



HS1A THRU HS1M

Surface Mount High Efficient Rectifier

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip function
- High forward surge capability
- Super fast reverse recovery time
- Meets MSL level 1 per J-STD-020 LF maximum peak of 260 °C

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

Mechanical Data

- Package: DO-214AC (SMA)
- Molding compound meets UL - 4 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Cathode line denotes the cathode end

Maximum Ratings (Ta 125 °C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | HS1A | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|---|--------|------|------------|------|------|------|------|------|------|------|
| Maximum Repetitive Peak Reverse Voltage | VRRM | V | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 |
| Maximum RMS Voltage | VRMS | V | 35 | +0 | 140 | 210 | 280 | 420 | 560 | +00 |
| Maximum DC blocking Voltage | VDC | V | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 |
| Average rectified output current 4 60Hz sine wave, Resistance load, TL (FIG.1) | IO | A | 1.0 | | | | | | | |
| Forward Surge Current (Non-repetitive) 4 60Hz Half-sine wave, 1 cycle, Ta 125 °C | IFSM | A | 30 | | | | | | | |
| Forward Surge Current (Non-repetitive) 4 1ms square wave, 1 cycle, Ta 125 °C | | | 60 | | | | | | | |
| Current squared time 4 1ms @ 8.3ms, Ta 125 °C | I²t | A²s | 3. + 35 | | | | | | | |
| Storage temperature | Tstg | | -55 to 150 | | | | | | | |
| Junction temperature | Tj | | -55 to 150 | | | | | | | |

Electrical Characteristics (Ta 125 °C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | HS1A | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|---|--------|------|--------------------------------|------|------|------|------|------|------|------|------|
| Maximum instantaneous forward voltage | VF | V | IFM 1.0A | 1.0 | | | 1.3 | | 1. + | | |
| Maximum reverse recovery time | trr | ns | IF 1.05A, IRR 1.0A, IRR 1.025A | 50 | | | | | + 5 | | |
| Maximum DC reverse current at rated DC blocking voltage | IR | A | Ta 125 °C | 5 | | | | 100 | | | |

(# %)



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Thermal Characteristics T_a 1 25 Unless otherwise specified

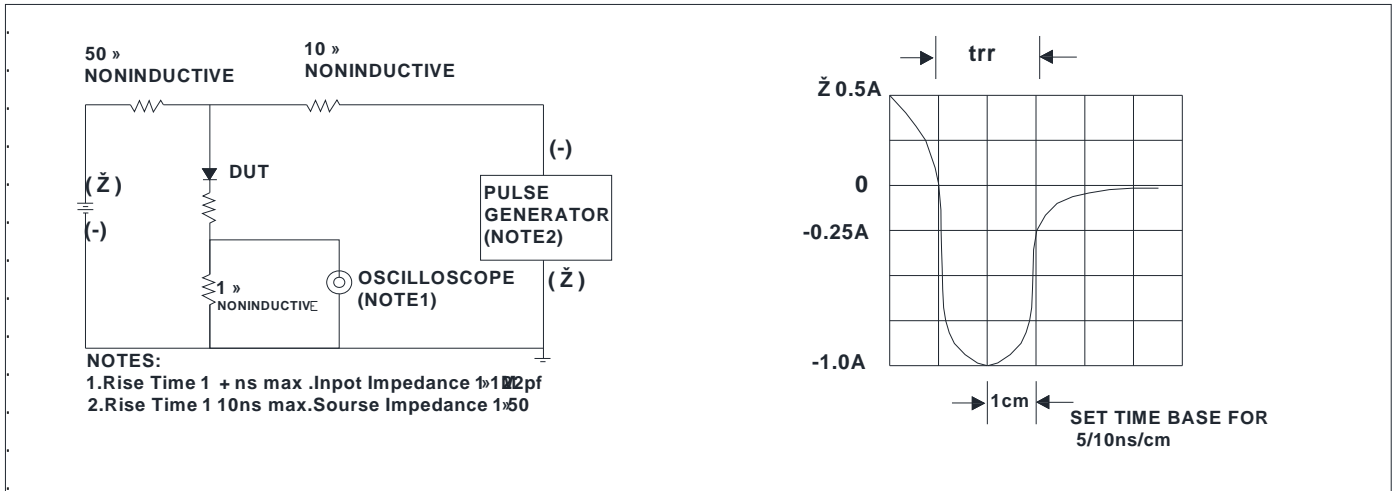
| PARAMETER | SYMBOL | UNIT | HS1A | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|-----------|--------|------|------|------|------|------|------|------|------|------|
| | R | J-Ah | | - | J-A | | | | | |

Typical Thermal resistance



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FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

| PREFERRED P/N | PACKAGE CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| HS1A-HS1M | F1 | Approximate 0.05 - | 5000 | / | 80000 | 13 1 reel |
| HS1A-HS1M | F2 | Approximate 0.05 - | + 500 | / | 120000 | 13 1 reel |
| HS1A-HS1M | F3 | Approximate 0.05 - | + 500 | / | 60000 | 13 1 reel |
| HS1A-HS1M | F4 | Approximate 0.05 - | 1800 | 14400 | 5 + 600 | + 1 reel |
| HS1A-HS1M | F5 | Approximate 0.05 - | 2000 | 16000 | 64000 | + 1 reel |
| HS1A-HS1M | F6 | Approximate 0.05 - | 5000 | / | 100000 | 13 1 reel |

Outline Dimensions

| DO-214AC(SMA) | | |
|---------------|--------|--------|
| Dim | Min | Max |
| A | 1.25 | 1.58 |
| B | 2.40 | 2.83 |
| C | 4.00 | 4. + 5 |
| D | 1. - 0 | 2.30 |
| E | 4. - 3 | 5.28 |
| F | 0. + 6 | 1.41 |
| G | 0.05 | 0.20 |
| H | 0.15 | 0.31 |
| I | 1. + 0 | 2.10 |

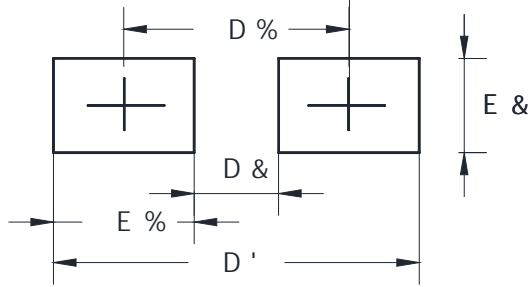
Dimensions in millio ur u

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Suggested Pad Layout



| DO-214AC(SMA) | |
|---------------|---------------|
| Dim | Millimeters |
| P1 | 4.00 |
| P2 | 1.50 |
| P3 | 6.50 |
| Q1 | 0.125 ± 0.005 |
| E & | 0.125 ± 0.005 |



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Disclaimer

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