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 = 141 °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	4600	
		10 ms sine or 6 ms rect. pulse		790	
Non-repetitive avalanche energy per leg	E_{AS}	T_J = 25 °C, I_{AS} = 8 A, L = 1.7 mH		54	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 x V_R typical		8	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 °C	0.60	V
		80 A		0.74	
		40 A	T_J = 125 °C	0.54	
		80 A		0.66	
Maximum reverse leakage current per leg See fig. 2	I_{RM} (1)	T_J = 25 °C	V_R = Rated V_R	5	mA
		T_J = 125 °C		45	
Maximum junction capacitance per leg	C_T	V_R = 5 V_{DC} (test signal range 100 kHz to 1 MHz) 25 °C		2600	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	°C
Maximum thermal resistance, junction to case per leg		R_{thJC}	DC operation See fig. 4	0.85	°C/W
Maximum thermal resistance, junction to case per package			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	81CNQ035A	
				81CNQ040A	
				81CNQ045A	
			Case style D-61-8-SM	81CNQ035ASM	
				81CNQ040ASM	
				81CNQ045ASM	
			Case style D-61-8-SL	81CNQ035ASL	
				81CNQ040ASL	
				81CNQ045ASL	

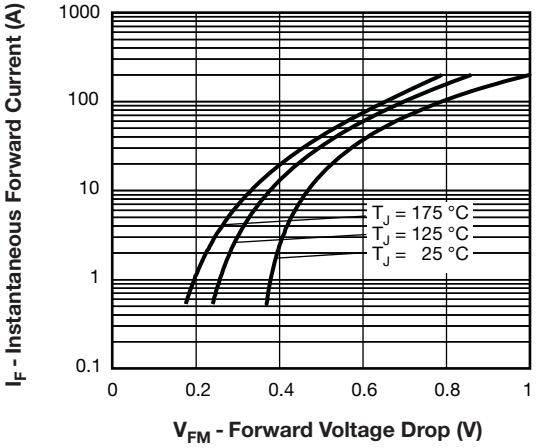


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

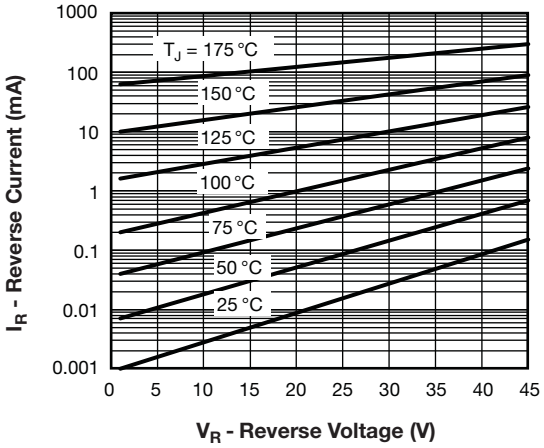


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

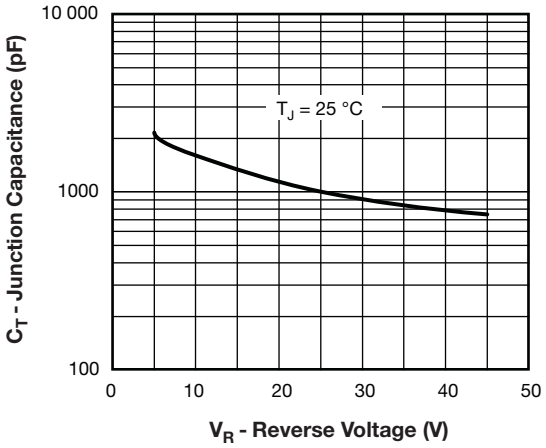


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

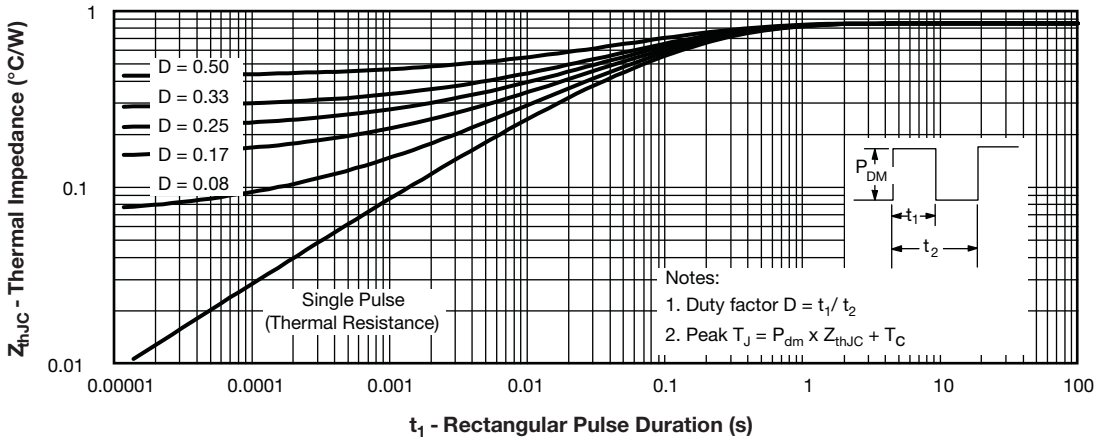


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

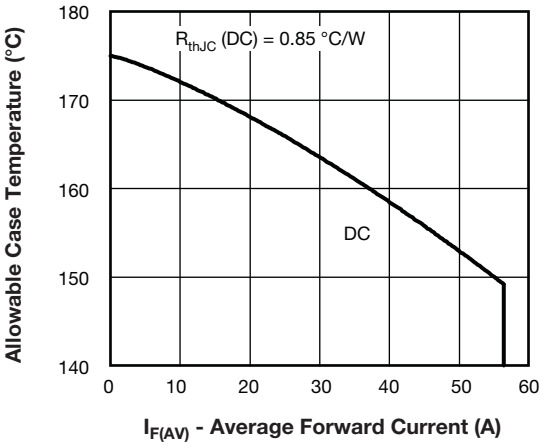


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

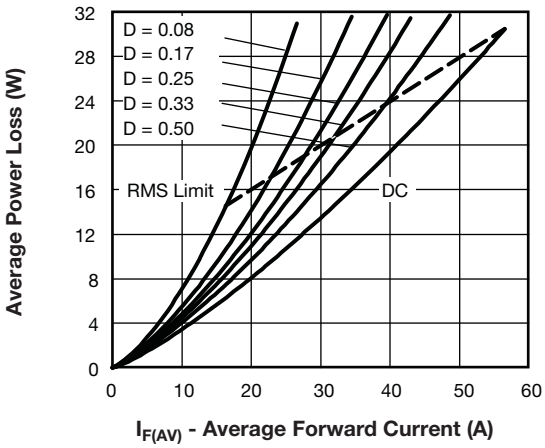


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

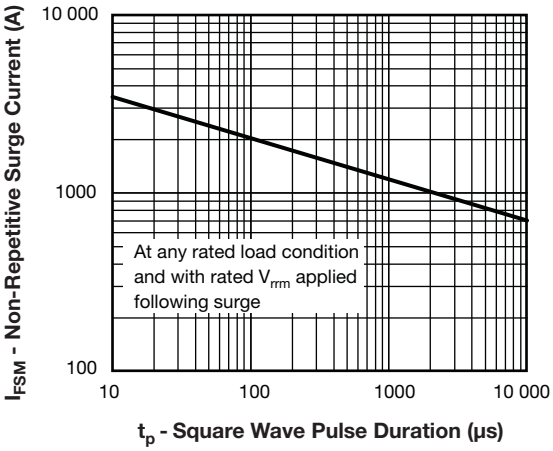


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

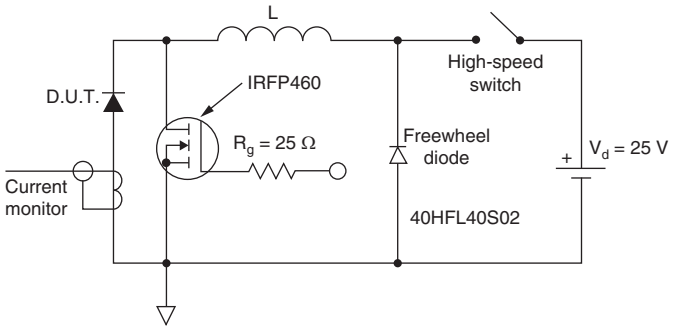
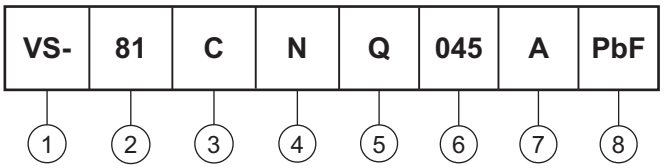


