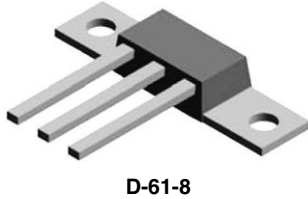
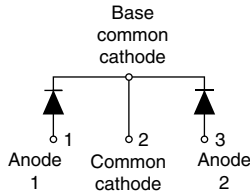


Schottky Rectifier New Generation 3 D-61 Package, 2 x 40 A

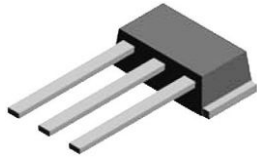
VS-85CNQ015APbF



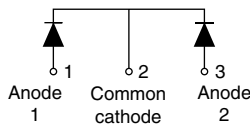
D-61-8



VS-85CNQ015ASMPbF



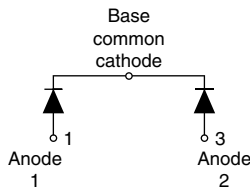
D-61-8-SM



VS-85CNQ015ASLPbF



D-61-8-SL



FEATURES

- 125 °C T_J operation ($V_R < 5$ V)
- Center tap module
- Optimized for OR-ing applications
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- New fully transfer-mold low profile, small footprint, high current package
- Through-hole versions are currently available for use in lead (Pb)-free applications ("PbF" suffix)
- Compliant to RoHS directive 2002/95/EC
- Designed and qualified for industrial level



Available
RoHS*
COMPLIANT

DESCRIPTION

The center tap Schottky rectifier module has been optimized for ultra low forward voltage drop specifically for the OR-ing of parallel power supplies. The proprietary barrier technology allows for reliable operation up to 125 °C junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

PRODUCT SUMMARY

| | |
|-------------|-------------------|
| $I_{F(AV)}$ | 2 x 40 A |
| V_R | 15 V |
| I_{RM} | 1000 mA at 100 °C |

MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL | CHARACTERISTICS | VALUES | UNITS |
|-------------|---------------------------------|-------------|-------|
| $I_{F(AV)}$ | Rectangular waveform | 80 | A |
| V_{RRM} | | 15 | V |
| I_{FSM} | $t_p = 5 \mu s$ sine | 5200 | A |
| V_F | 40 Apk, $T_J = 75$ °C (per leg) | 0.32 | V |
| T_J | Range | - 55 to 125 | °C |

VOLTAGE RATINGS

| PARAMETER | SYMBOL | VS-85CNQ015APbF | UNITS |
|--------------------------------------|-----------|-----------------|-------|
| Maximum DC reverse voltage | V_R | 15 | V |
| Maximum working peak reverse voltage | V_{RWM} | 25 | |

* Pb containing terminations are not RoHS compliant, exemptions may apply

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|--|-------------|---|---|--------|-------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
| Maximum average forward current See fig. 5 | $I_{F(AV)}$ | 50 % duty cycle at $T_C = 78\text{ }^\circ\text{C}$, rectangular waveform | | 80 | A |
| Maximum peak one cycle non-repetitive surge current per leg See fig. 7 | I_{FSM} | 5 μs sine or 3 μs rect. pulse | Following any rated load condition and with rated V_{RRM} applied | 5200 | |
| | | 10 ms sine or 6 ms rect. pulse | | 850 | |
| Non-repetitive avalanche energy per leg | E_{AS} | $T_J = 25\text{ }^\circ\text{C}$, $I_{AS} = 2\text{ A}$, $L = 4.5\text{ mH}$ | | 9 | mJ |
| Repetitive avalanche current per leg | I_{AR} | Current decaying linearly to zero in 1 μs Frequency limited by T_J maximum $V_A = 3 \times V_R$ typical | | 2 | A |

| ELECTRICAL SPECIFICATIONS | | | | | |
|---|----------------|---|----------------------------------|-----------------------------------|------------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
| Maximum forward voltage drop per leg See fig. 1 | $V_{FM}^{(1)}$ | 40 A | $T_J = 25\text{ }^\circ\text{C}$ | 0.36 | V |
| | | 80 A | | 0.45 | |
| | | 40 A | $T_J = 75\text{ }^\circ\text{C}$ | 0.32 | |
| | | 80 A | | 0.42 | |
| Maximum reverse leakage current per leg See fig. 2 | $I_{RM}^{(1)}$ | $T_J = 100\text{ }^\circ\text{C}$ | $V_R = 12\text{ V}$ | 890 | mA |
| | | | $V_R = 5\text{ V}$ | 540 | |
| | | $T_J = 25\text{ }^\circ\text{C}$ | $V_R = \text{Rated } V_R$ | 20 | |
| | | | | $T_J = 100\text{ }^\circ\text{C}$ | |
| Maximum junction capacitance per leg | C_T | $V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^\circ\text{C}$ | | 3600 | pF |
| Typical series inductance per leg | L_S | Measured lead to lead 5 mm from package body | | 5.5 | nH |
| Maximum voltage rate of change | dV/dt | Rated V_R | | 10 000 | V/ μs |

