Fully Sealed Potentiometer Cermet or Conductive Plastic

LINKS TO ADDITIONAL RESOURCES

3D Models

FEATURES

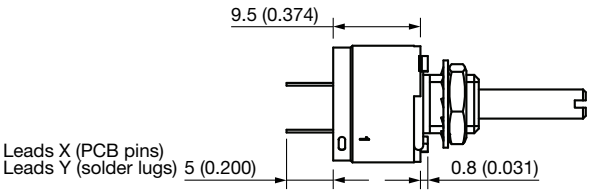
- PRV6S high power rating 1.5 W at 70 °C (cermet)
- PRV6A 0.75 W at 70 °C (conductive plastic)
- Tests according to CECC 41000 or IEC 60393-1
- Low cost
- Fully sealed and panel sealed
- Compatible RV6 (MIL R 94)
- Mechanical endurance 50 000 cycles
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

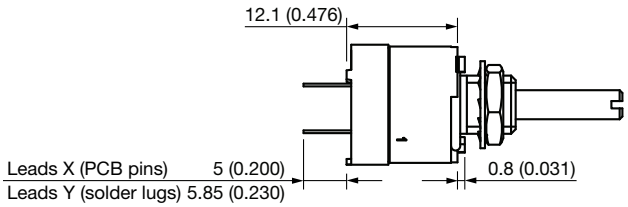
QUICK REFERENCE DATA	
Multiple module	No
Switch module	n/a
Detent module	n/a
Special electrical laws	A: linear, L: logarithmic, F: reverse logarithmic
Sealing level	IP 67
Lifespan	50K cycles

DIMENSIONS in millimeters (inches) ± 0.5 mm (± 0.02")

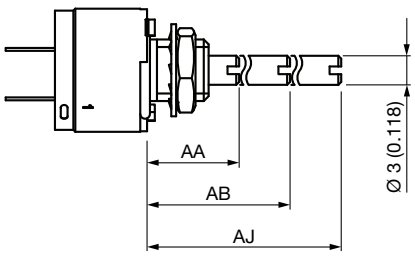
PRV6 STYLE A AND S



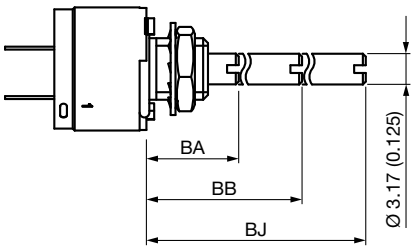
PRV6 STYLE B AND C



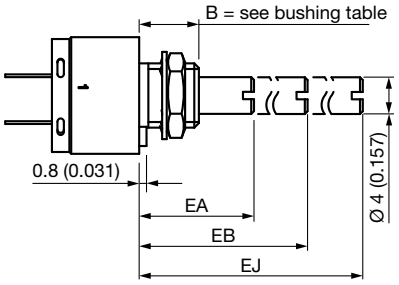
SHAFT DIAMETER 3 mm (0.118") BUSHING A-B-C



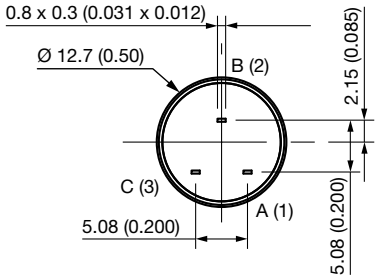
SHAFT DIAMETER 3.17 mm (0.125") BUSHING A-B-C



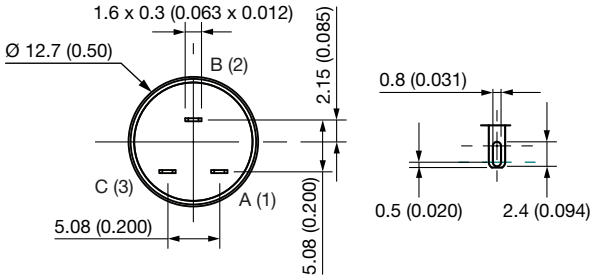
SHAFT DIAMETER 4 mm (0.157") BUSHING H-I (not panel sealed)



