

**Keithley Instruments**  
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## SMU Protection Module Characteristics

### CONDITIONS

This document contains specifications and supplemental information for the Model 2290-PM-200 Protection Module. Specifications are the standards against which the Model 2290-PM-200 is tested. Upon leaving the factory, the Model 2290-PM-200 meets these specifications. Characteristics, supplemental characteristics, and typical values are not warranted, apply at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , < 70 percent relative humidity, and are provided solely as useful information.

### CHARACTERISTICS

<b>Leakage</b>	< 10 pA at 200 V typical
<b>DC current carrying capability</b>	100 mA in unclamped condition
<b>Maximum protection active current</b>	Current must be limited to <120 mA in clamped condition (~230 V)
<b>Protection voltage</b>	220 V DC minimum 230 V DC typical 240 V DC maximum
<b>Series resistance</b>	$470 \Omega \pm 10\%$
<b>Dimensions</b>	81.28 mm long $\times$ 81.53 mm wide $\times$ 54.10 mm high (3.20 in. long $\times$ 3.21 in. wide $\times$ 2.13 in. high) Maximum length with high-voltage connectors: 135.64 mm (5.34 in.)
<b>Weight</b>	0.25 kg (0.55 lb)

### GENERAL

<b>Warranty</b>	1 year
<b>Safety</b>	Listed to UL 61010-1:2012 (3 <sup>rd</sup> edition) Conforms to European Union Low Voltage Directive

### CONNECTORS:

<b>High voltage</b>	5 kV connector: Male SHV, 9.35 mm (0.38 in.) diameter, Kings 1704-1
	10 kV connector: Female SHV, 13.59 mm (0.535 in.) diameter, Kings 1764-1
<b>Low voltage</b>	Triaxial, female, quantity of 2
<b>Safety</b>	Protective earth (safety ground) screw terminal, quantity of 2

