



# SENSONETICS

*Sensing today...with tomorrow's technology*

## VOLTAGE & LOAD DUMP SUPPRESSORS

175 to 325 Joule Surge Capacity  
For 24V Automotive Electrical Systems



This series of Sensonetics' Transient Voltage Suppressors is specifically designed to protect automotive electrical systems against load-dump transients, while maintaining a predetermined clamping voltage. When the battery is removed from the charging unit, the low impedance alternator produces large, positive load-dump transients. Simultaneously, negative field-decay transients are generated by the collapsing field. If not absorbed and diverted to ground, these transients would propagate through the vehicle's electrical system, often with catastrophic results on integrated circuits, semiconductors, and other voltage-sensitive components.

Sensonetics' Types PRZ50T060 through PRZ95T060 are designed for use in 24-volt electrical systems. For other voltages, consult the factory.

- **Conforms to SAE J1113 for surge suppression**
- **Hermetically sealed TO-3 package**
- **Dielectrically isolated and passivated junctions to withstand unusually high surges at high temperatures**

### ELECTRICAL SPECIFICATIONS (@ 25°C unless otherwise specified)

SPECIFICATIONS/CONDITIONS	SY MB OL	UNIT	TYPE									
			50TO60		70TO60		80TO60		90TO60		95TO60	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Reverse Stand Off Voltage	V <sub>R</sub>	Volts	—	36	—	36	—	36	—	36	—	36
Reverse Leakage at stand off voltage	I <sub>R</sub>	μA	—	1000	—	1000	—	1000	—	1000	—	1000
Breakdown Voltage @ I <sub>B</sub> =40 mA	V <sub>B</sub>	Volts	38	42	38	42	38	42	38	42	38	42
Peak Pulse Circuit (See test circuit)	I <sub>p</sub>	Amps	—	50	—	70	—	80	—	90	—	95
Clamping Voltage @ I <sub>p</sub>	V <sub>C</sub>	Volts	—	44	—	47	—	48	—	49	—	50
Transient Power Carrying Capacity (See test circuit. Maximum 10 consecutive cycles @ 1-minute intervals @ I <sub>p</sub> . Also see Note 1.)	P <sub>TR</sub>	Joules	—	175	—	225	—	260	—	300	—	325

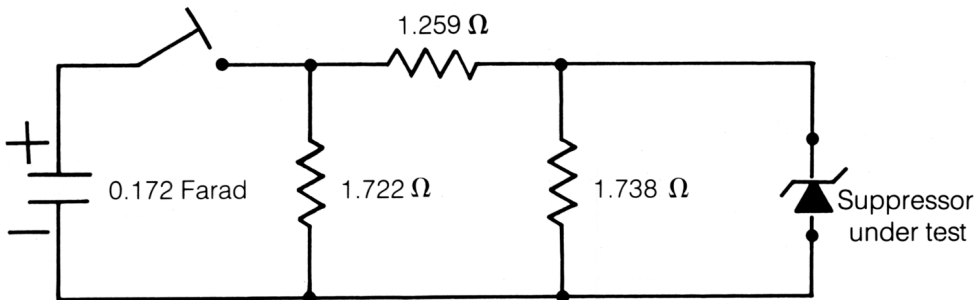
NOTE 1: For Type 90T060 and 95T060, minimum 5-minute interval or 50°C case temperature maximum prior to each cycle.

**ABSOLUTE MAXIMUM RATINGS**  
 (@ 25°C unless otherwise specified)

SPECIFICATION	SYMBOL	UNIT	LIMIT
Power Dissipation T <sub>J</sub> = 25 C T <sub>J</sub> = 150 C	P <sub>d</sub>	Watts	50 20
Thermal Resistance	R <sub>JC</sub>	°C/Watts	0.85
Operating Junction Temperature	T <sub>J</sub>	°C	-65 to +120
Storage Temperature	T <sub>S</sub>	°C	-65 to +200
Response Time (from stand off voltage to clamp voltage)	t <sub>r</sub>	sec	10 <sup>-12</sup>

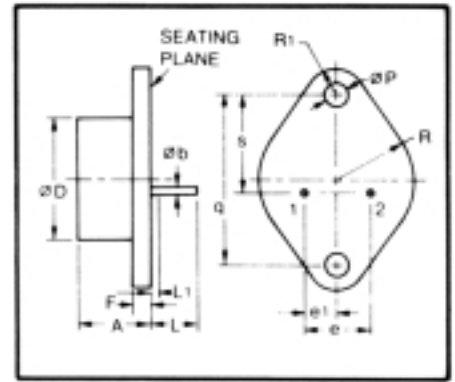
**MECHANICAL SPECIFICATIONS**

Package	JEDEC standard TO-3 package with 0.050" leads
Polarity	Anode to case (negative ground system)
Weight	15 grams



Test circuit for simulated load dump in automotive and similar electrical applications.

**DIMENSIONAL OUTLINE**  
**JEDEC TO-204MA**  
 (formerly JEDEC TO-3)



Symbol	inches	Millimeters	Notes
A	0.250/0.450	6.35/11.35	3
Øb	0.043/0.052	1.09/1.32	1
ØD	0.875	22.22	
e	0.420/0.044	10.67/11.17	2
e1	0.205/0.225	5.21/5.71	2
F	0.060/0.135	1.53/3.42	
L	0.312/0.500	7.93/12.70	
L1	0.050	1.27	1
ØP	0.151/0.161	3.836/4.089	
q	1.177/1.197	29.90/30.40	
R	0.495/0.525	12.58/13.33	
R1	0.131/0.188	3.33/4.77	
s	0.655/0.675	16.64/17.14	

Notes:

- Øb applies between L1 and L. Diameter is uncontrolled in L1.
- These dimensions should be measured at points 0.050 in. (1.27mm) to 0.055 in. (1.397mm) below seating plane. When gage is not used, measurement will be made at seating plane.
- Min/max