

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: VS-113CNQ100ASLPBF
Manufacturer: Vishay General Semiconductor - Diodes Division
Package: Tube
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division-vs-113cnq100aslpbf.html>

Request a Quote:

[Submit RFQ for this part](#)



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Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

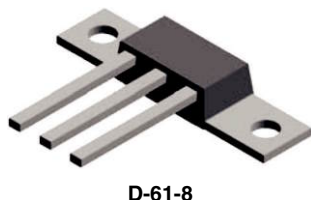
Note:

This PDF includes an ANTREX product reference cover page.

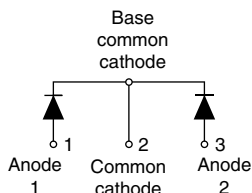
The original manufacturer datasheet follows from the next page.

Schottky Rectifier New Generation 3 D-61 Package, 2 x 55 A

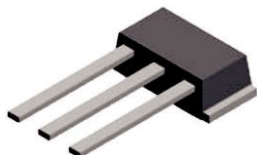
VS-113CNQ100APbF



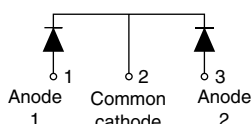
D-61-8



VS-113CNQ100ASMPbF



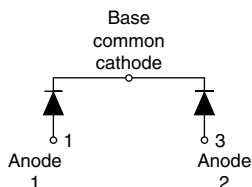
D-61-8-SM



VS-113CNQ100ASLPbF



D-61-8-SL



FEATURES

- 175 °C T_J operation
- Center tap module
- Low forward voltage drop
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- New fully transfer-mold low profile, small footprint, high current package
- Compliant to RoHS directive 2002/95/EC
- Designed and qualified for industrial level



Available
RoHS*
COMPLIANT

DESCRIPTION

The center tap Schottky rectifier module series has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 175 °C junction temperature. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

PRODUCT SUMMARY

$I_{F(AV)}$	2 x 55 A
V_R	100 V

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	110	A
V_{RRM}		100	V
I_{FSM}	$t_p = 5 \mu s$ sine	7000	A
V_F	55 Apk, $T_J = 125^\circ C$ (per leg)	0.67	V
T_J	Range	- 55 to 175	°C

VOLTAGE RATINGS

PARAMETER	SYMBOL	VS-113CNQ100APbF	UNITS
Maximum DC reverse voltage	V_R	100	V
Maximum working peak reverse voltage	V_{RWM}		

* 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 $T_C = 150^\circ\text{C}$, rectangular waveform	55 110	A
Maximum peak one cycle non-repetitive surge current per leg See fig. 7	I_{FSM}	5 μs sine or 3 μs rect. pulse 10 ms sine or 6 ms rect. pulse	7000 720	A
Non-repetitive avalanche energy per leg	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 1\text{ A}$, $L = 30\text{ mH}$	15	mJ
Repetitive avalanche current per leg	I_{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T_J maximum $V_A = 1.5 \times V_R$ typical	1	A

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	$V_{FM}^{(1)}$	55 A 110 A 55 A 110 A	0.81 1.00 0.66 0.79	V
Maximum reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	1.0 32	mA
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz), 25°C	1960	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 175	$^\circ\text{C}$
Maximum thermal resistance, junction to case per leg	R_{thJC}	DC operation See fig. 4	0.5	$^\circ\text{C/W}$
Maximum thermal resistance, junction to case per package		DC operation	0.25	
Typical thermal resistance, case to heatsink (D-61-8 only)	R_{thCS}	Mounting surface, smooth and greased Device flatness < 5 mils	0.30	
Approximate weight			7.8 0.28	g oz.
Mounting torque (D-61-8 only)	minimum maximum	Recommended hardware 3M stainless screw	12 (10) 24 (20)	kgf · cm (lbf · in)
Marking device		Case style D-61 Case style D-61-8-SM Case style D-61-8-SL	113CNQ100A 113CNQ100ASM 113CNQ100ASL	



