

# 3-Way Power Divider

## 5 - 700 MHz



MAPD-011078  
Rev. V2

### Features

- 3-Way 0-degree
- Surface Mount Technology
- Excellent temperature stability
- RoHS\* Compliant and Pb free
- 260° reflow compatible
- Available on Tape & Reel

### Applications

- CATV
- Broadband
- FTTX

### Description

The MAPD-011078 is a 3-way 0° power divider in a surface mount package.

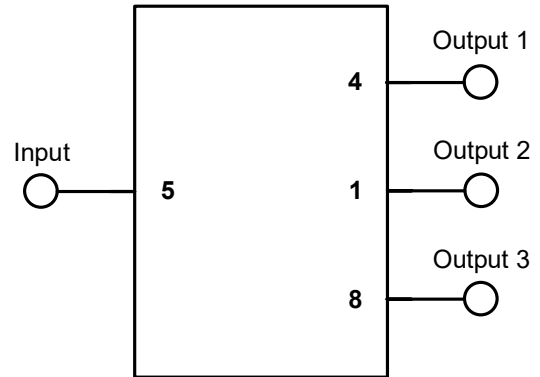
Ideally suited for high volume CATV applications.

### Ordering Information<sup>1,2</sup>

Part Number	Package
MAPD-011078	500 piece reel
MAPD-011078-TB	Sample Test Board

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

### Functional Schematic



### Pin Function<sup>3,4</sup>

Pin #	Function
1	Output 2
2, 3, 6, 7	Ground
4	Output 1
5	Input
8	Output 3

3. MACOM recommends connecting unused package pins to ground.
4. The exposed pad centered on the package bottom must be connected to RF, DC and thermal ground.

\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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**Electrical Specifications: Freq. = 5 - 700 MHz, T<sub>A</sub> = +25°C, P<sub>IN</sub> = 0 dBm, Z<sub>0</sub> = 75 Ω**

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
3 way split reference value	-	dB	-	4.77	-
Insertion Loss 1 (pin 5 - pin 4) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.3 0.5 1.0	0.6 0.7 1.6
Insertion Loss 2 (pin 5 - pin 1) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.3 0.4 0.8	0.5 0.6 1.4
Insertion Loss 3 (pin 5 - pin 8) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.4 0.6 1.1	0.6 0.7 1.7
Input Return Loss (pin 5)	5 - 300 300 - 700	dB	20 15	30 22	-
Output 1 Return Loss (pin 4)	5 - 20 20 - 700	dB	17 20	22 25	-
Output 2 Return Loss (pin 1)	5 - 20 20 - 700	dB	17 20	22 28	-
Output 3 Return Loss (pin 8)	5 - 20 20 - 600 600 - 700	dB	17 20 19	22 28 23	-
Isolation	5 - 700	dB	28	22	-
Amplitude Balance 1 - 2 (pin 5 - pin 4)	5 - 300 300 - 700	dB	-	0.1 0.3	±0.2 ±0.5
Amplitude Balance 1 - 3 (pin 5 - pin 1)	5 - 300 300 - 700	dB	-	0 0.1	±0.2 ±0.5
Amplitude Balance 2 - 3 (pin 1 - pin 8)	5 - 300 300 - 700	dB	-	0.1 0.2	±0.2 ±0.5
Phase Balance 1 - 2 (pin 5 - pin 4)	5 - 300 300 - 700	degrees	-	2 6	±5 ±9
Phase Balance 1 - 3 (pin 5 - pin 1)	5 - 300 300 - 700	degrees	-	1 2	±5 ±8
Phase Balance 2 - 3 (pin 1 - pin 8)	5 - 300 300 - 700	degrees	-	2 6	±5 ±11