Note

(1) Pulse width < 300 μs , duty cycle < 2 %

| THERMAL - MECHANICAL SPECIFICATIONS | | | | | |
|---|----------------|--|--|-------------|--------------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
| Maximum junction and storage temperature range | T_J, T_{Stg} | | | - 55 to 125 | $^\circ\text{C}$ |
| Maximum thermal resistance, junction to case | R_{thJC} | DC operation (see fig. 4) | | 0.85 | $^\circ\text{C/W}$ |
| | | DC operation | | 0.42 | |
| Typical thermal resistance, case to heatsink | R_{thCS} | Mounting surface, smooth and greased Device flatness < 5 mils | | 0.30 | |
| Approximate weight | | | | 7.8 | g |
| | | | | 0.28 | oz. |
| Mounting torque | minimum | | | 40 (35) | kgf · cm |
| | maximum | | | 58 (50) | (lbf · in) |
| Marking device | | Case style D-61 | | 85CNQ015A | |
| | | Case style D-61-8-SM | | 85CNQ015ASM | |
| | | Case style D-61-8-SL | | 85CNQ015ASL | |



VS-85CNQ015A PbF Series

Schottky Rectifier
New Generation 3 D-61 Package, 2 x 40 A

Vishay High Power Products

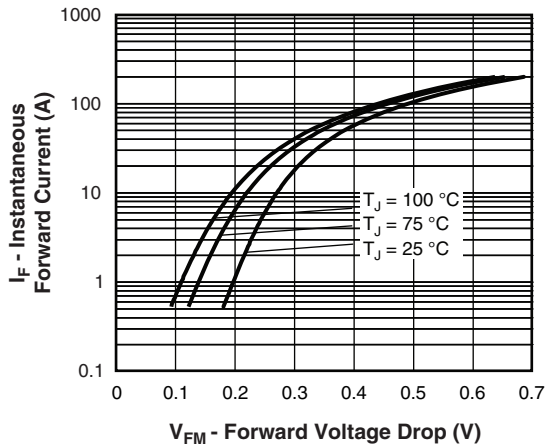


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

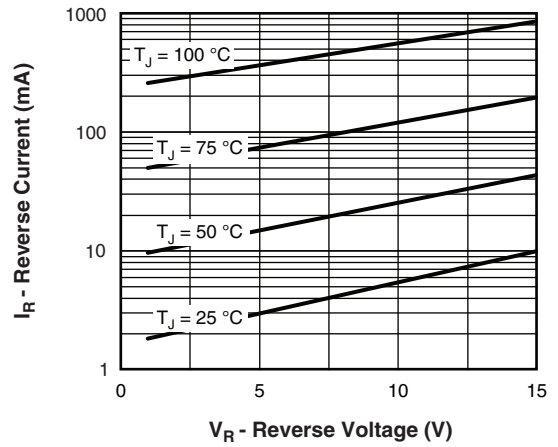


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

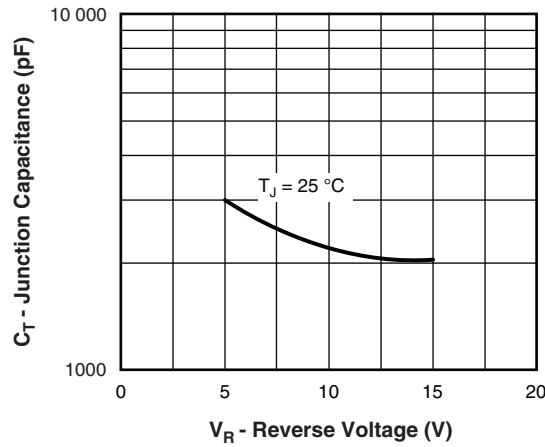


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

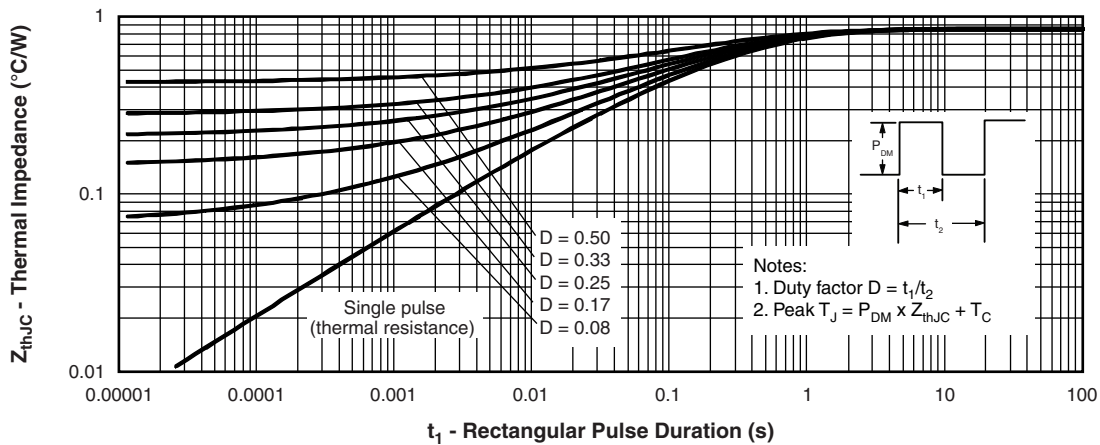


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

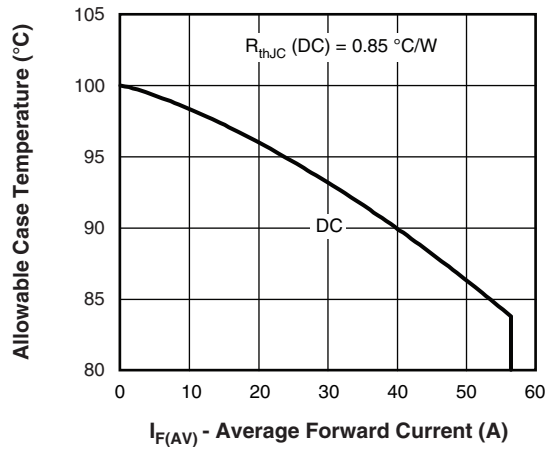


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

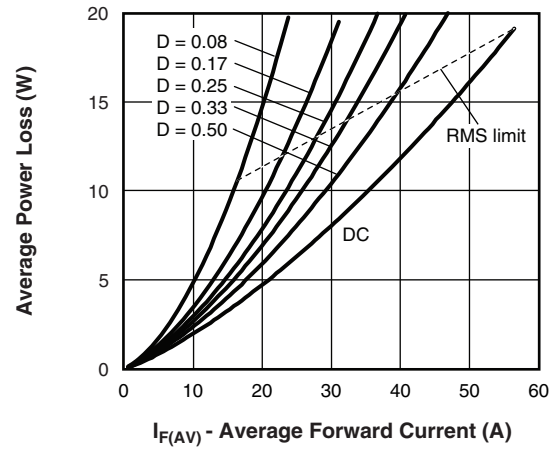


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

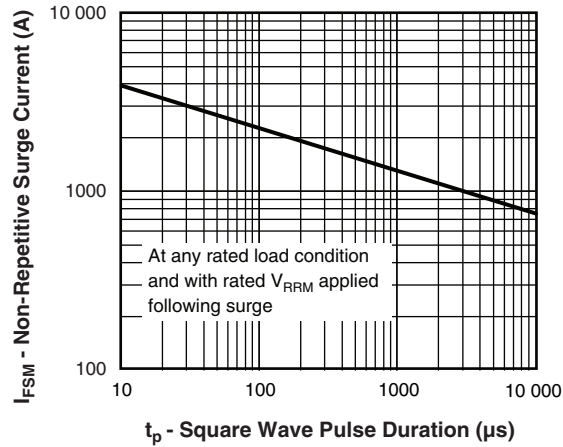


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