VS-113CNQ100A PbF Series

Schottky Rectifier
New Generation 3 D-61 Package, 2 x 55 A

Vishay High Power Products

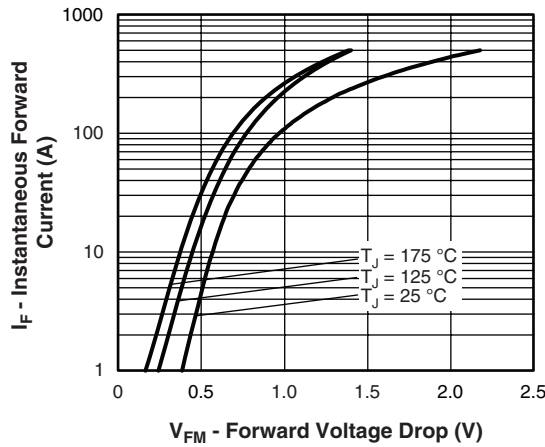


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

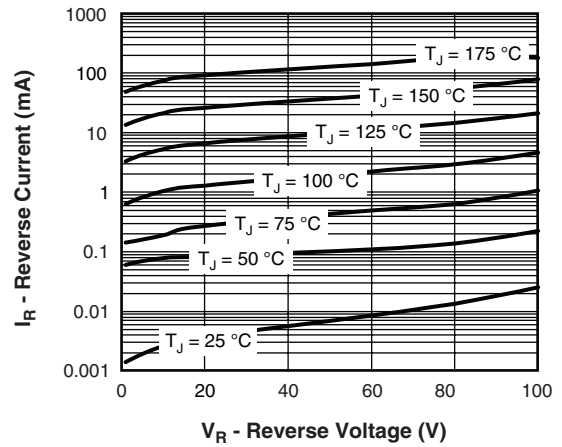


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

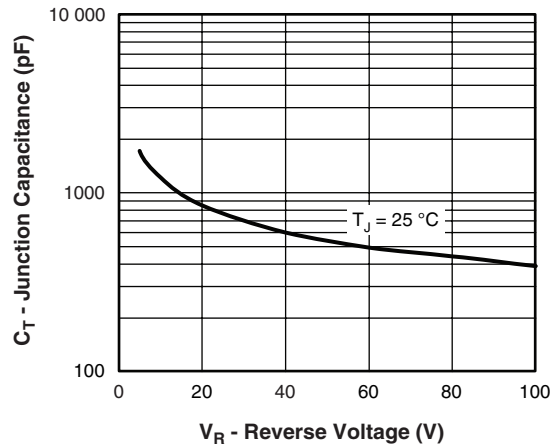


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

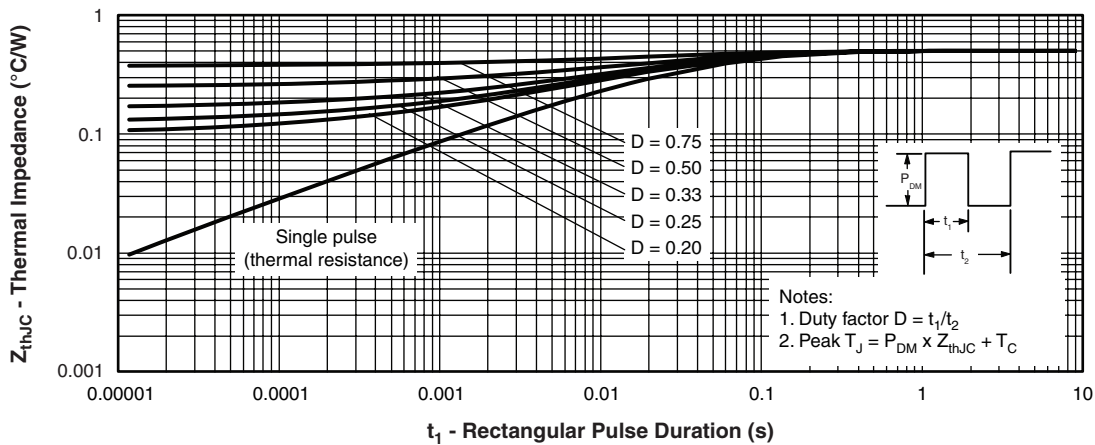


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

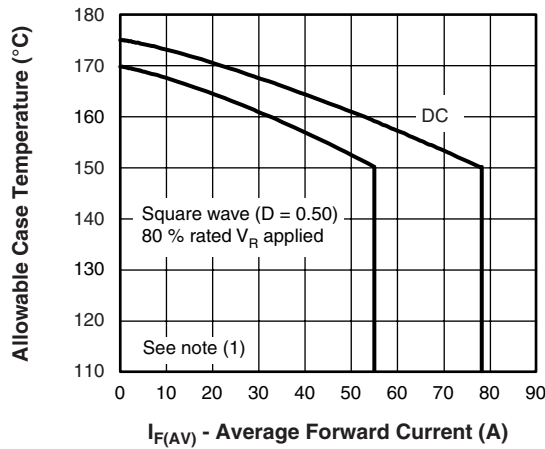


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

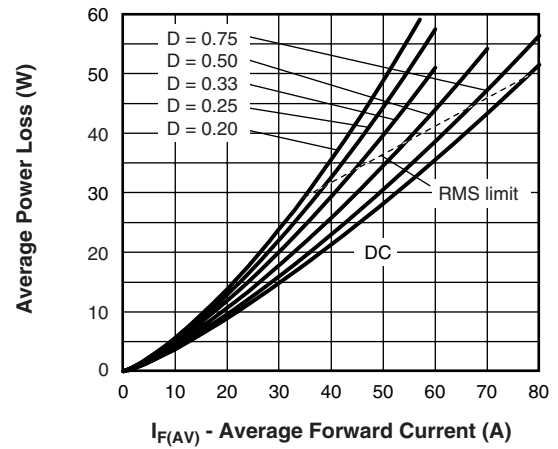


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

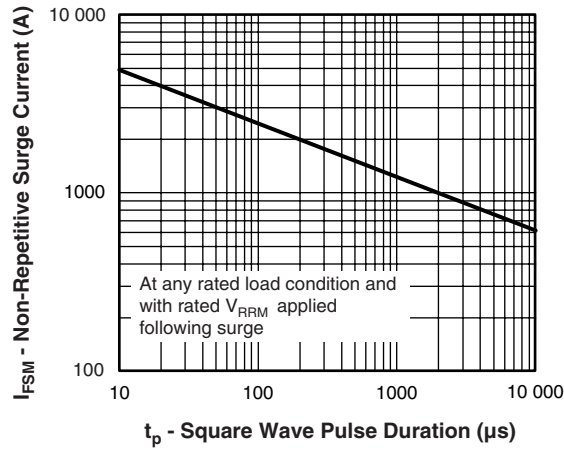


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

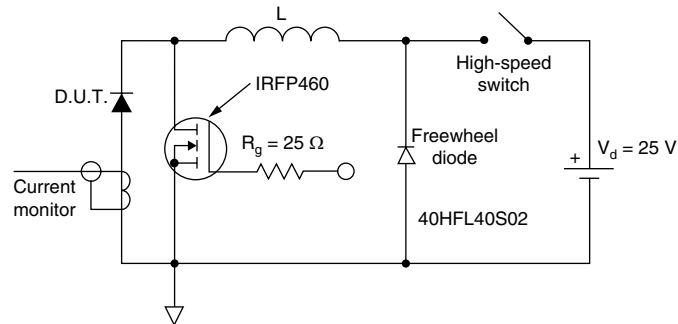


Fig. 8 - Unclamped Inductive Test Circuit

Note

- (1) Formula used: $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$;
 P_d = Forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 6);
 $P_{d_{REV}}$ = Inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at $V_{R1} = 80\%$ rated V_R



VS-113CNQ100A PbF Series

Schottky Rectifier
New Generation 3 D-61 Package, 2 x 55 A

Vishay High Power Products

ORDERING INFORMATION TABLE

Device code	VS-	113	C	N	Q	100	A	PbF
	1	2	3	4	5	6	7	8

- | | | |
|----------|---|---|
| 1 | - | HPP product suffix |
| 2 | - | Current rating (110 A) |
| 3 | - | Circuit configuration:
C = Common cathode |
| 4 | - | Package:
N = D-61 |
| 5 | - | Schottky "Q" series |
| 6 | - | Voltage rating (100 = 100 V) |
| 7 | - | Package style: <ul style="list-style-type: none">• A = D-61-8• ASM = D-61-8-SM• ASL = D-61-8-SL |
| 8 | - | <ul style="list-style-type: none">• None = Standard production• PbF = Lead (Pb)-free |

