

Dimensions in Inches (mm)

PolyZen devices are polymer enhanced precision Zener diode micro-assemblies that help protect sensitive electronics from damage caused by inductive voltage spikes, voltage transients, incorrect power supplies and reverse bias. The PolyZen micro-assembly incorporates a stable Zener diode for precise voltage clamping and a resistively non-linear, polymeric positive temperature coefficient (PPTC) layer that responds to either diode heating or overcurrent events by transitioning from a low to high resistance state.

**Benefits:** • Helps shield downstream electronics from overvoltage and reverse bias • Trip events shut out overvoltage and reverse bias sources • Analog nature of trip events minimizes upstream inductive spikes • Helps reduce design costs with single component placement and minimal heat sinking requirements

**Features:** • Overvoltage transient suppression • Holds current up to 2.3A • Time delayed, overvoltage trip • Time delayed, reverse bias trip • Power handling on the order of 30 watts • Integrated device construction

**Applications:** • DC power port protection for systems using barrel jacks for power input • USB peripheral protection • DC power port protection in portable electronics • Automotive peripheral input power protection

**General Characteristics:** • **Operating Temperature Range:** -40°C – 85°C • **ESD Withstand:** 15KV Human Body Model • **Diode Capacitance:** 4200pF Typical @ 1MHz, 1V RMS

**Test Board Features:** • **Thickness:** 0.062 inches • **Board Material:** FR4 Laminate (glass, epoxy) with 2-sided 2oz. copper cladding • **Plating:** 3 – 5µ inches Gold over 100µ inches Nickel on all exposed pads and vias • **Connections:** 3 Gold-plated contact fingers (.30" X .50") identified V<sub>IN</sub>, V<sub>OUT</sub>, GND. 3 Gold-plated vias provided as alternate connections.

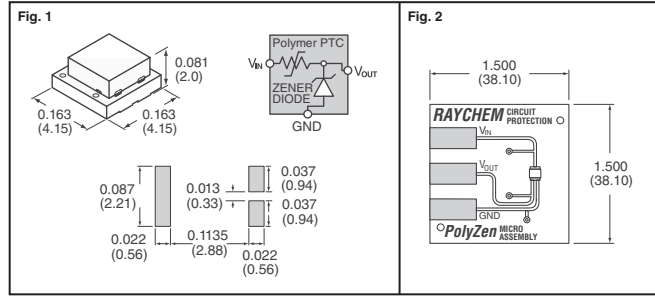
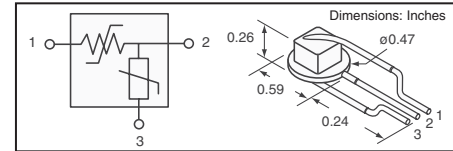


Fig.	Vz Typical (V)	Izt (A)	I HOLD @ 20°C (A)	R Typ (Ω)	R1Max. (Ω)	VINT Max. @ 3V (V)	IFLT Max. @ 16V (A)	Power Dissipation Typ. (W)	Digi-Key Part No.	Cut Tape Pricing			Tape and Reel Pricing 3,000	Tyco Electronics Part No.
										1	10	100		
<b>Diodes</b>														
1	5.6	0.1	0.75	0.28	0.45	48	+10 / -40	0.7	ZEN056V075A48LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN056V075A48LS
	5.6	0.1	1.3	0.12	0.16	24	+10 / -40	0.7	ZEN056V130A24LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN056V130A24LS
	5.6	0.1	2.3	0.04	0.06	16	+5 / -40	0.7	ZEN056V230A16LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN056V230A16LS
	6.5	0.1	2.3	0.04	0.06	16	+3.5 / -40	0.7	ZEN065V230A16LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN065V230A16LS
	13.2	0.1	1.3	0.12	0.16	24	+3 / -40	0.7	ZEN132V130A24LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN132V130A24LS
	16.4	0.1	1.3	0.12	0.16	24	+1.25 / -40	0.7	ZEN164V130A24LSCT-ND	1.04	8.89	81.48	528.53/M	ZEN164V130A24LS
<b>Test Boards</b>														
2	5.6	0.1	1.3	0.12	0.16	24	+10 / -40	0.7	ZEN056V130A24LS-TB-ND	9.59	87.87	—	—	ZEN056V130A24LS-TB
	5.6	0.1	2.3	0.04	0.06	16	+5 / -40	0.7	ZEN056V230A16LS-TB-ND	9.59	87.87	798.80	—	ZEN056V230A16LS-TB
	6.5	0.1	2.3	0.04	0.06	16	+3.5 / -40	0.7	ZEN065V230A16LS-TB-ND	9.59	87.87	798.80	—	ZEN065V230A16LS-TB
	13.2	0.1	1.3	0.12	0.16	24	+3 / -40	0.7	ZEN132V130A24LS-TB-ND	9.59	87.87	—	—	ZEN132V130A24LS-TB
	16.4	0.1	1.3	0.12	0.16	24	+1.25 / -40	0.7	ZEN164V130A24LS-TB-ND	9.59	87.87	798.80	—	ZEN164V130A24LS-TB

† For Tape and Reel part number, change CT-ND to TR-ND.

