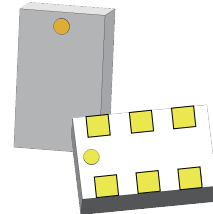


Description

The PD70T03 is a low profile, sub-miniature Wilkinson power divider in an easy to use surface mount package. The PD70T03 is ideal for high volume manufacturing and delivers higher performances than traditional printed and lumped element solutions. The PD70T03 is matched to 50Ω and has a height profile of 0.5 mm which is ideal for high level integrations in the following markets: RFID, fixed satellite, and mobile satellite. The PD70T03 does not include the resistive element and therefore requires an external on resistor for operation. The PD70T03 is available on tape and reel for high volume manufacturing pick and place.



Features:

- 6000-8000MHz
- 15dB Isolation (output ports)
- Good Return loss
- 0.5mm Height Profile
- 50Ω Outputs/Inputs
- Low Insertion Loss
- Surface Mountable
- Tape & Reel
- Non-conductive Surface
- RoHS Compliant
- Halogen Free

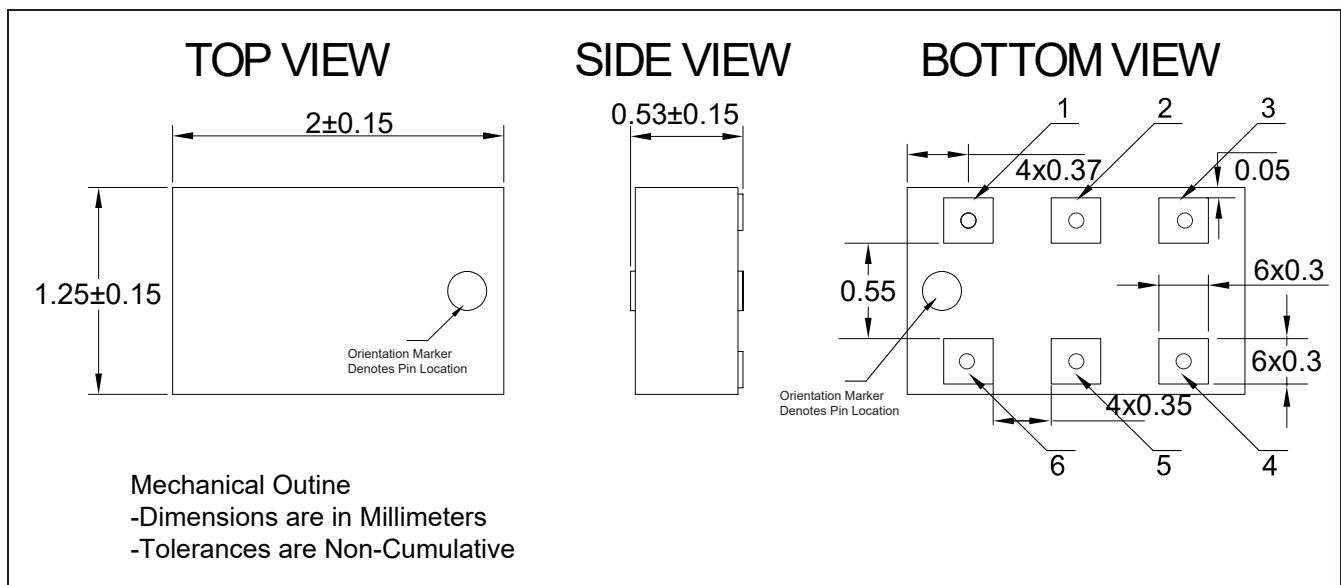
Electrical Specifications

Frequency	Isolation	Insertion Loss	Return Loss
MHz	Min 7.0dB	Typ 0.6 dB	Min 6dB
6000-8000	Typ 10dB	Max 0.9dB	Typ 10dB
Amplitude Balance	Phase Balance	Power	Operating Temp.
	Degrees	Avg. CW Watts at 105°C	°C
Typ 0.2 dB	Typ 2	2	-55 to +105
Max 0.5dB	Max 5		

Notes:

1. All the above data are based on specified demo board.
2. Insertion loss: Thru board loss has been removed.
3. The part cannot be used near the shielding case.