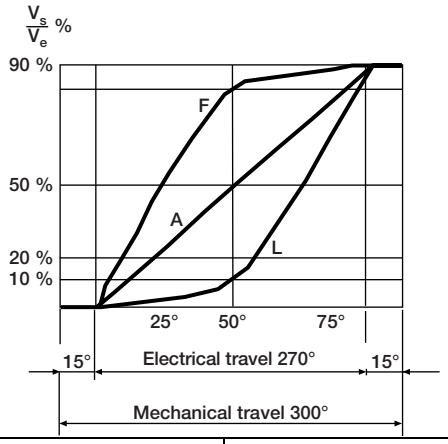
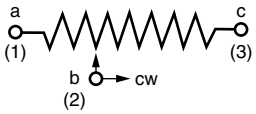
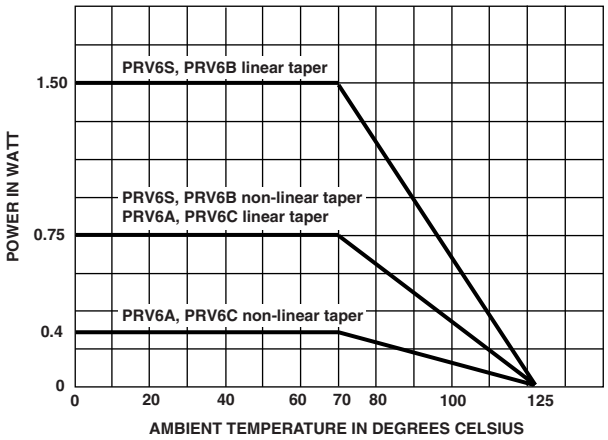
LEADS X = PCB PINS



LEADS Y = SOLDER LUGS



ELECTRICAL SPECIFICATIONS

		PRV6S, PRV6B	PRV6A, PRV6C
Resistive element		Cermet	Conductive plastic
Electrical travel		270° ± 15°	
Resistance range	Linear taper (A)	20 Ω to 10 MΩ	1 kΩ to 1 MΩ
	Non-linear taper (F-L)	470 Ω to 1 MΩ	470 Ω to 500 kΩ (± 20 %)
Taper			
Tolerance	Standard	± 20 %	± 20 %
	On request	± 10 %, ± 5 %	± 10 % (1 kΩ to 100 kΩ)
Circuit diagram			
Power rating at 70 °C	Linear	1.5 W at 70 °C	0.75 W at 70 °C
	Other tapers	0.75 W	0.4 W
Power rating chart			
Temperature coefficient (typical)		± 150 ppm/°C	± 500 ppm/°C
Limiting element voltage		350 V	
Contact resistance variation (CRV)		2 % or 3 Ω	
End resistance (typical)		1 Ω	
Dielectric strength (RMS)		1750 V_{RMS}	
Insulation resistance (500 V_{DC})		10^6 MΩ	

MECHANICAL SPECIFICATIONS	
Mechanical travel	300° ± 5°
Operating torque (Ncm (oz.in.))	0.5 to 2 (0.7 to 3)
End stop torque (max. Ncm (lb.in.))	35 (3)
Tightening torque (max. Ncm (lb.in.))	150 (13)
Weight (g)	5 to 8 max.

ENVIRONMENTAL SPECIFICATIONS		
	PRV6S, PRV6B	**PRV6A, PRV6C**
Temperature range	-55 °C to +125 °C	-40 °C to +125 °C
Climatic category	55/125/56	40/125/56
Sealing	Fully sealed container; IP67 and panel sealed	

PERFORMANCES				
TESTS	**CONDITIONS**	**TYPICAL VALUES AND DRIFTS**		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1\text{-}2}/R_{1\text{-}2}$ (%)	**OTHER**
Electrical endurance	1000 h at rated power 90'/30' - temperature 70 °C	± 1 %		CRV < 3 % Rn
Climatic sequence	Phase A dry heat 125 °C Phase B damp heat Phase C cold -55 °C Phase D damp heat 5 cycles	± 0.5 %	± 1 %	
Damp heat, steady state	56 days	± 0.5 %	± 1 %	Insulation resistance: > 10^4 MΩ
Change of temperature	5 cycles, -55 °C to +125 °C	± 0.5 %		
Mechanical endurance	50 000 cycles	± 3 %		CRV < 2 % Rn
Shock	50 *g* at 11 ms 3 successive shocks in 3 directions	± 0.1 %	± 0.2 %	
Vibration	10 Hz to 55 Hz 0.75 mm or 10 *g* during 6 h	± 0.1 %	± 0.2 %	

