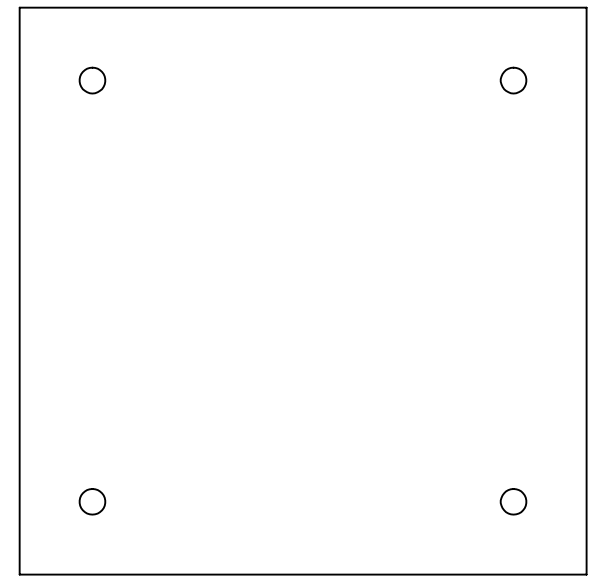
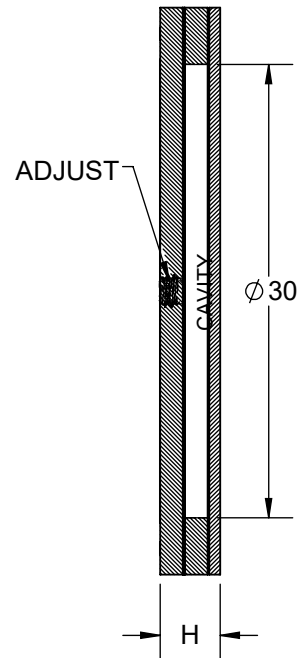
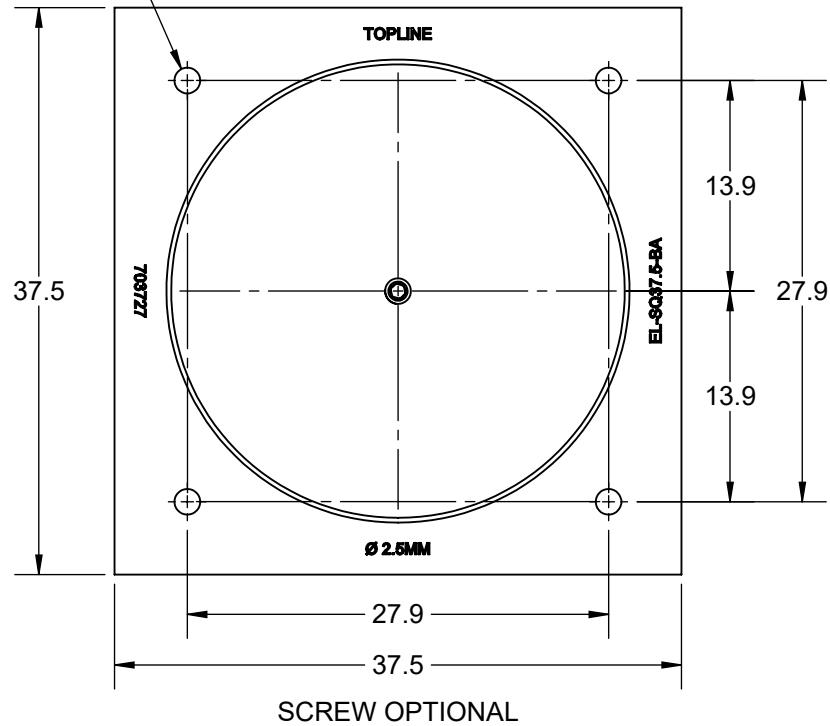


