Accelerator Pedal Assembly

Series 552

Features

- Robust design for extended durability in harsh environments
- Automotive design and process validated; PPAP qualified
- Resistant to effects of fluid intrusion and stray electromagnetic fields
- Contacting type sensor to determine rotational position of pedal
- Dual output signals for increased reliability
- Immune to electromagnetic interference
- Proven automotive expertise with more than 150 million pedal units delivered

Applications

- Automotive
- Industrial
- Off-Road & Construction
- Agriculture
- Recreational

Description

The series 552 is used in vehicle applications that require precise control of acceleration. The accelerator pedal transfers linear movement of the foot on the pedal pad to an acceleration command for the vehicle through a linear voltage change, similar to a potentiometer. The device provides redundant output in order to increase the product reliability. CTS offers eight different pedal configurations of varying size to cover customers' packaging requirements. The series 552 is designed and developed to meet the demanding automotive durability and performance requirements.

Durability and Environmental Testing

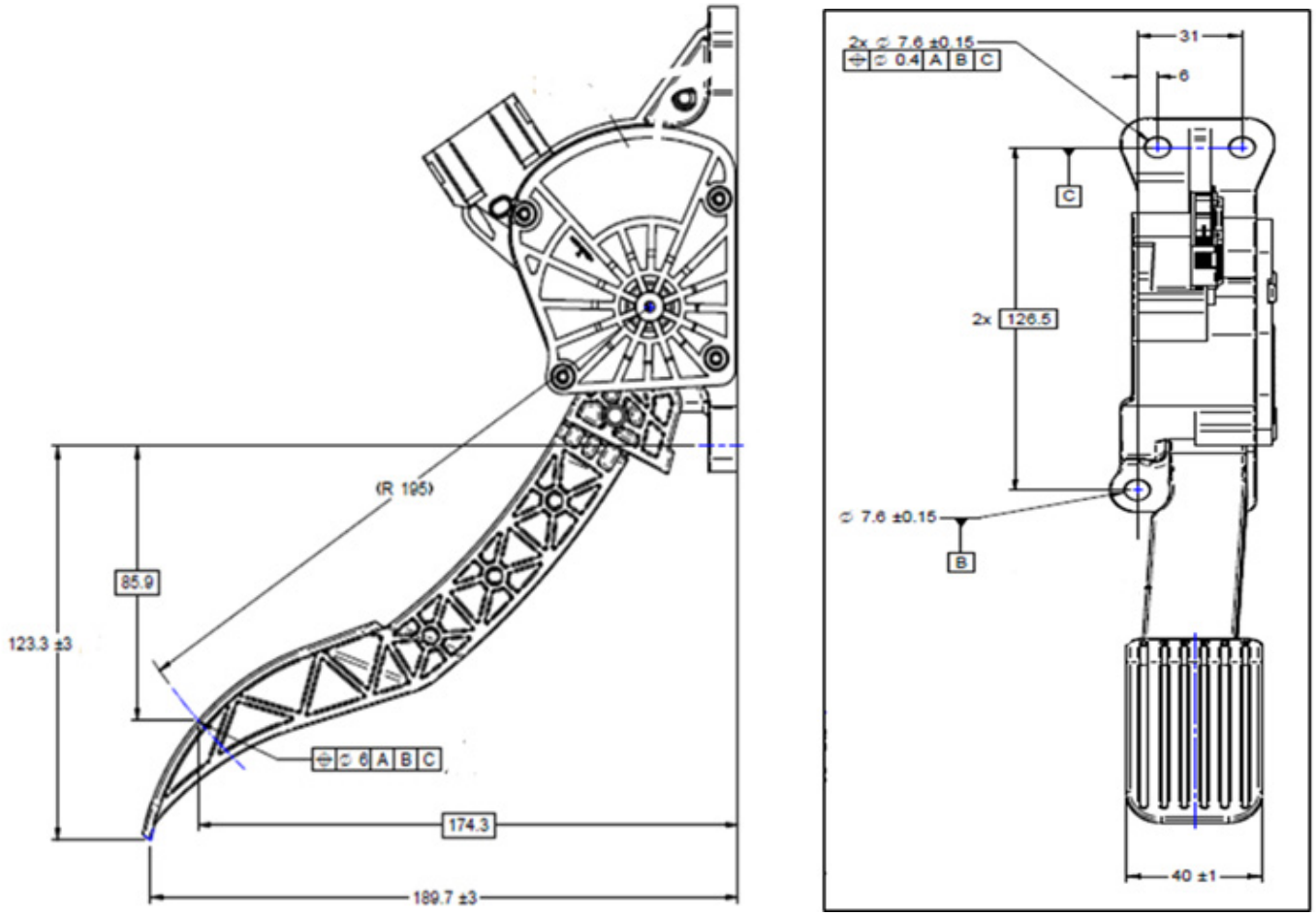
Parameter	Performance
Vibration	105 Hours, 3 Planes, 20-200 Hz
Full Stroke Cycling	3 Million Cycles, Temperature Cycles from -40°C to +85 °C
Humidity Cycling	240 Hours, RH Cycling from 0-95%
Thermal Shock	1000 Cycles, -40°C to +85 °C, 20 Minute Dwells, 60 Second Transition Time
Dust Exposure	BG4208 Test, IP5K4 Resistance Class
Salt Fog	ASTM B117, 96H

