FREE



Vishay General Semiconductor

Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.36 \text{ V}$ at $I_F = 5 \text{ A}$





VF60100C PIN 1 O PIN 2

| PRIMARY CHARACTERISTICS | | | | |
|---|---------------------|--|--|--|
| I _{F(AV)} | 2 x 30 A | | | |
| V _{RRM} | 100 V | | | |
| I _{FSM} | 320 A | | | |
| V _F at I _F = 30 A | 0.66 V | | | |
| T _J max. | 150 °C | | | |
| Package | ITO-220AB | | | |
| Diode variation | Dual common cathode | | | |

FEATURES

• Trench MOS Schottky technology

Low forward voltage drop, low power losses

High efficiency operation

• Solder dip 275 °C max. 10 s, per JESD 22-B106

 Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

For use in high frequency converters, switching power supplies, freewheeling diodes, OR-ing diode, DC/DC converters and reverse battery protection.

MECHANICAL DATA

Case: ITO-220AB

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

| MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted) | | | | | |
|--|------------|-----------------------------------|-------------|------|--|
| PARAMETER | | SYMBOL | VF60100C | UNIT | |
| Maximum repetitive peak reverse voltage | | V _{RRM} | 100 | V | |
| Maximum average forward rectified current (fig. 1) | per device | I | 60 | ^ | |
| | per diode | I _{F(AV)} | 30 | A | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | | I _{FSM} | 320 | А | |
| Isolation voltage from terminal to heatsink t = 1 min | | V _{AC} | 1500 | V | |
| Voltage rate of change (rated V _R) | | dV/dt | 10 000 | V/µs | |
| Operating junction and storage temperature range | | T _J , T _{STG} | -40 to +150 | °C | |



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| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | |
|---|------------------------|-------------------------|-------------------------------|------|------|------|--|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT | |
| Instantaneous forward voltage per diode | I _F = 5 A | | V _F ⁽¹⁾ | 0.45 | - | . V | |
| | I _F = 10 A | | | 0.52 | - | | |
| | I _F = 15 A | T _A = 25 °C | | 0.58 | 0.63 | | |
| | I _F = 20 A | | | 0.63 | - | | |
| | I _F = 30 A | | | 0.73 | 0.79 | | |
| | I _F = 5 A | T _A = 125 °C | | 0.36 | - | | |
| | I _F = 10 A | | | 0.45 | - | | |
| | I _F = 15 A | | | 0.53 | 0.58 | | |
| | I _F = 20 A | | | 0.58 | - | | |
| | $I_F = 30 \text{ A}$ | | | 0.66 | 0.70 | | |
| Reverse current at rated V _R per diode | V _R = 80 V | T _A = 25 °C | I _R ⁽²⁾ | 24 | 500 | μΑ | |
| | | T _A = 125 °C | | 13 | 20 | mA | |
| | V _R = 100 V | T _A = 25 °C | | 65 | 1000 | μΑ | |
| | vH = 100 v | T _A = 125 °C | | 30 | - | mA | |

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | |
|---|------------|---------------|----------|--------|--|
| PARAMETER | | SYMBOL | VF60100C | UNIT | |
| Typical thermal resistance | per diode | $R_{	hetaJC}$ | 5.0 | °C/W | |
| | per device | | 3.5 | - C/VV | |

| ORDERING INFORMATION (Example) | | | | | | |
|--------------------------------|----------------|-----------------|--------------|---------------|---------------|--|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE | |
| ITO-220AB | VF60100C-M3/4W | 1.76 | 4W | 50/tube | Tube | |

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

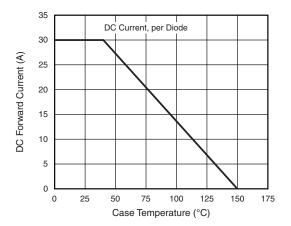


Fig. 1 - Maximum Forward Current Derating Curve

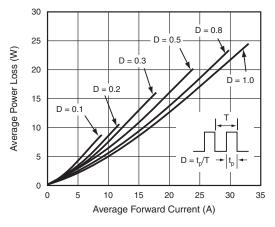


Fig. 2 - Forward Power Loss Characteristics Per Diode

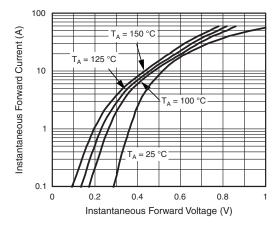


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

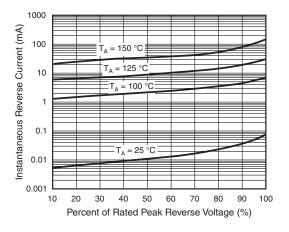


Fig. 4 - Typical Reverse Characteristics Per Diode

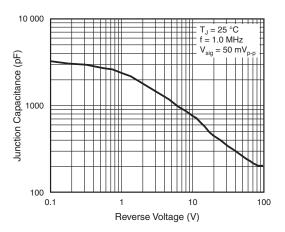
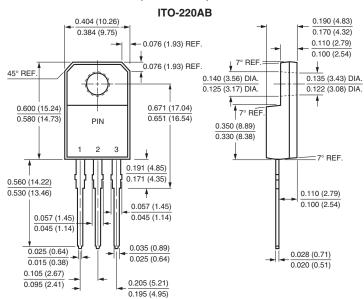


Fig. 5 - Typical Junction Capacitance Per Diode



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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