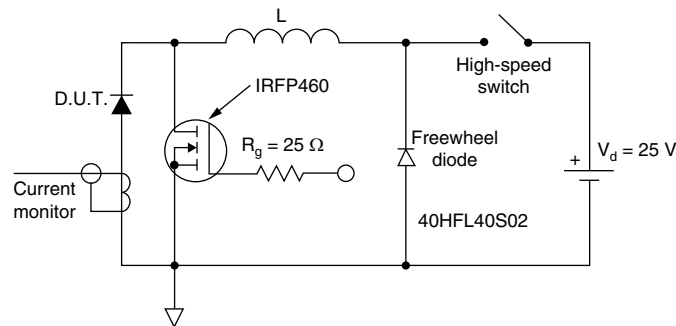


Fig. 8 - Unclamped Inductive Test Circuit



VS-85CNQ015A PbF Series

Schottky Rectifier
New Generation 3 D-61 Package, 2 x 40 A

Vishay High Power Products

ORDERING INFORMATION TABLE

| | | | | | | | | |
|-------------|------------|-----------|----------|----------|----------|------------|----------|------------|
| Device code | VS- | 85 | C | N | Q | 015 | A | PbF |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |

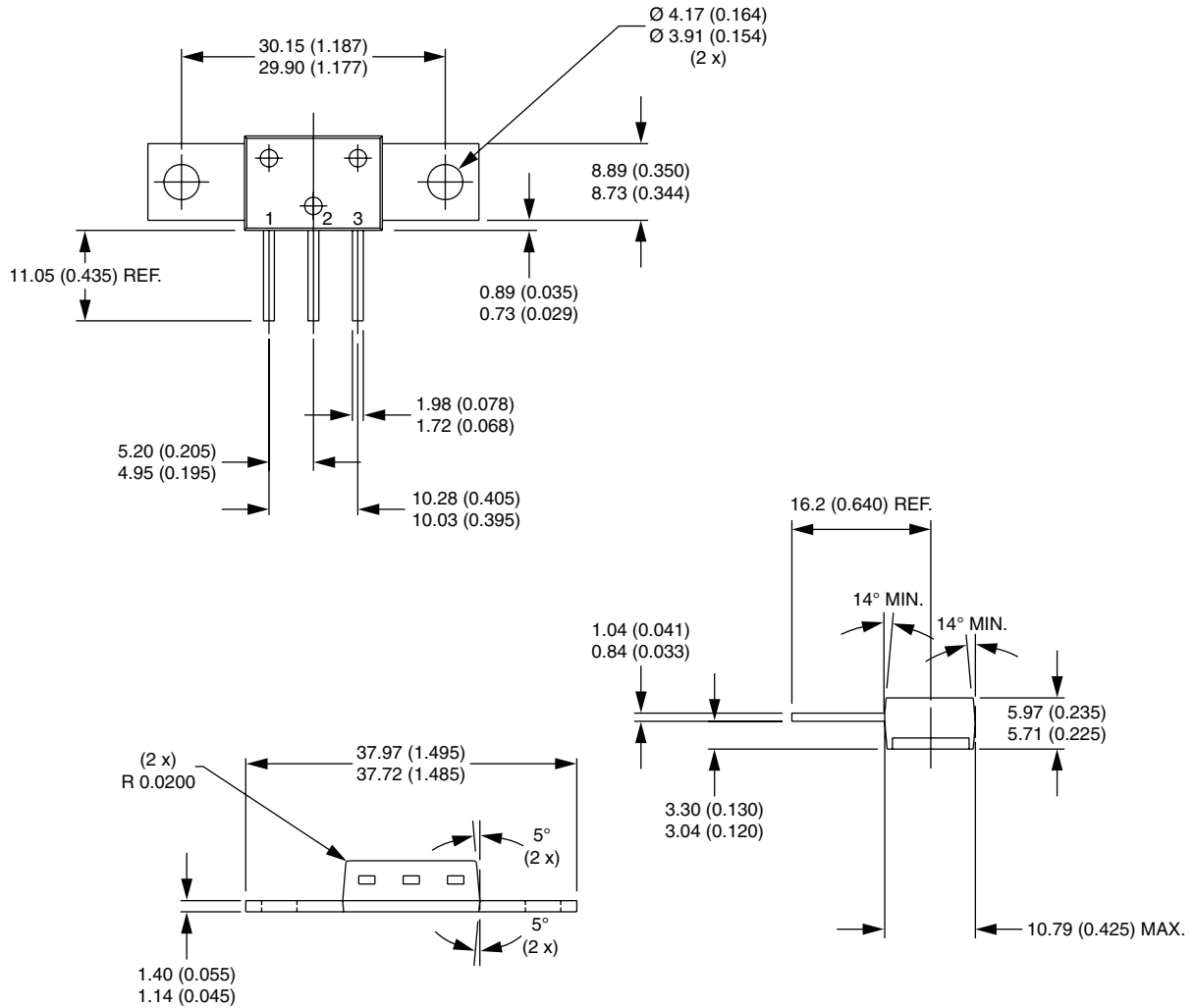
- 1** - HPP product suffix
- 2** - Current rating (80 A)
- 3** - Circuit configuration:
C = Common cathode
- 4** - Package:
N = D-61
- 5** - Schottky "Q" series
- 6** - Voltage ratings (015 = 15 V)
- 7** - Package style:
 - A = D-61-8
 - ASM = D-61-8-SM
 - ASL = D-61-8-SL
- 8** -
 - None = Standard production
 - PbF = Lead (Pb)-free