Mechanical Outline



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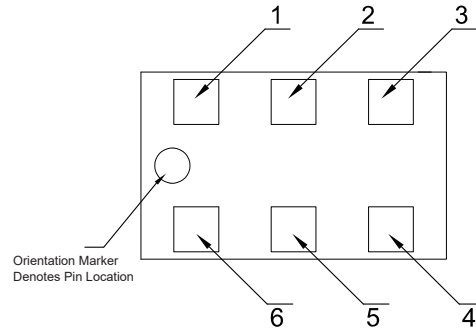
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Hybrid Coupler Pin Configuration

The PD70T03 has an orientation marker to denote Pin1. Once port one has been identified the other ports are known automatically. Please see the chart below for clarification:



Pin	Designation
1	GND
2	input
3	GND
4	Output 1
5	GND
6	Output 2

Typical Performance Data (@25°C)

Frequency (MHz)	S12 (dB)	S13 (dB)	Insertion Loss (dB)	S23 (dB)	Amplitude Balance (dB)	Phase (degree)	Return Loss(dB)		
							S11	S22	S33
6000	-3.37	-3.27	-0.32	-15.16	-0.10	-1.21	-16.27	-11.01	-11.08
6100	-3.36	-3.25	-0.31	-14.43	-0.10	-1.20	-16.76	-10.80	-10.85
6200	-3.35	-3.25	-0.30	-13.78	-0.10	-1.19	-17.39	-10.59	-10.58
6300	-3.34	-3.25	-0.29	-13.14	-0.09	-1.12	-18.03	-10.38	-10.34
6400	-3.32	-3.25	-0.29	-12.57	-0.08	-1.12	-18.81	-10.18	-10.08
6500	-3.31	-3.25	-0.28	-12.07	-0.06	-1.04	-19.64	-9.96	-9.81
6600	-3.30	-3.26	-0.28	-11.59	-0.04	-0.97	-20.71	-9.74	-9.53
6700	-3.29	-3.27	-0.28	-11.16	-0.02	-0.97	-21.91	-9.51	-9.22
6800	-3.29	-3.28	-0.28	-10.76	-0.01	-0.97	-23.22	-9.27	-8.94
6900	-3.29	-3.29	-0.29	-10.38	0.00	-0.98	-24.75	-9.01	-8.66
7000	-3.28	-3.30	-0.29	-10.05	0.01	-1.00	-27.04	-8.77	-8.35
7100	-3.29	-3.30	-0.29	-9.70	0.02	-1.10	-29.34	-8.53	-8.09
7200	-3.28	-3.31	-0.30	-9.40	0.02	-1.09	-30.39	-8.28	-7.81
7300	-3.27	-3.32	-0.29	-9.10	0.05	-1.07	-28.77	-8.02	-7.56
7400	-3.27	-3.34	-0.30	-8.81	0.07	-1.13	-26.57	-7.80	-7.31
7500	-3.27	-3.36	-0.31	-8.52	0.09	-1.12	-24.56	-7.57	-7.08
7600	-3.26	-3.38	-0.32	-8.24	0.11	-1.21	-23.22	-7.36	-6.88
7700	-3.26	-3.39	-0.33	-8.01	0.13	-1.24	-21.85	-7.14	-6.65
7800	-3.27	-3.39	-0.33	-7.80	0.13	-1.30	-20.76	-6.94	-6.47
7900	-3.28	-3.40	-0.34	-7.62	0.12	-1.44	-19.99	-6.77	-6.28
8000	-3.29	-3.41	-0.35	-7.44	0.12	-1.56	-19.36	-6.60	-6.13