### Recommended Maximum Ratings<sup>5,6</sup>

Parameter	Units
Input Power	1 W
Operating Temperature	-40°C to +85°C

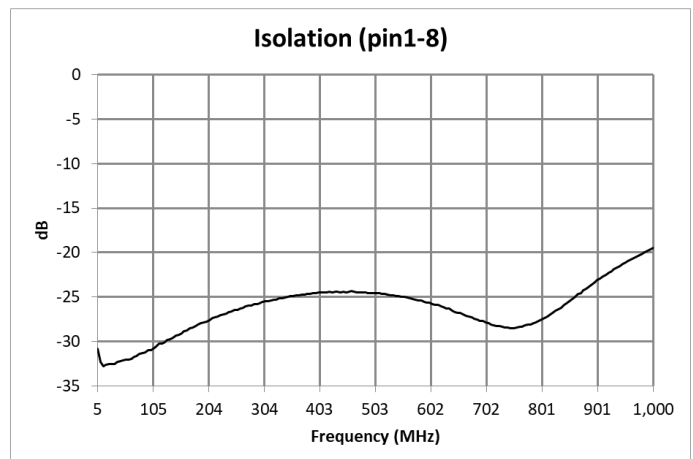
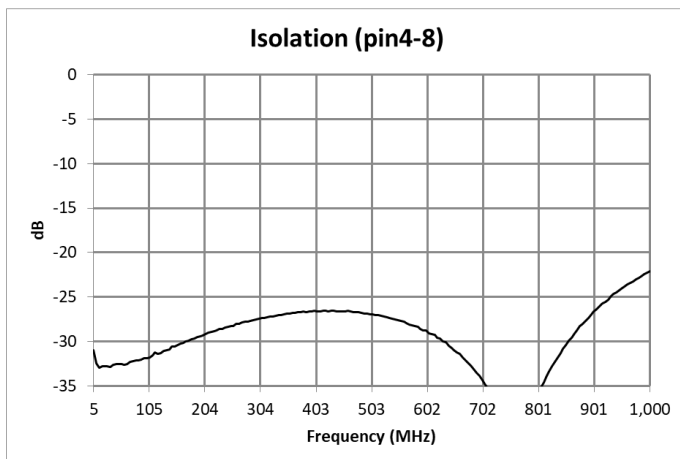