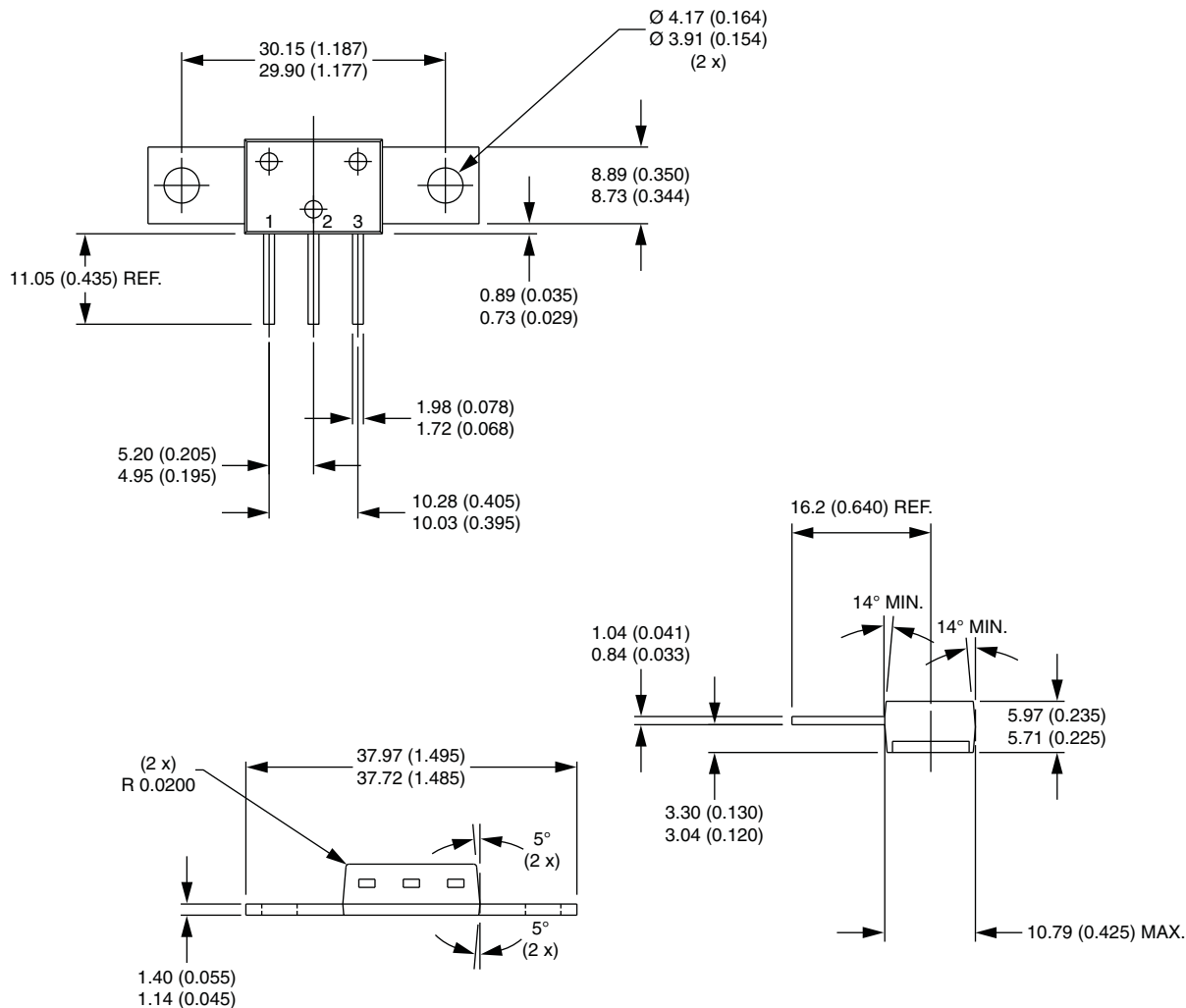
Standard pack quantity: A = 10 pieces; ASM/ASL = 20 pieces