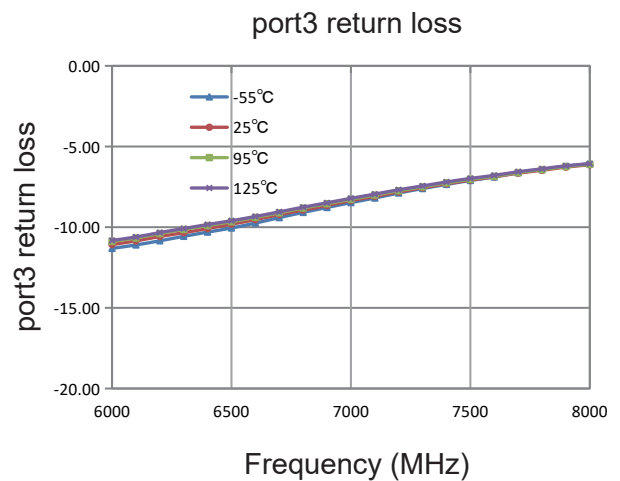
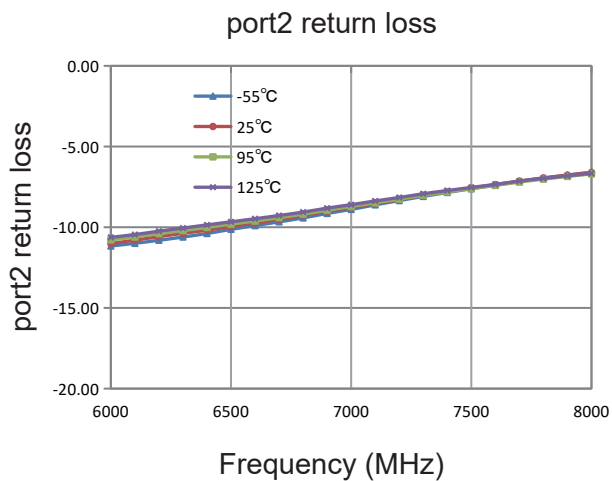
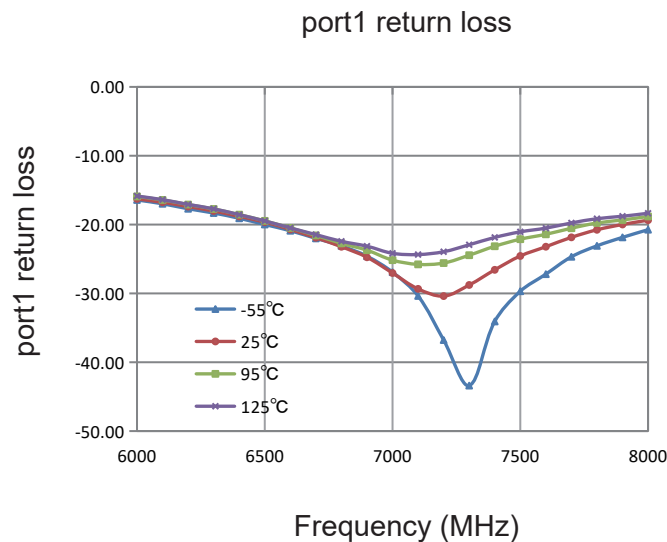
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