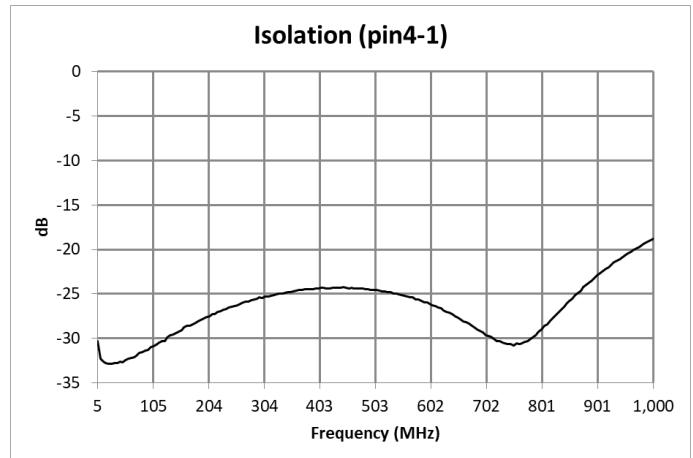
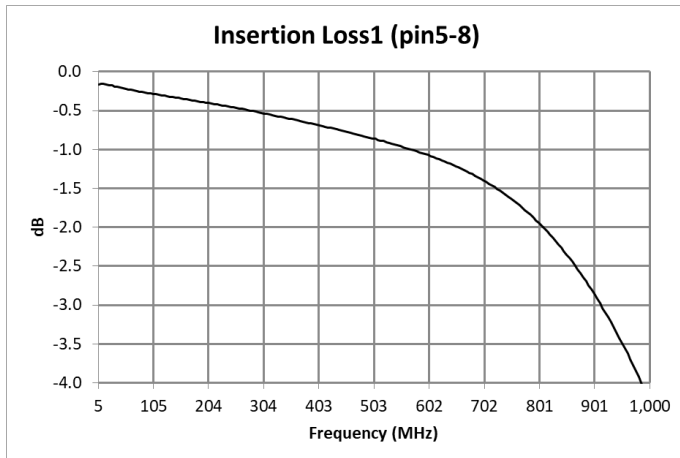
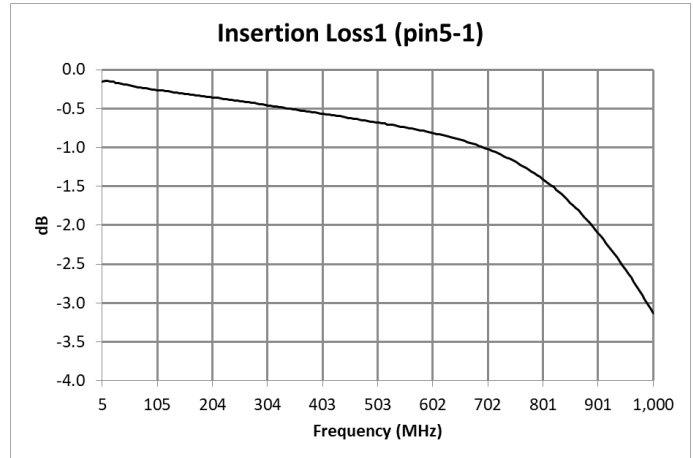
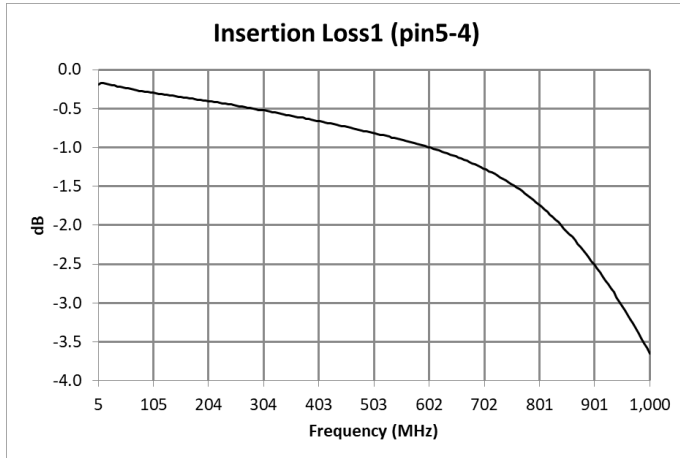
- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