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



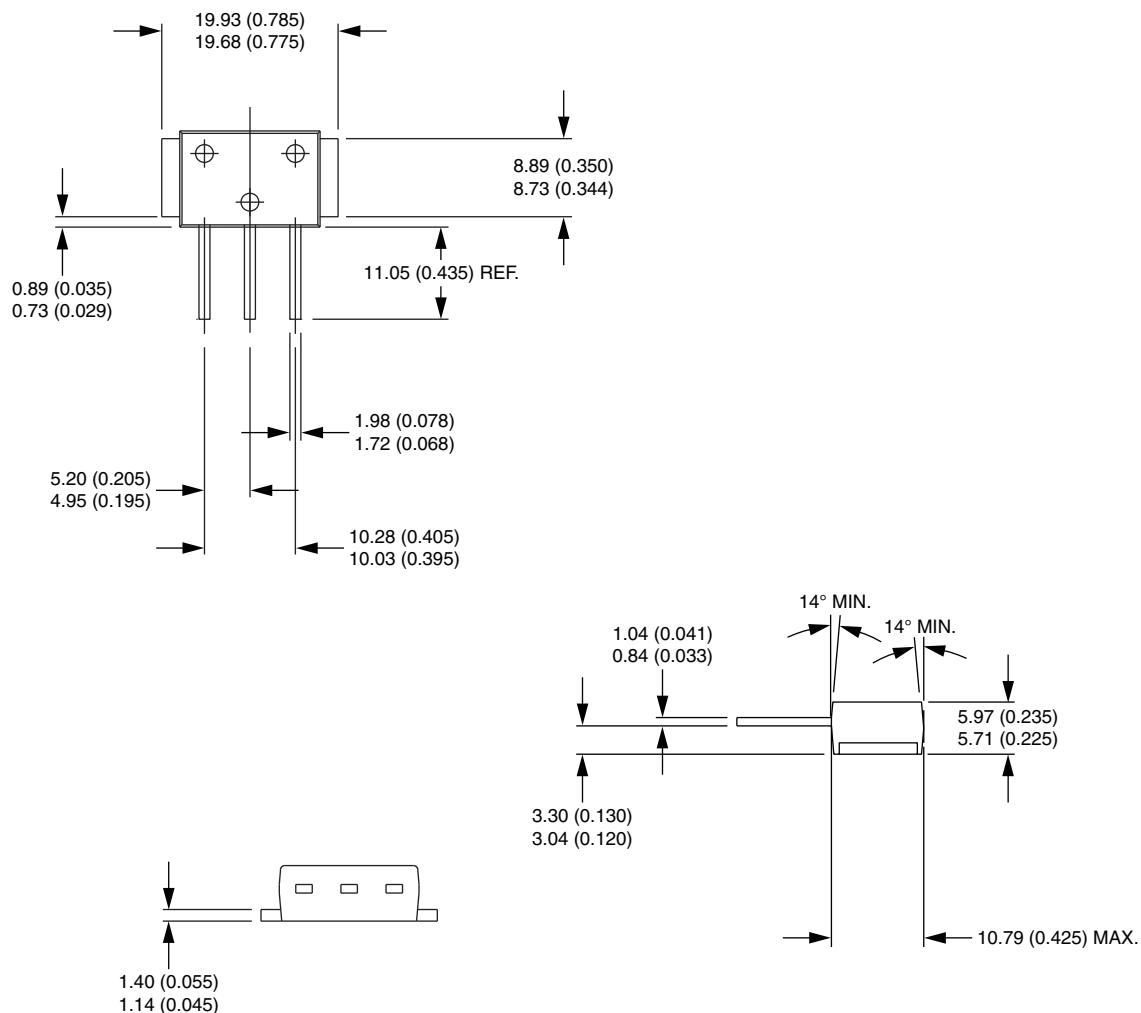
D-61-8, D-61-8-SM, D-61-8-SL

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