STYLE FS  
SCREW HOLE  
OPTIONAL

**TOP**

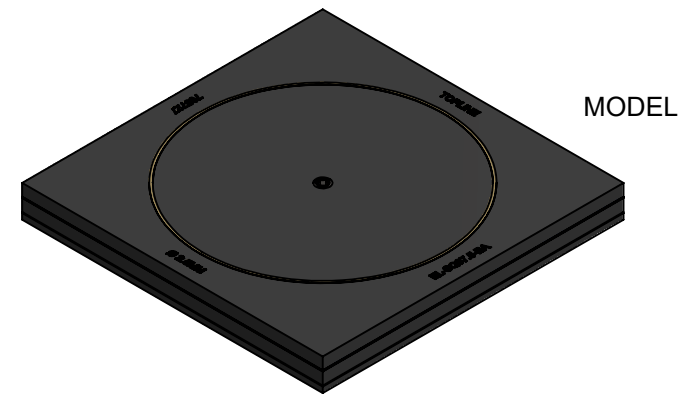
**SIDE**

**BOTTOM  
(NOTE 2)**



**DIMENSION AND WEIGHT (MASS) TABLE**

H HEIGHT ±0.5 mm	PCB MASS	TUNGSTEN BALLS IN CAVITY				Total PID MASS	SCREW ADJUST	SCREW HEX HEAD
		∅ DIA	Per Ball	QTY	Mass			
4.0mm	90g	1.5mm	0.031g	290~305	9.0g	19g	2-56	0.035
4.5mm	120g	2.0mm	0.073g	165~170	12g	22g	4-40	0.050
5.0mm	130g	2.3mm	0.102g	127~130	13g	24g	6-32	1/16
7.5mm	150g	2.5mm	0.143g	~105	15g	32g	6-32	1/16
8.0mm	180g	3.0mm	0.248g	~72	18g	36g	8-32	5/64
9.0mm	220g	4.0mm	0.587g	~38	22g	44g	10-32	3/32
13mm	280g	5.0mm	1.146g	~25	28g	60g	1/4-28	1/8



NOTES: (Unless Otherwise Specified).

1) DIMENSIONS mm

APPLICATION NOTES:

Contact TopLine for help to select the best PID for your application.

NOTES 2 MOUNTING STYLE

2= SCREW (FS)

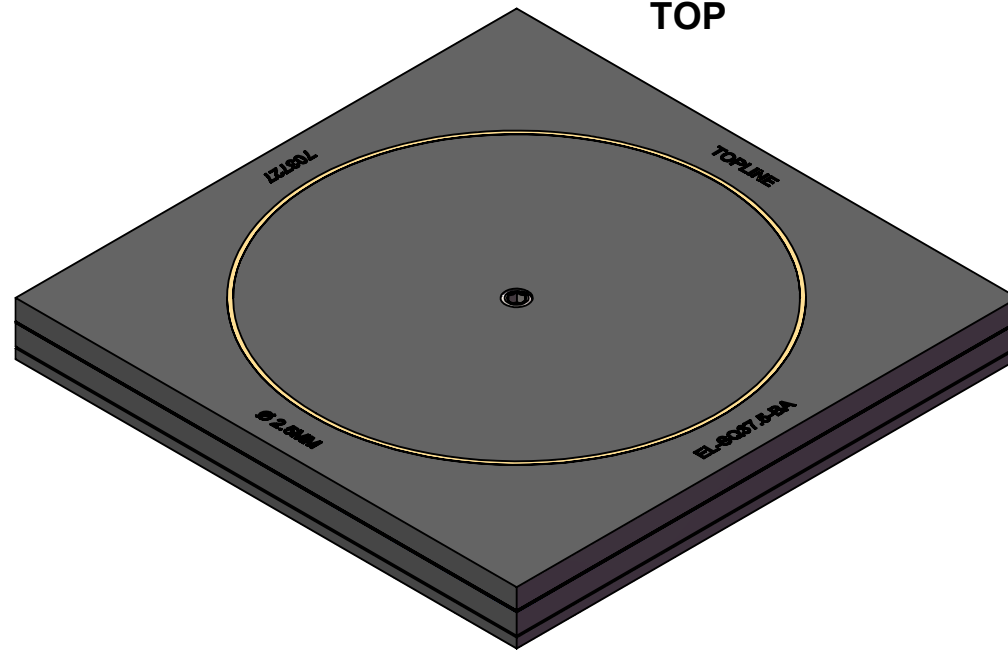
3= ADHESIVE (FA)

**PATENTS THAT MAY APPLY ON PAGE 4**

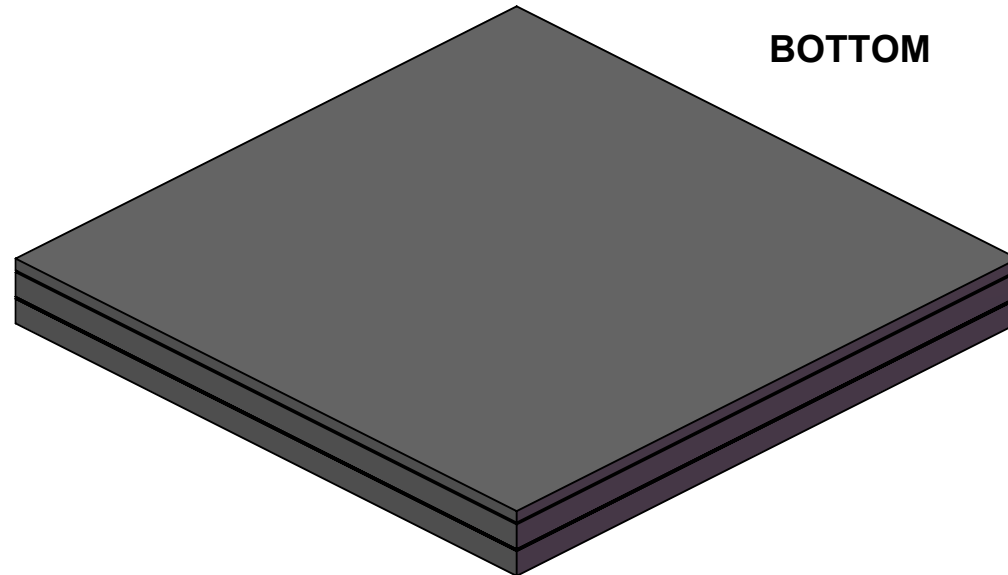
APPROVALS	DATE	<b>TopLine®</b>			
DRAWN T. Au	7/2/2021				
ENG M. Hart	7/2/2021	TITLE EL-SQ37.5-BA PID VIBRATION DAMPER			
MFG		SCALE	SIZE	DRAWING NO.	REV
QA		2.5:1	A	703727	A
CUST		DO NOT SCALE DRAWING			SHEET 1 OF 4
REVISED					