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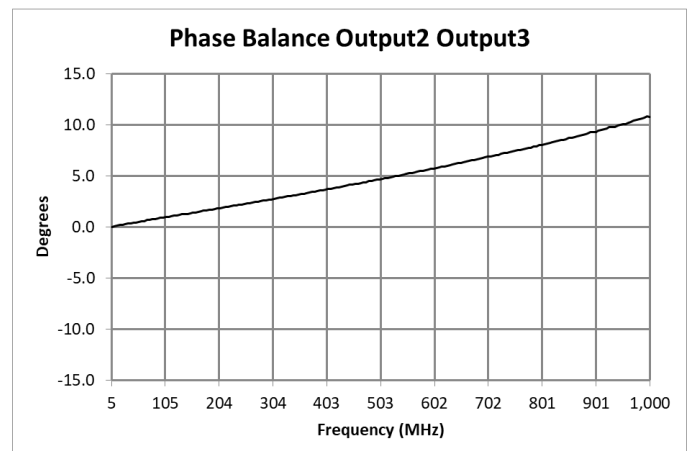
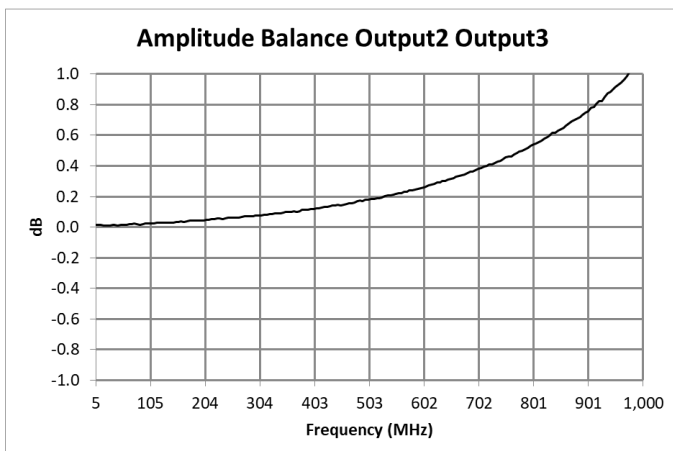
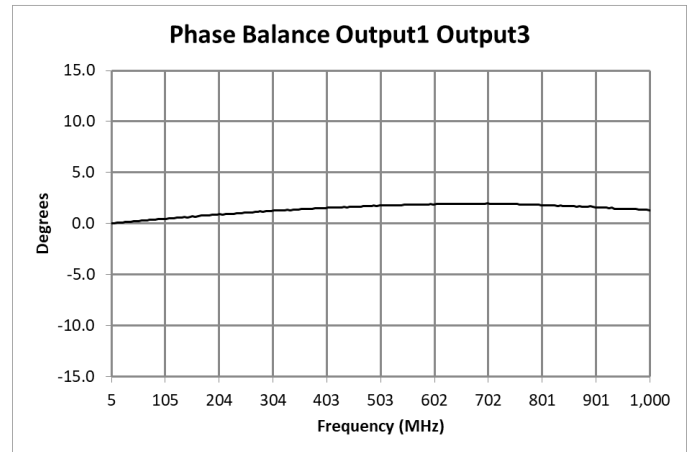
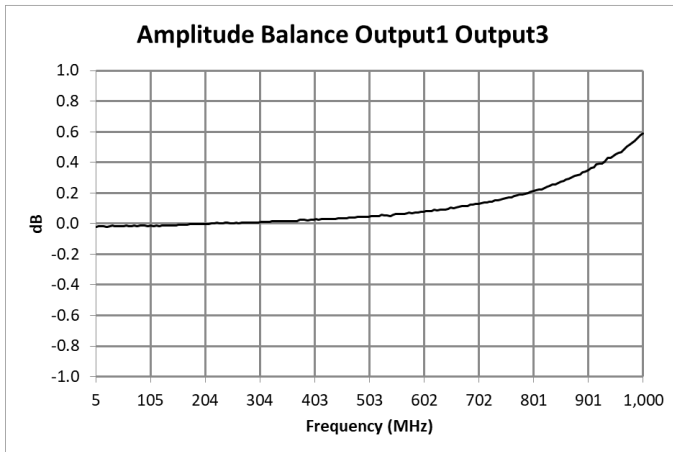
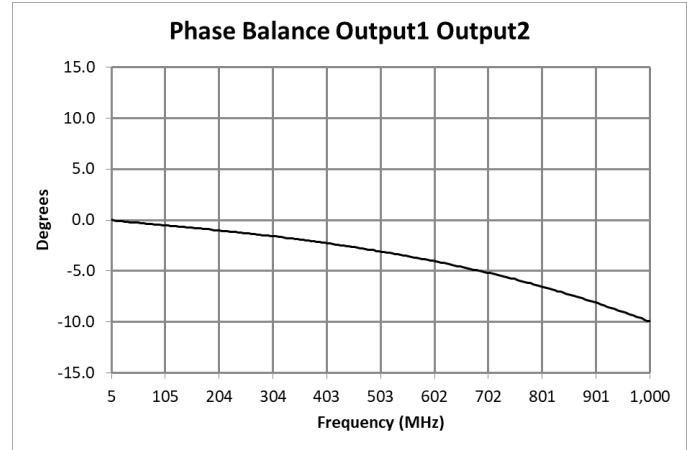
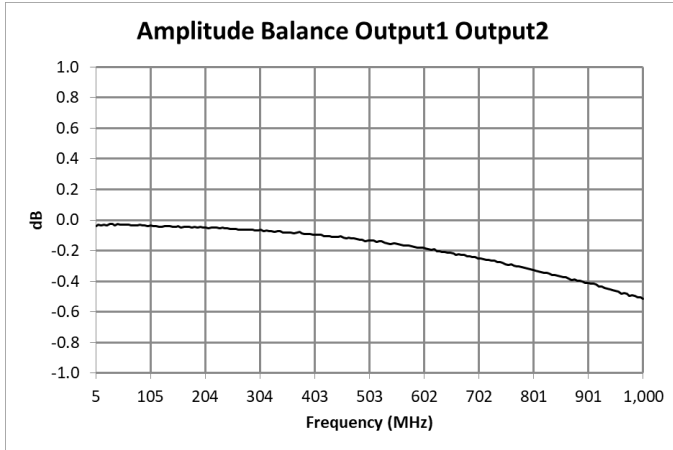