Fig. 8 - Unclamped Inductive Test Circuit

ORDERING INFORMATION TABLE

Device code



1 - Vishay Semiconductors product

2 - Current rating (80 A)

3 - Circuit configuration:
C = common cathode

4 - Package:
N = D-61

5 - Schottky “Q” series

6 - Voltage ratings
- 035 = 35 V
- 040 = 40 V
- 045 = 45 V

7 - Package style:
- A = D-61-8
- ASM = D-61-8-SM
- ASL = D-61-8-SL

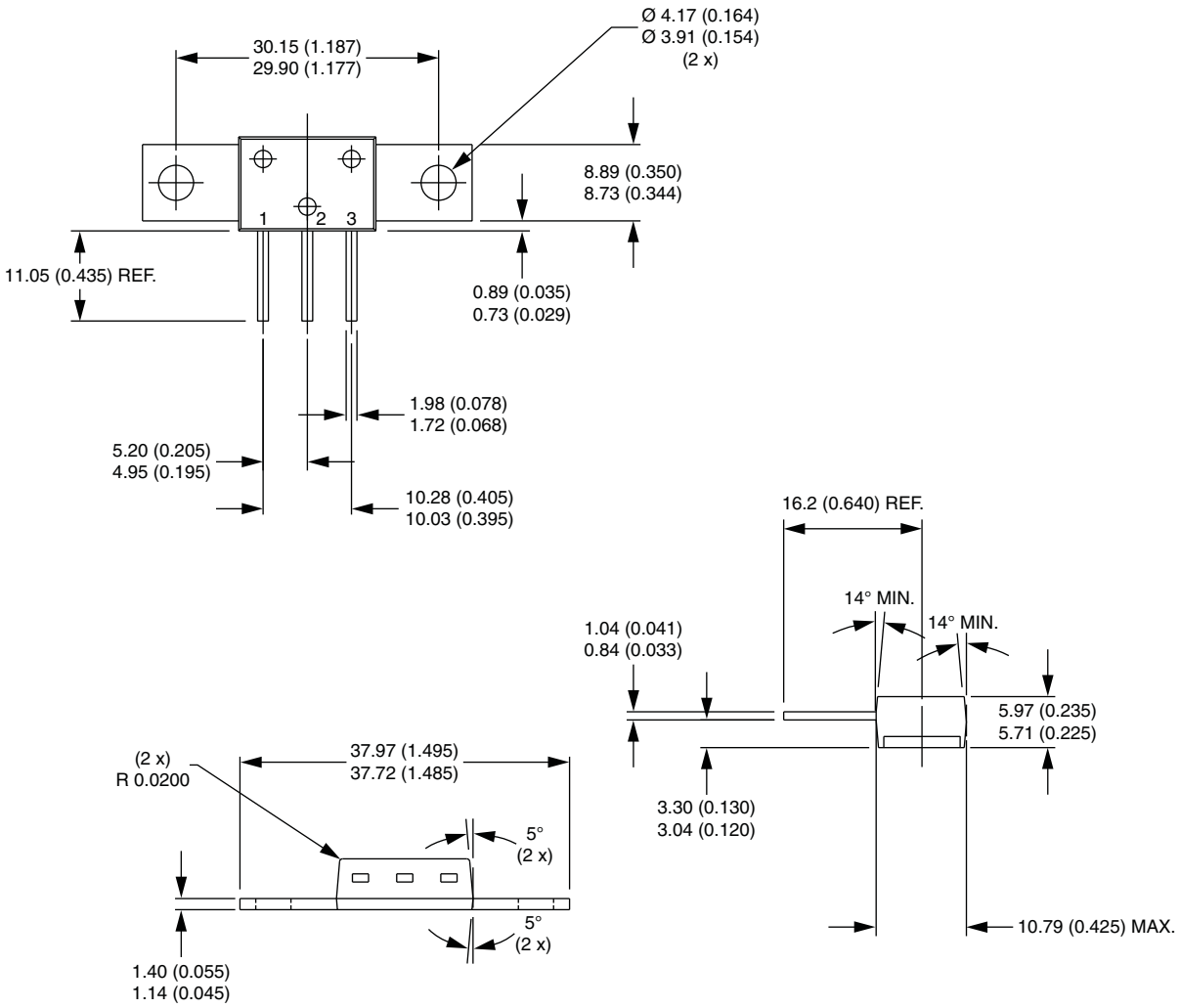
8 -
- None = standard production
- PbF = lead (Pb)-free