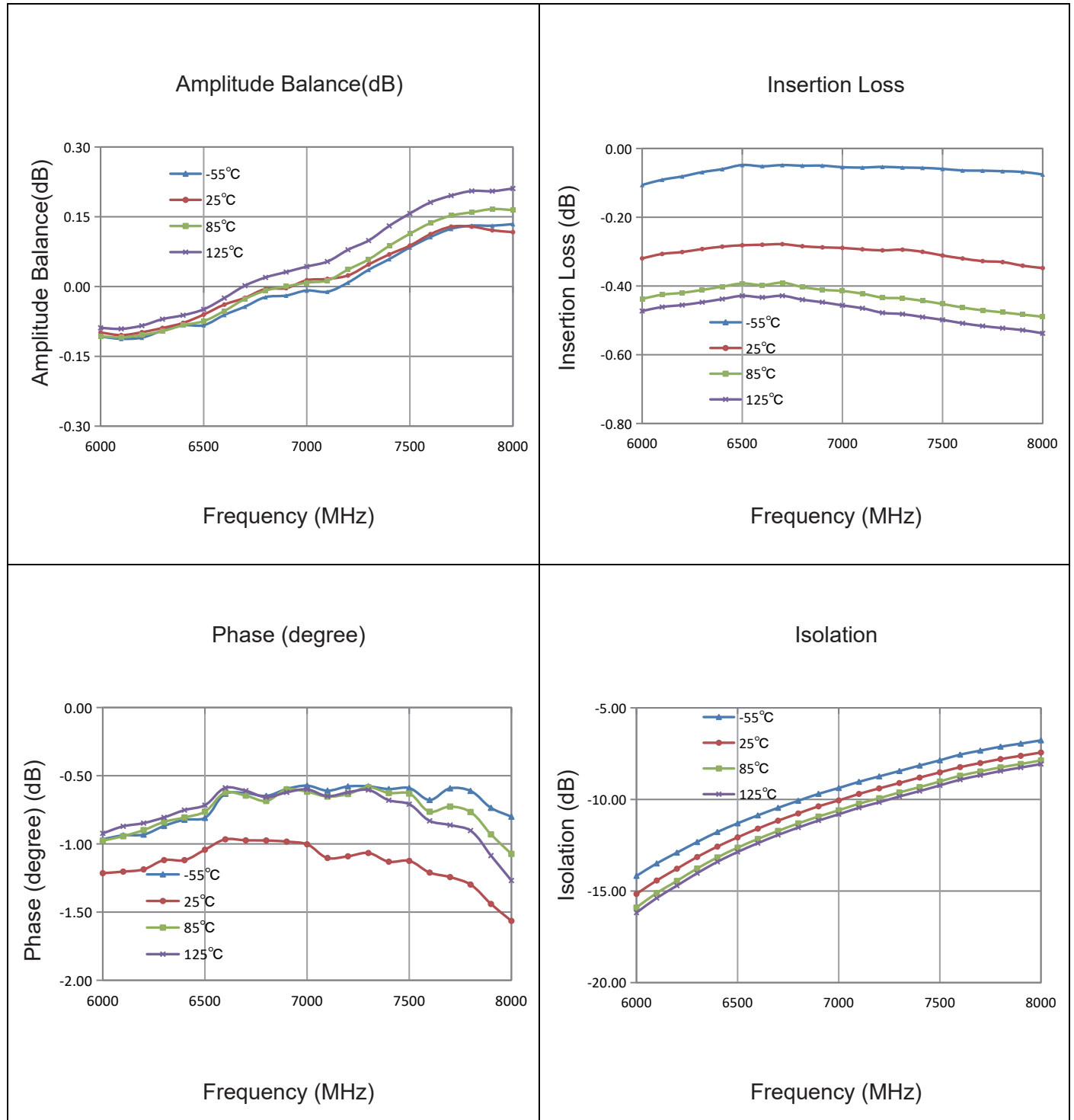
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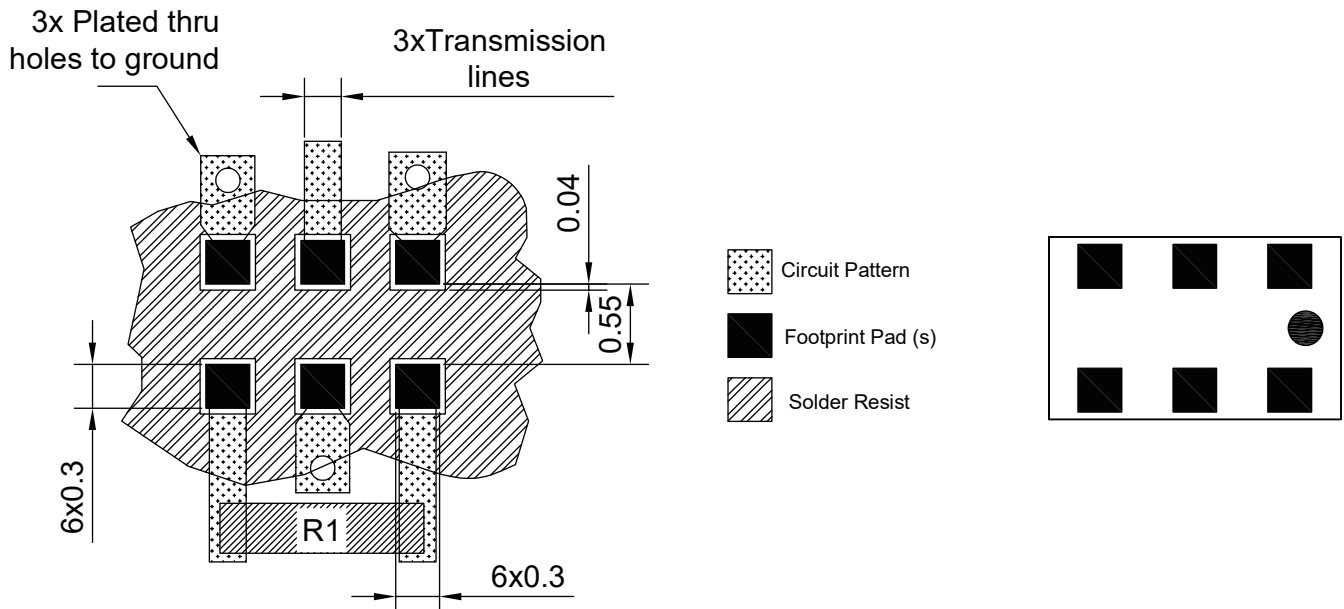
Typical Performance (-55°C, 25°C, 95°C, 125°C: 6000-8000 MHz)