# MODELS

TOP



BOTTOM



**STYLE FA  
ADHESIVE  
(GLUE)**

**TopLine®**

TITLE EL-SQ37.5-BA  
PID VIBRATION DAMPER

SCALE 2.5:1	SIZE A	DRAWING NO. 703727	REV A
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DO NOT SCALE DRAWING

SHEET 2 OF 4

## PART NUMBER SYSTEM

<u>F</u>	<u>A</u>	<u>13</u>	<u>SQ</u>	<u>37.5X</u>	<u>5.0</u>	<u>A</u>
Series	Mounting on PCB	Tungsten Payload Grams (Mins.)	Shape	X/Y Size	Height	Version/Option
<p><b>Filled</b> F = FR4 Case A = Al Case</p> <p><b>Empty</b> E = FR4 Case L = Al Case</p>	<p><b>Mounting Style</b> A = Adhesive S = Screw Fastener</p>	<p><b>Code • Grams</b> 9.0 = 9.0gm 12 = 12gm 13 = 13gm 15 = 15gm 18 = 18gm 22 = 22gm 28 = 28gm</p> <p>Other Mass Available</p>	<p><b>Code • Shape</b> SQ = Square R = Rectangle C = Cylindrical T = Toroid Z = Custom</p>	<p><b>Code Size</b> 37.5X = 37.5mm SQ</p> <p>Other Sizes Available</p>	<p><b>Code Height</b> 4.0 = 4.0mm 4.5 = 4.5mm 5.0 = 5.0mm 7.5 = 7.5mm 8.0 = 8.0mm 9.0 = 9.0mm 13 = 13mm</p> <p>Other Sizes Available</p>	<p><b>Code Version</b> A Standard</p> <p>Other Version Available</p>

## ORDER NUMBER

<u>1</u>	<u>3</u>	<u>013</u>	<u>2</u>
DESCRIPTION	Mount syle	Mass (gram) 9 = Decimal	Option Code
<p><b>Code • Description</b>  1 = Filled PID 5 = Eng Dev Kit 7 = Empty Pkg</p>	<p><b>Code • Description</b> 2 = Screw (S) 3 = Glue (A) 9 = Custom 0 = Master DWG</p>	<p><b>Code • Grams</b> 990 = 9.0gm 012 = 12gm 013 = 13gm 015 = 15gm 018 = 18gm 022 = 22gm 028 = 28gm</p>	<p>1 Version A 2 Version B 3 Version C ... 9 Version J</p>

<b>TopLine®</b>			
TITLE EL-SQ37.5-BA PID VIBRATION DAMPER			
SCALE NONE	SIZE A	DRAWING NO. 703727	REV A
DO NOT SCALE DRAWING		SHEET 3 OF 4	

## U.S. PATENTS PARTICLE IMPACT DAMPERS

	U.S. PATENT NBR	GRANTED	TITLE
1	9,521,753	2016	Vibration damping circuit board assembly
2	10,041,558	2018	Tunable apparatus for adjusting effective performance of particle impact damper
3	10,021,779	2018	Quick response particle damper for printed circuit boards and planar surfaces
4	D842351	2019	Toroidal shaped particle impact damper
5	10,704,639	2020	Unidirectional particle damper for printed circuit boards and planar surfaces

## U.S. PATENTS REGISTERED TRADEMARKS

REGISTRATION	GRANTED	MARK	GOODS & SERVICES
5,469,015	2018	Inspired by Gravity®	Class 9. Electronic components namely particle impact dampers for attenuating vibration in printed circuit boards and mechanical assemblies

**TopLine®**

TITLE EL-SQ37.5-BA  
PID VIBRATION DAMPER

SCALE NONE	SIZE A	DRAWING NO. 703727	REV A
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DO NOT SCALE DRAWING

SHEET 4 OF 4