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

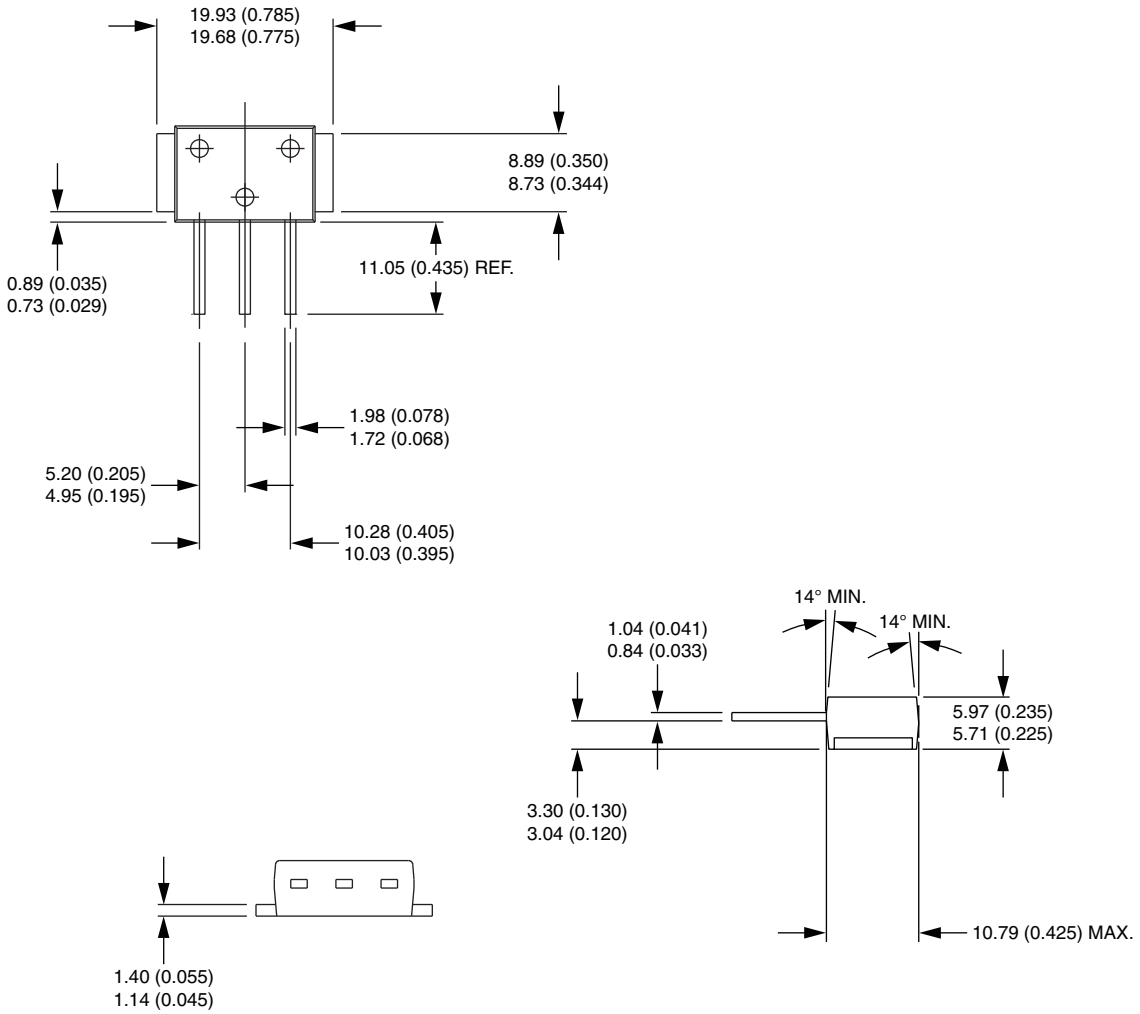
LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95354
Part marking information	www.vishay.com/doc?95356

