

# 20A, 50V - 600V Isolated Glass Passivated Super Fast Rectifiers

# FEATURES

- High efficiency, low VF
- High current capability
- High surge current capability
- Low power loss
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

# 23

ITO-220AB

PIN 2

CASE

PIN 1 O-

PIN 3O-





MECHANICAL DATA

# Case: ITO-220AB

Molding compound, UL flammability classification rating 94V-0 Part no. with suffix "H" means AEC-Q101 qualified Packing code with suffix "G" means green compound (halogen-free) **Terminal:** Matte tin plated leads, solderable per JESD22-B102 Meet JESD 201 class 2 whisker test **Polarity:** As marked **Mounting torque:** 0.56 Nm max. **Weight:** 1.82 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                       |               |      |      |      |      |      |      |      |      |
|--|-----------------------|---------------|------|------|------|------|------|------|------|------|
|  |                       | SFF           | SFF  | SFF  | SFF  | SFF  | SFF  | SFF  | SFF  |      |
| PARAMETER  | SYMBOL                | 2001          | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | UNIT |
|  |                       | G             | G    | G    | G    | G    | G    | G    | G    |      |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>      | 50            | 100  | 150  | 200  | 300  | 400  | 500  | 600  | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>      | 35            | 70   | 105  | 140  | 210  | 280  | 350  | 420  | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>       | 50            | 100  | 150  | 200  | 300  | 400  | 500  | 600  | V    |
| Maximum average forward rectified current  | I <sub>F(AV)</sub>    |               |      |      | 2    | 0    |      |      | А    |      |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load          | I <sub>FSM</sub>      | 150 A         |      |      |      |      | A    |      |      |      |
| Maximum instantaneous forward voltage (Note 1)<br>@ 10 A                                     | V <sub>F</sub>        | 0.975 1.3 1.7 |      |      | .7   | V    |      |      |      |      |
| Maximum reverse current @ rated $V_R$ T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C          | I <sub>R</sub>        | 10<br>400     |      |      |      |      | μA   |      |      |      |
| Maximum reverse recovery time (Note 2)   | t <sub>rr</sub>       | 35            |      |      |      |      | ns   |      |      |      |
| Typical junction capacitance (Note 3)  | CJ                    | 90            |      |      |      | pF   |      |      |      |      |
| Typical thermal resistance   | $R_{	extsf{	heta}JC}$ | 2.5           |      |      |      |      |      | °C/W |      |      |
| Operating junction temperature range   | TJ                    |               |      |      |      | °C   |      |      |      |      |
| Storage temperature range  | T <sub>STG</sub>      | - 55 to +150  |      |      |      |      | °C   |      |      |      |

Note 1: Pulse test with PW=300µs, 1% duty cycle

Note 2: Test conditions:  $I_F$ =0.5A,  $I_R$ =1.0A,  $I_{RR}$ =0.25A.

Note 3: Measured at 1 MHz and applied reverse voltage of 4.0 V DC.



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#### ORDERING INFORMATION

| PART NO.             | PART NO.<br>SUFFIX | PACKING<br>CODE | PACKING CODE<br>SUFFIX <sup>(*)</sup> | PACKAGE   | PACKING   |  |  |
|----------------------|--------------------|-----------------|---------------------------------------|-----------|-----------|--|--|
| SFF200xG<br>(Note 1) | н                  | C0              | G                                     | ITO-220AB | 50 / Tube |  |  |

Note 1: "x" defines voltage from 50V (SFF2001G) to 600V (SFF2008G)

\*: Optional available

| EXAMPLE      |          |                    |              |                        |                                      |  |  |  |
|--------------|----------|--------------------|--------------|------------------------|--------------------------------------|--|--|--|
| EXAMPLE P/N  | PART NO. | PART NO.<br>SUFFIX | PACKING CODE | PACKING CODE<br>SUFFIX | DESCRIPTION                          |  |  |  |
| SFF2008GHC0G | SFF2008G | Н                  | CO           | G                      | AEC-Q101 qualified<br>Green compound |  |  |  |