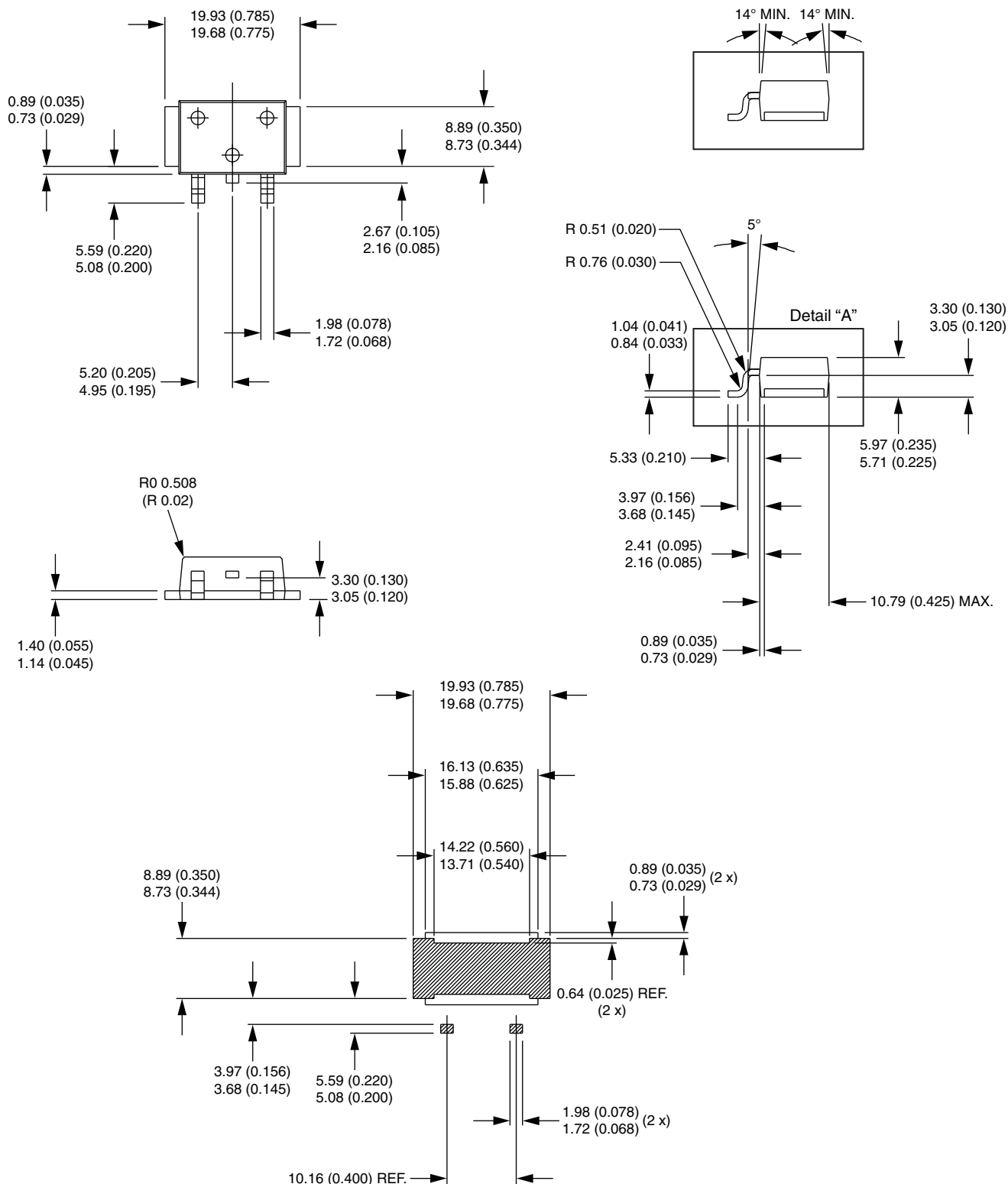


DIMENSIONS - D-61-8-SM in millimeters (inches)





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





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