## Raychem™ 2Pro™ Devices

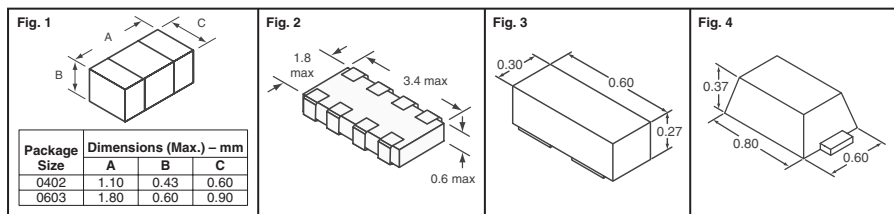


The 2Pro product is an integrated overcurrent/overvoltage protection device. The component incorporates Polyswitch PPTC (polymeric positive temperature coefficient) and metal oxide varistor technology in a single device. The 2Pro device helps provide current limiting during overcurrent events, and voltage clamping during overvoltage events. After a fault condition is removed and power is cycled, 2Pro devices will reset so that equipment remains operational. 2Pro circuit protection devices help manufacturers comply with global safety standards, including UL 60950, TIA-968-A, IEC 60950, and ITU-T K.20/K.21. The UL 497A listed protector also helps provide ESD protection.

**Agency Recognition:** • UL 497A/File No. E258475

Overcurrent Terminals 1 - 2				Initial Resistance		Overvoltage Terminals 2 - 3		Digi-Key Part No.	Pricing			Tyco Electronics Part No.
Rated Current (A)	Hold	Trip	RMin. (Ω)	RMax. (Ω)	Varistor Voltage V @ 1mA DC (V)	Max. Clamping Voltage @ 25A (V)	1		10	100		
0.15	0.15	0.30	7.0	14.0	270	455	TM2P-10271-ND	.77	7.05	64.06	TM2P-10271	

## Raychem™ PESD and SEDS Devices



The Raychem PESD and SEDS electrostatic discharge protection devices provide exceptionally low capacitance, and they perform better than other comparable components in transmission line pulse (TLP) testing, as well as IEC61000-4-2 testing, especially after multiple hits (up to 1000). The devices offer a lower trigger voltage and a lower clamping voltage than typical polymer ESD devices, resulting in improved protection of sensitive electronic components.

Fig.	Package Size	Max. VDC (V)	Trigger VT(IEC)▲ (V)	Clamping VC(IEC)▲§ (V)	Cp @ 1MHz, 1VRMS (pF) (Typ.)	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Tyco Electronics Part No.
							1	10	100		Qty.	Pricing	
<b>PESD Devices</b>													
1	0402	14	250	40	0.25	PESD0402-140CT-ND	.18	1.56	14.32	PESD0402-140TR-ND	10,000	68.07/M	PESD0402-140
	0603	24	215	45	0.20	PESD0603-240CT-ND	.15	1.32	12.12	PESD0603-240TR-ND	5,000	68.07/M	PESD0603-240
2	(4)1206‡	24	250	45	0.25	PESD1206Q-240CT-ND	.46	3.96	36.34	PESD1206Q-240TR-ND	5,000	204.21/M	PESD1206Q-240

▲ Measured during IEC 61000-4-2, level 4 pulse § Measured 30ns after pulse initiation ‡ Four individual suppressors

Fig.	Package Size	Input Cap. (pF) (Typ.)	Leakage Current (µA) (Max.)	Breakdown Voltage (V) (Min.)	Working Reverse Voltage (V)	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Tyco Electronics Part No.
							1	10	100		Qty.	Pricing	
<b>SEDS Devices</b>													
3	0201	0.6	1.0	±5.8	5.0	SESD0201C-006-058CT-ND	.42	3.60	33.03	SESD0201C-006-058TR-ND	5,000	216.22/M	SESD0201C-006-058
	0201	12.0	1.0	±5.8	5.0	SESD0201C-120-058CT-ND	.21	1.80	16.52	SESD0201C-120-058TR-ND	5,000	108.11/M	SESD0201C-120-058
4	0402	0.5	1.0	+5.4/-1.0	5.0	SESD0402S-005-054CT-ND	.31	2.64	24.22	SESD0402S-005-054TR-ND	8,000	158.56/M	SESD0402S-005-054

**Digi-Reel®** Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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