

1/2" (12.7 mm) Conductive Plastic and Cermet Potentiometers



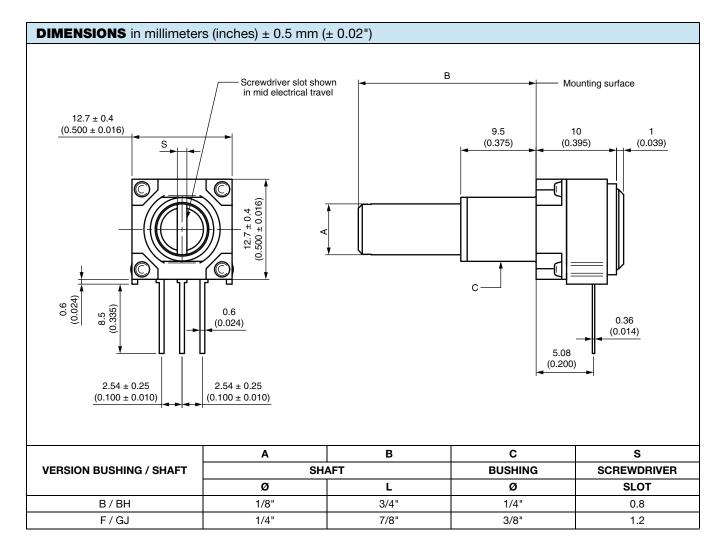
QUICK REFERENCE DATA			
Multiple module	No		
Switch module	n/a		
Detent module	n/a		
Special electrical laws	A: linear, L: logarithmic		
Sealing level	IP 50		
Lifespan	10K cycles		

FEATURES

 Model 248: 0.5 W at 70 °C (conductive plastic element)



- Model 249: 1 W at 70 °C (cermet element)
- Cost effective panel potentiometer
- PCB mounting
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>





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PARAMETER	MODEL 248	MODEL 249	
Element type	Conductive plastic	Cermet	
Total resistance range	500 Ω	to 1 MΩ	
Standard series	1,	2, 5	
Resistance tolerance	± 20 %	± 20 % (on request ± 10 %)	
	0.5 W at 70 °C	1.0 W at 70 °C	
Power rating Linea	0.5 N I I I I I I I I I I I I I I I I I I I	0 25 50 70 100 125 150 AMBIENT TEMPERATURE IN °C	
Circuit diagram	② → cw ①—/////—3		
Temperature coefficient of resistance (typical)	± 500 ppm/°C	± 150 ppm/°C	
Linearity (typical)	± 5 % independent		
Limiting element voltage	300 V		
Contact resistance variation (typical)	5 % of the total resistance		
Insulation resistance	1000 M Ω minimum, 500 V _{DC}		
Dielectric strength	750 V _{RMS} minim	750 V _{RMS} minimum 50 Hz / 60 Hz	
End resistance	2 Ω maximum each end		
Effective electrical travel	265° ± 5°		

MECHANICAL SPECIFICATIONS			
Mechanical travel	295° ± 5°		
Operating torque	0.1 Ncm to 2 Ncm		
End stop torque	35 Ncm (50 ozinch)		
Max. tightening torque	150 Ncm		
Weight	8.3 g (0.29 oz.) (1/4" x 7/8" FMF metal shaft)		

ENVIRONMENTAL SPECIFICATIONS			
Temperature range -55 °C to +125 °C			
Climatic category	55 / 125 / 4		
Sealing	IP 50		

MARKING

- · Vishay model
- Vishay logo
- Variation law
- SAP code for ohmic value
- Tolerance in %
- Date code (4 digits)
- Terminal identification "3" for lead 3

PACKAGING

• In box of 25 pieces, code BO25

Note

• Hardware supplied in separate bags



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PERFORMANCE					
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS FOR 249			
12313		∆R _T /R _T (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER	
Electrical endurance	1000 h at rated power 90'/30' - ambient temp. 70 °C	± 3 %	± 5 %	Contact res. variation: < 1 %	
Damp heat, steady state	4 days 40 °C 93 % HR	± 2 %	-	Dielectric strength: 1000 V_{RMS} Insulation resistance: > $10^4~M\Omega$	
Change of temperature	5 cycles, -55 °C at +125 °C	± 1 %	-	$\Delta V_{1-2}/V_{1-3} \le \pm 2 \%$	
Mechanical endurance	10 000 cycles	± 3 %	-	Contact res. variation: ≤ 2 % Rn	
Shock	50 g's at 11 ms 3 successive shocks in 3 directions	± 1 %	± 2 %	-	
Vibration	10 Hz to 55 Hz, 0.75 mm or 10 <i>g</i> 's during 6 h	± 1 %	-	$\Delta V_{1-2}/V_{1-3} \le \pm 2 \%$	

Note

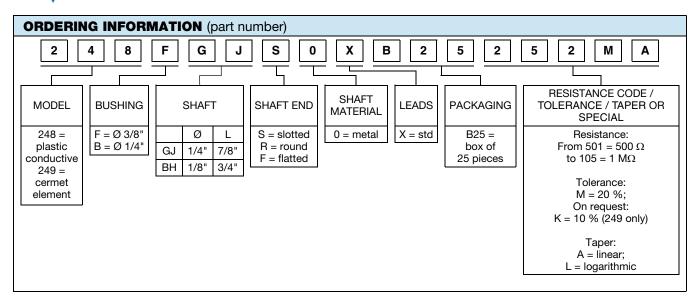
• Nothing stated herein shall be construed as a guarantee of quality or durability.

STANDARD	248 LINEAR TAPER			249 LINEAR TAPER		
RESISTANCE VALUES	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
500	0.5	15.8	32	1	22.4	45
1K	0.5	22.4	22	1	31.6	32
2K	0.5	31.6	16	1	44.7	22
2.5K	0.5	35.4	14	1	50.0	20
5K	0.5	50.0	10	1	70.7	14
10K	0.5	70.7	7	1	100	10
20K	0.5	100	5.0	1	141	7
25K	0.5	112	4.5	1	158	6
50K	0.5	158	3.2	1	224	4
100K	0.5	224	2.2	0.90	300	3.0
200K	0.45	300	1.50	0.45	300	1.5
250K	0.36	300	1.20	0.36	300	1.2
500K	0.18	300	0.60	0.18	300	0.6
1M	0.09	300	0.30	0.09	300	0.3



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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



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