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## Typical Performance Curves



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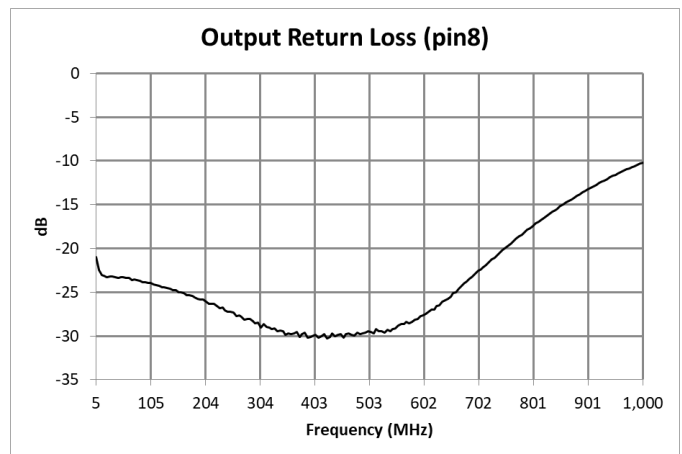
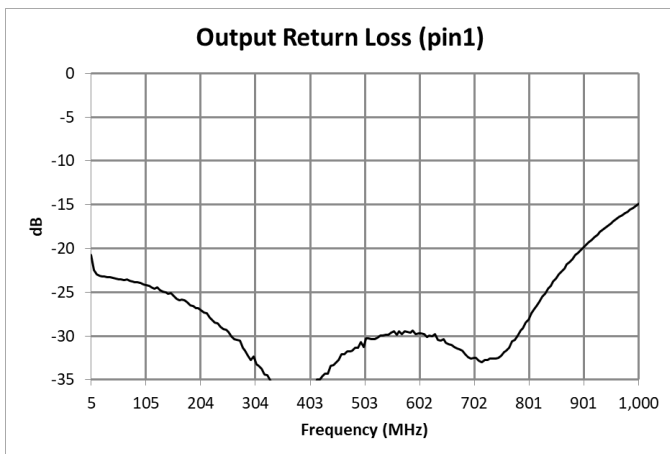
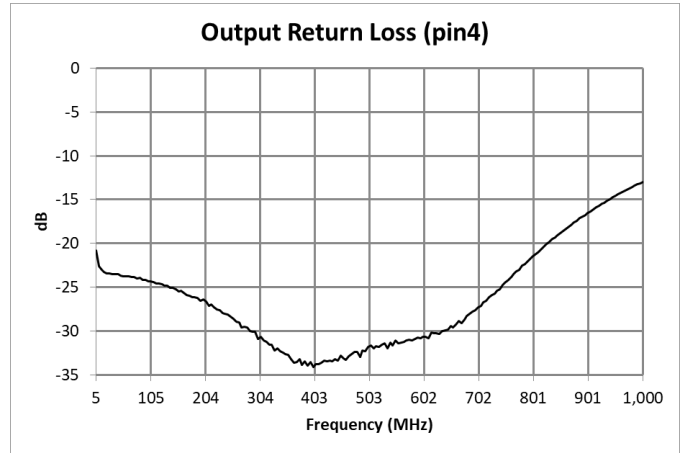
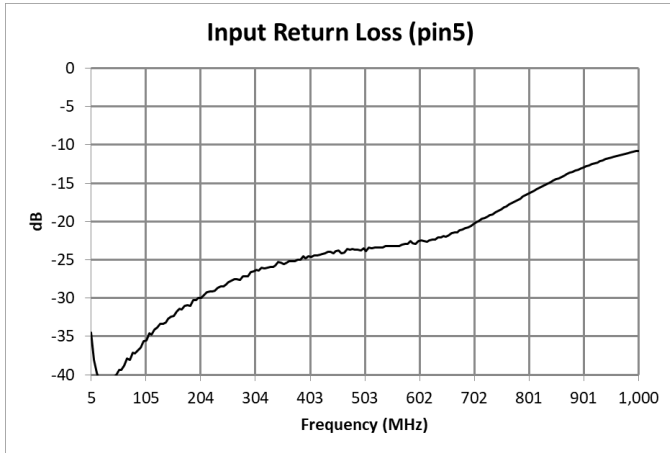