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability

STANDARD RESISTANCE ELEMENT DATA						
STANDARD RESISTANCE VALUES	**PRV6S AND PRV6B WITH LINEAR TAPER**			**PRV6S AND PRV6B WITH NON-LINEAR TAPER**		
	MAX. POWER AT 70 °C	**MAX. WORKING VOLTAGE**	**MAX. WIPER CURRENT**	**MAX. POWER AT 70 °C**	**MAX. WORKING VOLTAGE**	**MAX. WIPER CURRENT**
Ω	**W**	**V**	**mA**	**W**	**V**	**mA**
20	1.5	5.48	274			
50	1.5	8.66	173			
100	1.5	12.2	122			
200	1.5	17.3	87			
500	1.5	27.4	55	0.75	19.4	39
1K	1.5	38.7	38.7	0.75	27.3	27.4
2K	1.5	54.8	27.4	0.75	38.2	19.3
5K	1.5	86.6	17.3	0.75	61.2	12.2
10K	1.5	122.5	12.2	0.75	87	8.7
20K	1.5	173	8.26	0.75	122	6.1
50K	1.5	274	5.65	0.75	194	3.9
100K	1.22	350	3.5	0.75	273	2.74
220K	0.61	350	1.75	0.61	350	1.75
500K	0.25	350	0.70	0.25	350	0.7
1M	0.12	350	0.35	0.12	350	0.35
2M	0.06	350	0.17			
5M	0.025	350	0.070			
10M	0.012	350	0.035			

MARKING

- Vishay trademark
- Part number
- Manufacturing date code
- Terminal: 1

PACKAGING

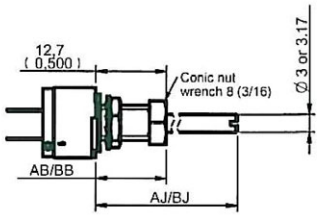
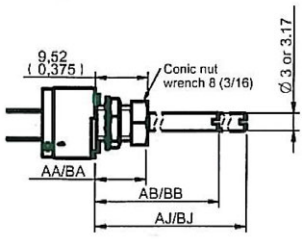
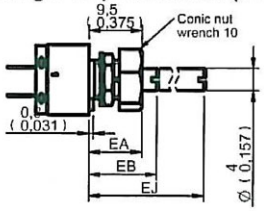
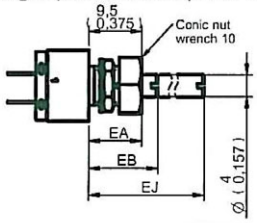
- Box of 15, 20, 25, or 50 pieces, code B12, B15, B17, or B25, depending of body and shaft construction

Hardware: nuts, washer, and O-ring are separately supplied (not mounted on the potentiometer), in a small bag placed in the packaging.

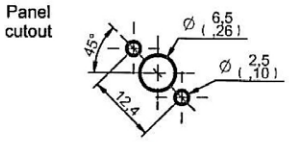
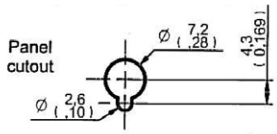
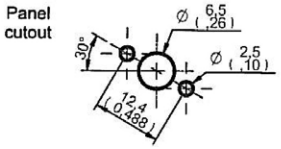
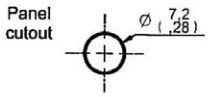
SHAFT	BUSHING	PACKAGING	
		STYLE: S, A	STYLE: B, C
AA	A, B, C, D, E	B25	B17
AB		B25	B17
AJ		B25	B12
BA		B25	B17
BB		B25	B17
BG		B25	B15
BJ		B25	B12
EA	H, I, J, K, S	B25	B17
EB		B25	B17
EJ		B25	B12
AP	All	Will be defined function of the shaft length	

OPTIONS

SPECIAL FEATURES

Panel sealing	Except for dia. 4 mm shaft, an O.ring is supplied with the potentiometer. This O.ring should be placed into the groove of the body and ensures the panel sealing. For dia. 4 mm shaft please see note “P” in ordering information.
Shaft locking	Bushing E  Bushing D  Bushing S no panel sealed (61QH)  Bushing S panel sealed (61QPH) 

OPTIONS

SPECIAL FEATURES	
Shafts	Shaft lengths are measured from the mounting face to the free end of the shaft. Special shafts are available if the customer supplies a drawing. The shaft slot is aligned to the wiper within ± 10°.
Locating peg	Except for dia. 4 mm shaft, the potentiometers are delivered with 2 opposite locating pegs orientated at 45°.These 2 pegs can be easily broken-off by the customer. On request, the orientation of the pegs can be at 30° instead of 45°. **Locating Peg A** **Bushing: A-B-C-D-E**  **Locating Peg R** **Bushing: H-I-S (locking shaft, not panel sealed)**  **Locating Peg L** **Bushing: A-B-C-D-E**  **Without Locating Peg** **Panel sealed bushing:** 
Ground pin	On request, ground pin can be added to PRV6 model, to connect body to ground