100

10

1

0.1

0

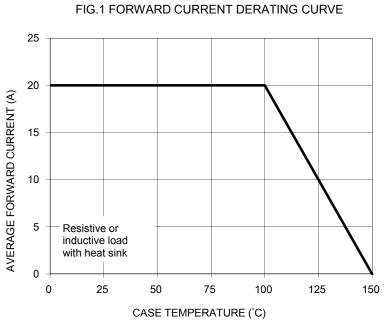
20

40

INSTANTANEOUS REVERSE CURRENT(µA)

# **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub>=25°C unless otherwise noted)



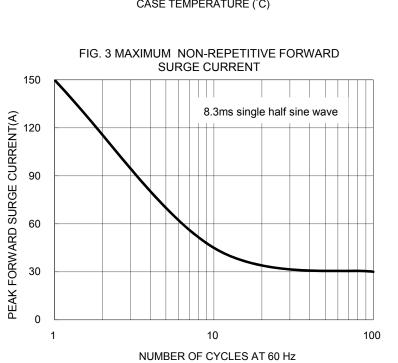


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

80

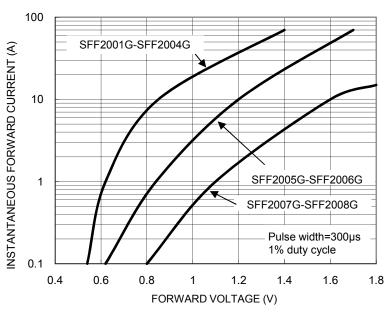
100

120

140

T<sub>J</sub>=25°C

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)





T<sub>J</sub>=100°C

TJ=75°C

60

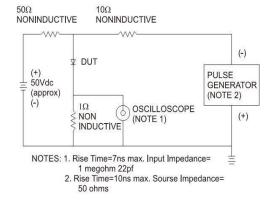


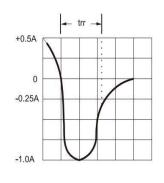
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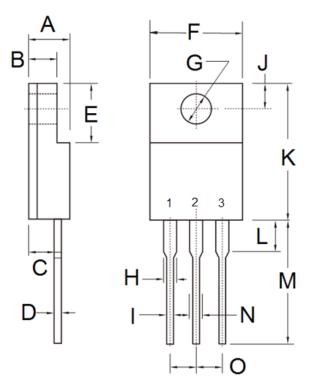
FIG. 5 TYPICAL JUNCTION CAPACITANCE

#### FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





# PACKAGE OUTLINE DIMENSIONS ITO-220AB



P/N

YWW

G

F

| DIM.   | Unit  | (mm)  | Unit (inch) |       |  |  |
|--------|-------|-------|-------------|-------|--|--|
| Dilvi. | Min   | Мах   | Min         | Max   |  |  |
| А      | 4.30  | 4.70  | 0.169       | 0.185 |  |  |
| В      | 2.50  | 3.16  | 0.098       | 0.124 |  |  |
| С      | 2.30  | 2.96  | 0.091       | 0.117 |  |  |
| D      | 0.46  | 0.76  | 0.018       | 0.030 |  |  |
| E      | 6.30  | 6.90  | 0.248       | 0.272 |  |  |
| F      | 9.60  | 10.30 | 0.378       | 0.406 |  |  |
| G      | 3.00  | 3.40  | 0.118       | 0.134 |  |  |
| Н      | 0.95  | 1.45  | 0.037       | 0.057 |  |  |
| I      | 0.50  | 0.90  | 0.020       | 0.035 |  |  |
| J      | 2.40  | 3.20  | 0.094       | 0.126 |  |  |
| К      | 14.80 | 15.50 | 0.583       | 0.610 |  |  |
| L      | -     | 4.10  | -           | 0.161 |  |  |
| М      | 12.60 | 13.80 | 0.496       | 0.543 |  |  |
| Ν      | -     | 1.80  | -           | 0.071 |  |  |
| 0      | 2.41  | 2.67  | 0.095       | 0.105 |  |  |

### MARKING DIAGRAM



- = Specific Device Code
- = Green Compound
- = Date Code
- = Factory Code



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