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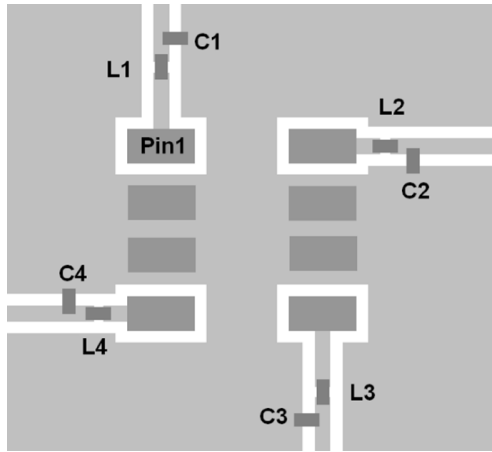


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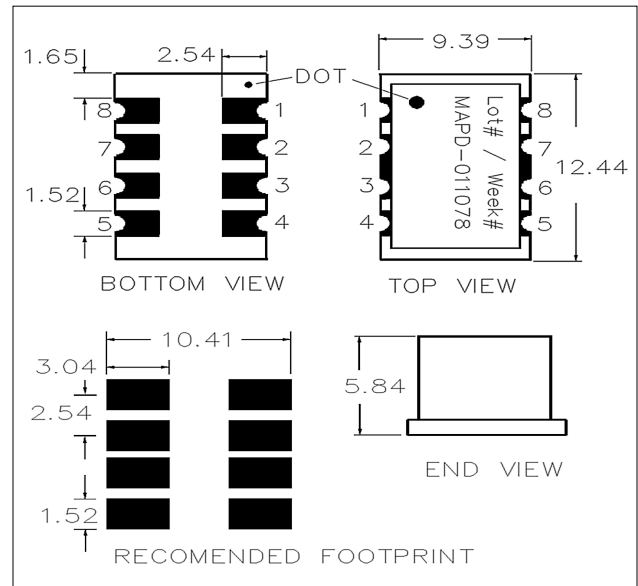


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## Recommended PCB Footprint



## Outline Drawing<sup>4,5,6,7,8,9</sup>

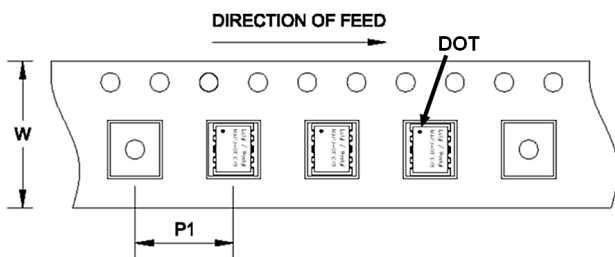


## External SMT Values

Component	Units	Value
C1	-	Not used
C2, C3, C4	pF	1.2
L1	nH	3.3
L2	nH	10
L3	nH	8.2
L4	nH	12

- Dimensions in mm.
- Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- Model number and lot code are printed on the reel.
- Lead plating: ENIG.
- Reference Application Note J-STD-020E for lead-free solder reflow recommendations.
- Meets JEDEC moisture sensitivity level 1 requirements.

## Carrier Tape Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	500
Reel Size	mm	330
Tape Width	mm	24
Pitch	mm	16
Orientation	-	F2
Reference Application Note ANI-019 for orientation		

## Revision History

Rev	Date	Change Description
V1	2023-June-28	Correct L1&L3, Production Release V1
V2	2024-Sep-6	Correct "External SMT Values" table on page 6. Component "Not used" was: "C3", Is: "C1".

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