LOCATING PEG CODE

BUSHING	OLD CODE	A	L	R	0
A	6	x	x		x (1)
B	61	x	x		x (1)
C	62	x	x		x (1)
D	61H	x	x		x (1)
E	62H	x	x		x (1)
H	6Q			x	
I	61Q			x	
J	6QP				x
K	61QP				x
S	61QH			x	
S	61QPH				x

Note

(1) Not standard, special manufacturing

STANDARD COMBINATION OF SHAFT STYLES AND BUSHING

BUSHING	LOCATING PEG	STANDARD COMBINATION OF SHAFT STYLES AND BUSHING									
A	A	AA	AB	AJ	BA	BB	BG	BJ			
	L	AA	AB	AJ	BA	BB	BG	BJ			
	0 (1)	AA	AB	AJ	BA	BB	BG	BJ			
B	A	AA	AB	AJ	BA	BB	BG	BJ			
	L	AA	AB	AJ	BA	BB	BG	BJ			
	0 (1)	AA	AB	AJ	BA	BB	BG	BJ			
C	A		AB	AJ		BB	BG	BJ			
	L		AB	AJ		BB	BG	BJ			
	0 (1)		AB	AJ		BB	BG	BJ			
D	A	AA	AB	AJ	BA	BB	BG	BJ			
	L	AA	AB	AJ	BA	BB	BG	BJ			
	0 (1)	AA	AB	AJ	BA	BB	BG	BJ			
E	A		AB	AJ		BB	BG	BJ			
	L		AB	AJ		BB	BG	BJ			
	0 (1)		AB	AJ		BB	BG	BJ			
H	R								EA	EB	EJ
I	R								EA	EB	EJ
J	0								EA	EB	EJ
K	0								EA	EB	EJ
S (QH)	R								EA	EB	EJ
S (QPH)	0								EA	EB	EJ

Note

(1) Special manufacturing, not standard

ORDERING INFORMATION (part number)

P	R	V	6	B	B	A	B	G	X	B	1	7	5	0	2	M	A

MODEL

PRV6

STYLE

S = standard
A = audio
B = body length
C = audio and body length

BUSHING

	Ø	L	Old codes
A	1/4	1/4	6
B	1/4	3/8	61
C	1/4	1/2	62
D	1/4	3/8	61H
E	1/4	1/2	62H
H	7	6.5	6Q
I	7	9.5	61Q
J	7	6.5	6QP
K	7	9.5	61QP
S	7	9.5	61QH
S	7	9.5	61QPH

LOCATING PEG

0 = without
A = 45°
L = 30°
R = 180°
round
(see locating peg table above)

SHAFT

	Ø	L	Old codes
AA	3	9.5	K
AB	3	12.5	M
AJ	3	22	R
BA	1/8	9.5	CK
BB	1/8	12.5	CM
BG	1/8	16	CD
BJ	1/8	22	CR
EA	4	9.5	E
EB	4	12.5	F
EJ	4	22	G
AP	custom shaft		

all are slotted

LEADS

X = PCB pins (old code W)
Y = solder lugs

PACKAGING

Depending of body and shaft construction:
B12 = box 15 pcs
B15 = box 20 pcs
B17 = box 25 pcs
B25 = box 50 pcs

RESISTANCE CODE / TOLERANCE / TAPER OR SPECIAL

Resistance:
from
200 = 20 Ω to
106 = 10 MΩ
for
linear cermet

Tolerance:
standard
M = 20 %
on request
K = 10 % or
J = 5 %

Taper: A, L, F
or
special code
given by
Vishay

PART NUMBER DESCRIPTION (for information only using old codes)

PRV	S	61	W	CD	5K	20 %	A		BO				e3
MODEL	BUSHING	LEADS	SPECIAL	SHAFT	VALUE	TOLERANCE	TAPER	SPECIAL	PACKAGING	SPECIAL	AP Nº	SPECIAL	LEAD FINISH

ACCESSORIES

Additional Accessories (to order separately)	www.vishay.com/doc?51051

RELATED DOCUMENTS

APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.