Functional Specifications

<table>
<tr><th>Parameter</th><th>Unit</th><th>Value</th></tr>
<tr><td>Operating Temperature</td><td>°C</td><td>-40 to +85</td></tr>
<tr><td>Weight</td><td>g</td><td>≤350</td></tr>
<tr><td>Working Angle</td><td>°</td><td>12.6 / 14</td></tr>
<tr><td>Working Voltage</td><td>V</td><td>5 (±0.3)</td></tr>
<tr><td>Working Current</td><td>mA</td><td>≤20</td></tr>
<tr><td>Output Pull-Down Resistor</td><td>Ω</td><td>≥330000</td></tr>
<tr><td>Output Options
(% of Supply Voltage)</td><td>-</td><td>
<table>
<tr><td>Angle</td><td colspan="2">12.6° / 14°</td></tr>
<tr><td>Position</td><td>Idle</td><td>Full Travel</td></tr>
<tr><td>SIG1</td><td>15% (±2%)</td><td>82% (±4%)</td></tr>
<tr><td>SIG2</td><td>7.5% (±1%)</td><td>41% (±2%)</td></tr>
</table>
</td></tr>
<tr><td>Linearity</td><td>%</td><td>±3</td></tr>
<tr><td>Correlation (SIG1 - (2*SIG2))</td><td>%</td><td>≤2.8</td></tr>
<tr><td>Idle Force (Pressing)</td><td>N</td><td>20 (±5)</td></tr>
<tr><td>Full Travel Force (Pressing)</td><td>N</td><td>33 (±5)</td></tr>
<tr><td>Minimum Force (Releasing)</td><td>N</td><td>≥5</td></tr>
</table>

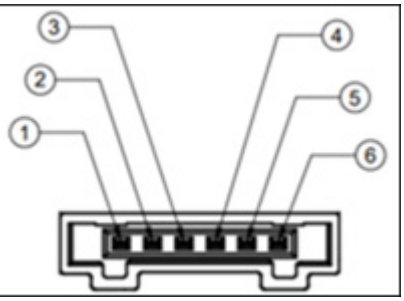
- Linearity: Measure of the actual signal vs. a perfect signal across the length of a pedal's travel.
- Correlation: Two signals are compared to validate the quality of the pedal outputs.

Dimensions - 1 of 8 Available Design Options (552-99-010)



Mating Connector Type: 3B0972706

1	SUPPLY PPS2
2	SUPPLY PPS1
3	GROUND PPS1
4	OUTPUT PPS1
5	GROUND PPS2
6	OUTPUT PPS2



Pre-Packaged Series 552 Variants

Part Number	Pedal Radius	Full Pedal Travel (FPT)	Output @Idle	Output @FPT	Force @P1	Force @P2
552-99-002	196mm	12.6°	15%	82%	19N	30.8N
552-99-003	205mm	12.6°	15%	82%	18.3N	29.6N
552-99-004	225.5mm	12.6°	15%	82%	16.8N	27.2N
552-99-006	189.5.mm	12.6°	15%	82%	19.6N	31.8N
552-99-007	201.4mm	12.6°	15%	82%	18.6N	30.1N
552-99-005	168mm	14°	15%	82%	20.5N	30N
552-99-009	170mm	14°	15%	82%	20N	29.5N
552-99-010	195mm	14.6°	15%	78.6%	17N	30N