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

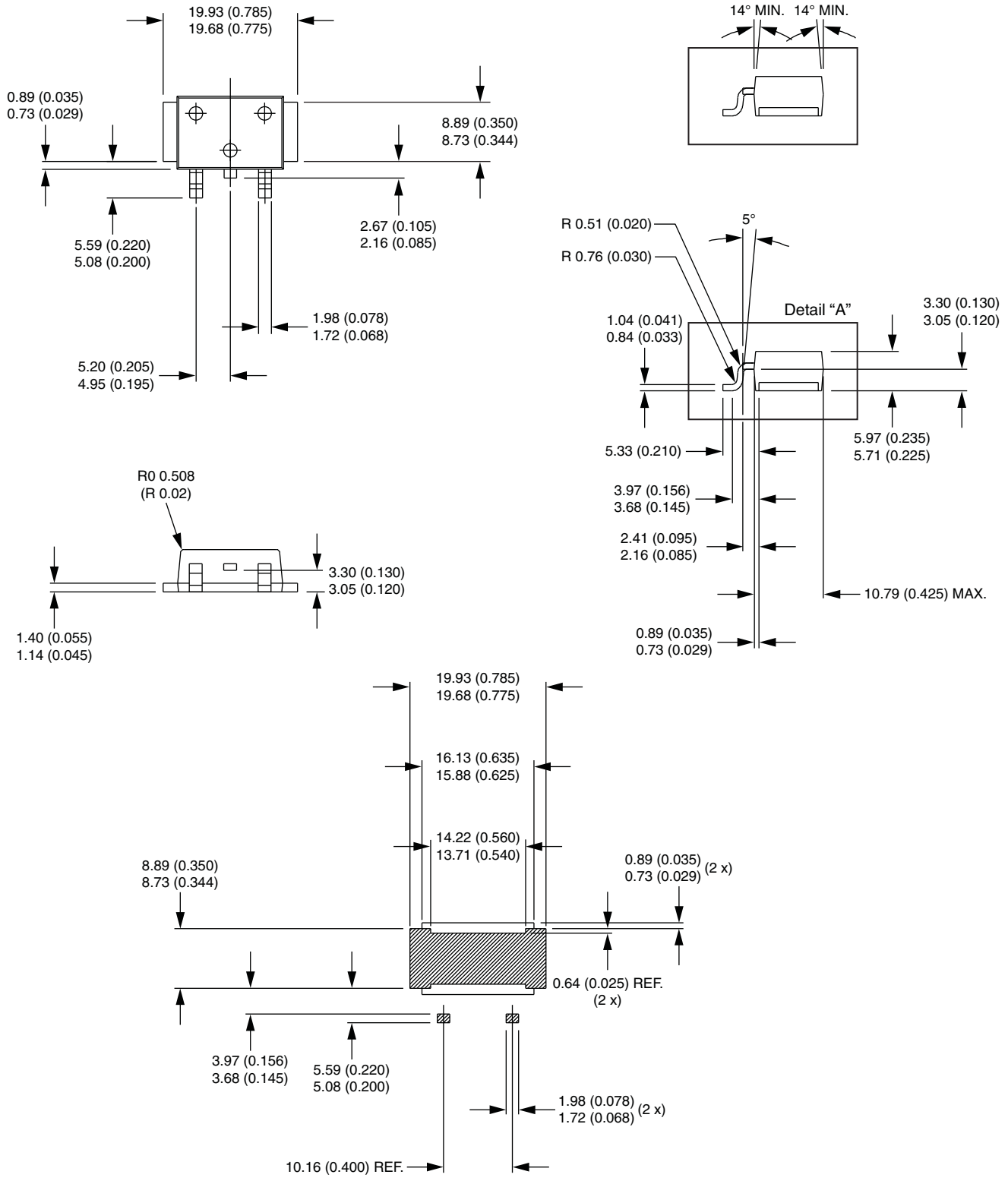
DIMENSIONS - D-61-8 in millimeters (inches)



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



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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.