Standard pack quantity: A = 10 pieces; ASM/ASL = 20 pieces

| LINKS TO RELATED DOCUMENTS | |
|----------------------------|--|
| Dimensions | www.vishay.com/doc?95354 |
| Part marking information | www.vishay.com/doc?95356 |

D-61-8, D-61-8-SM, D-61-8-SL

DIMENSIONS FOR D-61-8 in millimeters (inches)



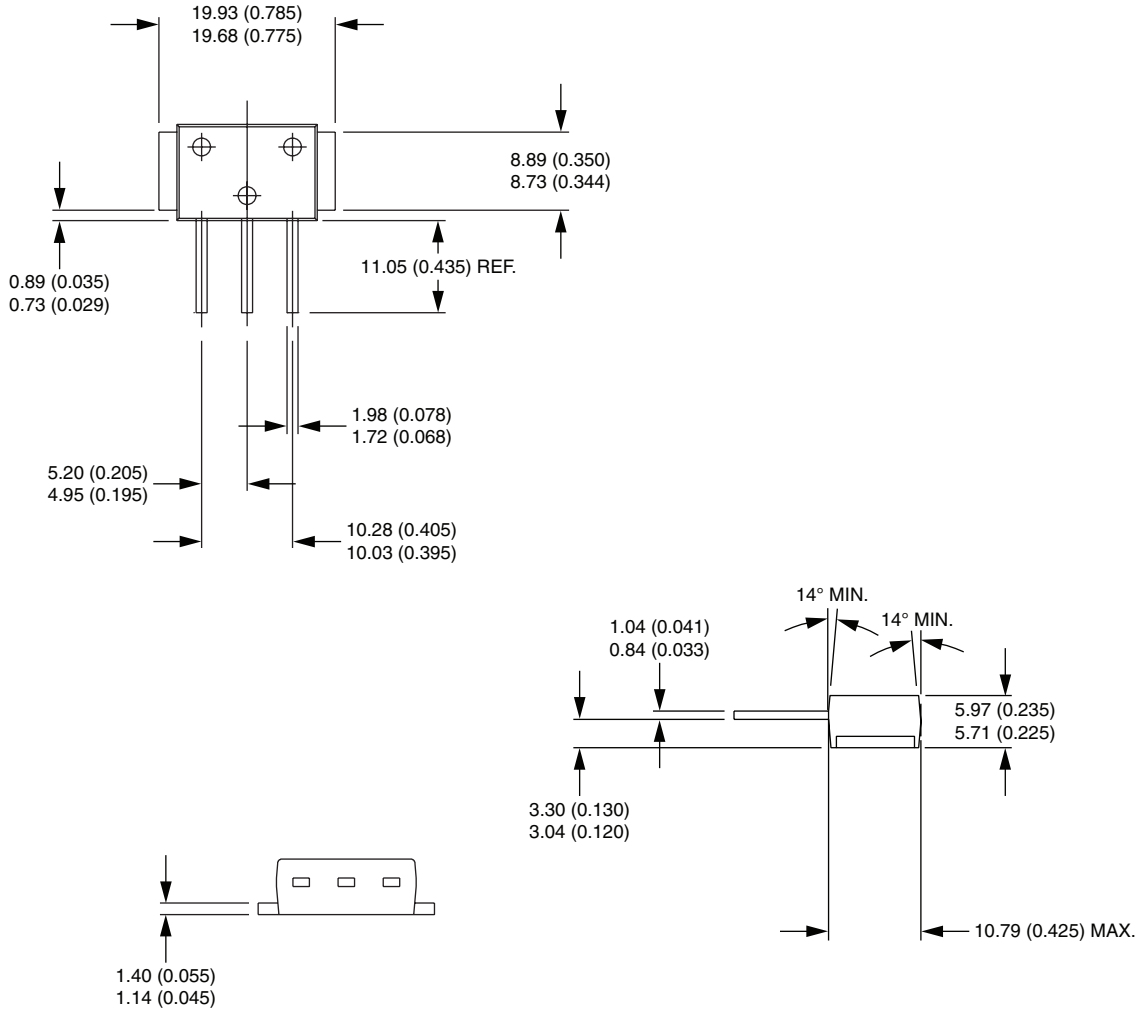
Outline Dimensions

Vishay High Power Products

D-61-8, D-61-8-SM,
D-61-8-SL

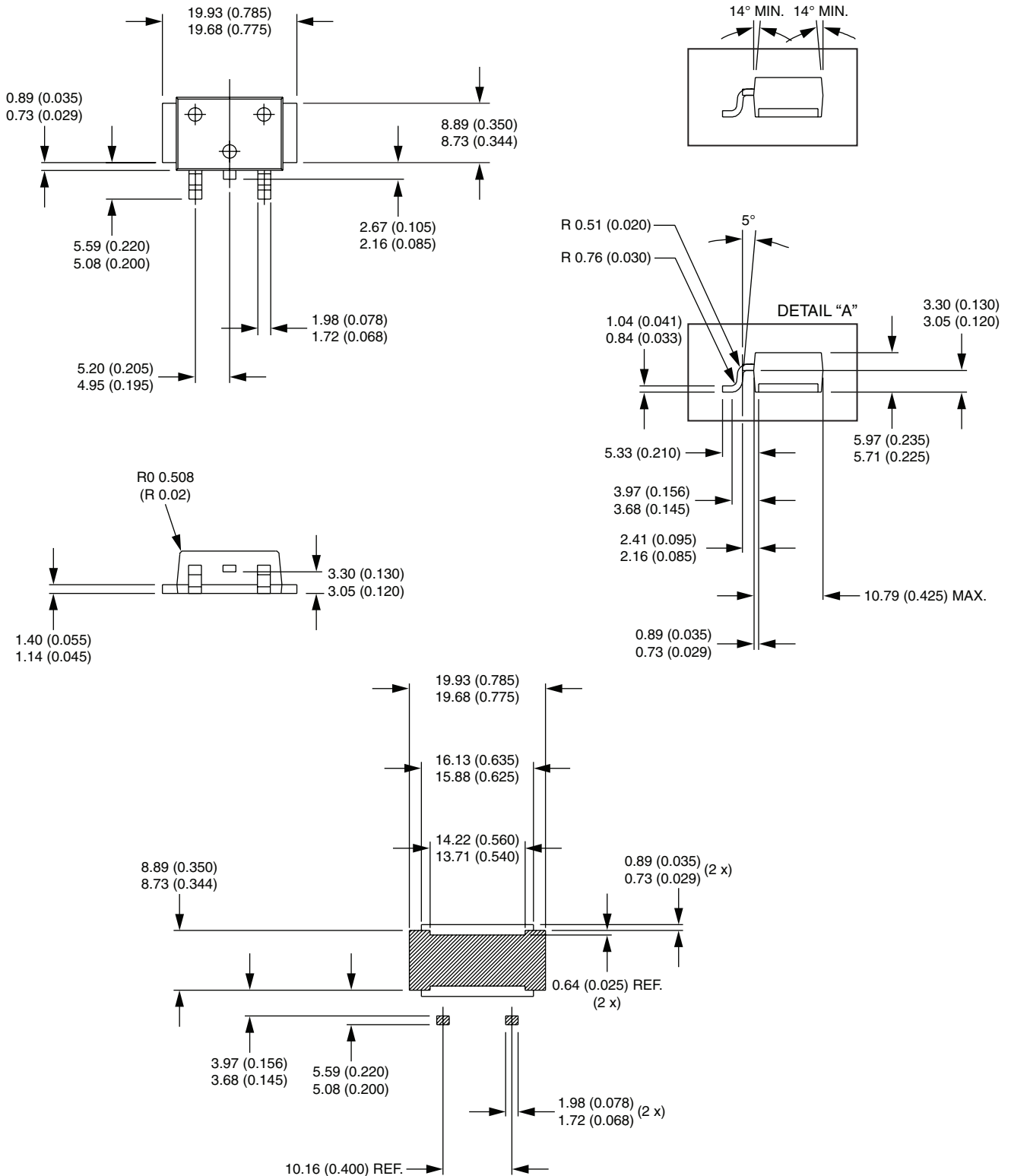


DIMENSIONS FOR D-61-8-SM in millimeters (inches)





DIMENSIONS FOR D 61-8-SL in millimeters (inches)





Disclaimer

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