

10A, 50V - 600V Surface Mount Super Fast Rectifiers

FEATURES

- Low forward voltage drop
- Ideal for automated placement
- High current capability
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



TO-263AB (D²PAK)



MECHANICAL DATA

Case: TO-263AB (D²PAK)

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

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

Weight: 1.37 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | | | | | | |
|---|--------------------|--------------|------|------|------|------|------|------|------|------|
| PARAMETER | SYMBOL | SFS | SFS | SFS | SFS | SFS | SFS | SFS | SFS | UNIT |
| | | 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | |
| | | G | G | G | G | G | G | G | G | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum RMS voltage | V _{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 350 | 420 | V |
| Maximum DC blocking voltage | V _{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum average forward rectified current | I _{F(AV)} | 10 | | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 125 | | | | | | | | A |
| Maximum instantaneous forward voltage (Note 1) I _F = 5 A | V _F | 0.975 | | | 1.3 | | 1.7 | | | V |
| Maximum reverse current @ rated V _R T _J =25°C T _J =125°C | I _R | 1 200 | | | | | | | | μA |
| Maximum reverse recovery time (Note 2) | t _{rr} | 35 | | | | | | | | ns |
| Typical junction capacitance (Note 3) | C _J | 70 | | | | 50 | | | | pF |
| Typical thermal resistance | R _{θJC} | 2 | | | | | | | | °C/W |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | | °C |
| Storage temperature range | T _{STG} | - 55 to +150 | | | | | | | | °C |

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

Note 2: Reverse Recovery 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 4.0V D.C.

| ORDERING INFORMATION | | | | | |
|----------------------|-----------------|--------------|-------------------------|--------------------|------------------------|
| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
| SFS100xG (Note 1) | H | RN | G | D ² PAK | 800 / 13" Paper reel |
| | | MN | | | 800 / 13" Plastic reel |

Note 1: "x" defines voltage from 50V (SFS1001G) to 600V (SFS1008G)

*: Optional available

| EXAMPLE | | | | | |
|---------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| SFS1008GHRNG | SFS1008G | H | RN | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE



FIG. 2 TYPICAL REVERSE CHARACTERISTICS



FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



FIG. 4 TYPICAL FORWARD CHARACTERISTICS

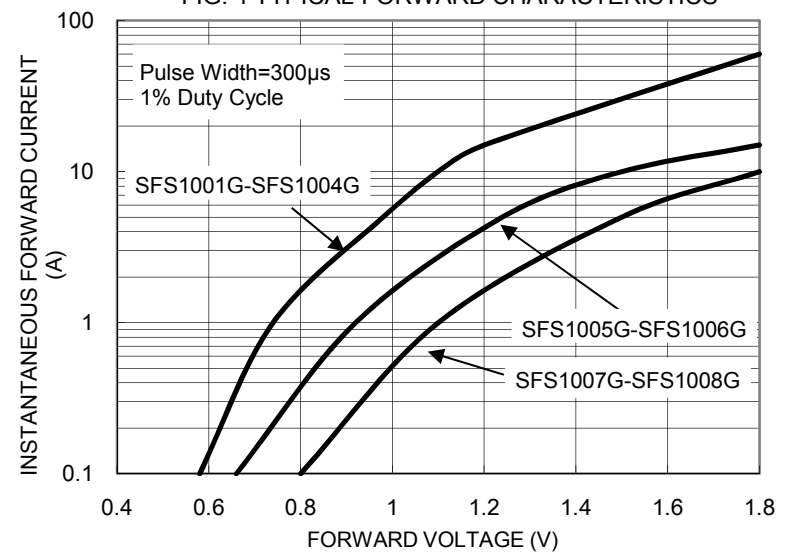




FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



PACKAGE OUTLINE DIMENSIONS

TO-263AB (D²PAK)



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | - | 10.5 | - | 0.413 |
| B | 14.60 | 15.88 | 0.575 | 0.625 |
| C | 2.41 | 2.67 | 0.095 | 0.105 |
| D | 0.68 | 0.94 | 0.027 | 0.037 |
| E | 2.29 | 2.79 | 0.090 | 0.110 |
| F | 4.44 | 4.70 | 0.175 | 0.185 |
| G | 1.14 | 1.40 | 0.045 | 0.055 |
| H | 1.14 | 1.40 | 0.045 | 0.055 |
| I | 8.25 | 9.25 | 0.325 | 0.364 |
| J | 0.36 | 0.53 | 0.014 | 0.021 |
| K | 2.03 | 2.79 | 0.080 | 0.110 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 10.8 | 0.425 |
| B | 8.3 | 0.327 |
| C | 1.1 | 0.043 |
| D | 3.5 | 0.138 |
| E | 16.9 | 0.665 |
| F | 9.5 | 0.374 |
| G | 2.5 | 0.098 |

MARKING DIAGRAM



- P/N = Specific Device Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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