Typical Performance (-55°C, 25°C, 95°C, 125°C: 6000-8000 MHz)



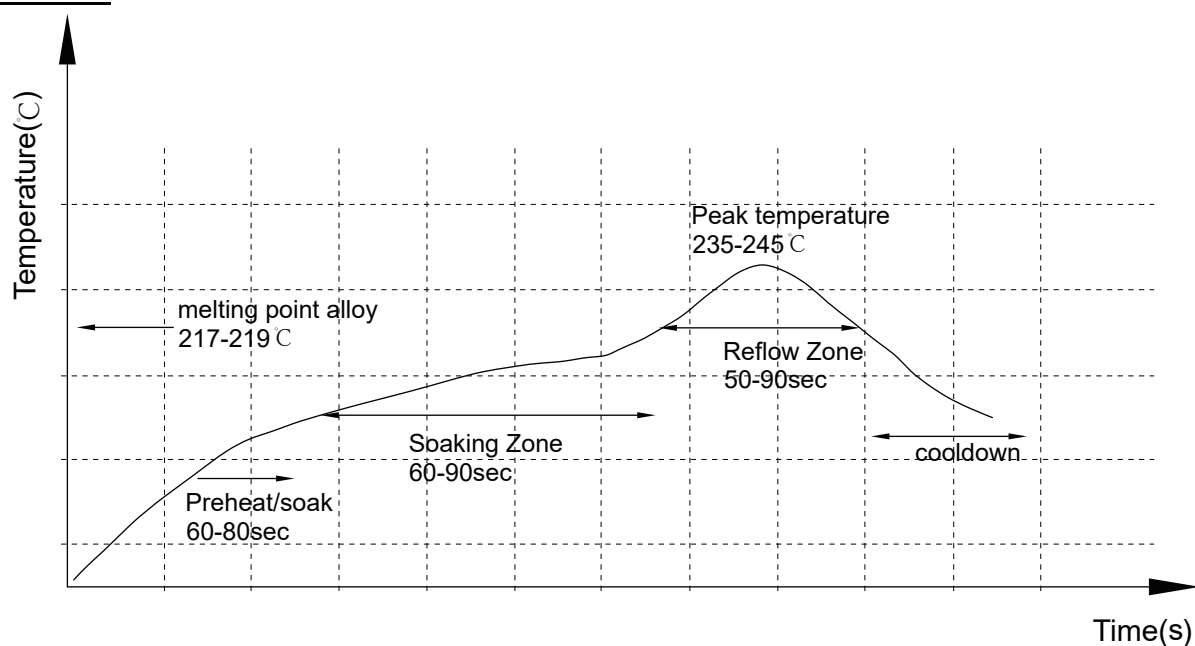
Recommended PCB Layout



NOTE:

1. 50Ω line width is shown above designing.
2. Bottom side of the PCB is continuous ground plane.
3. All dimensions shown in mm [inch].

Reflow Profile



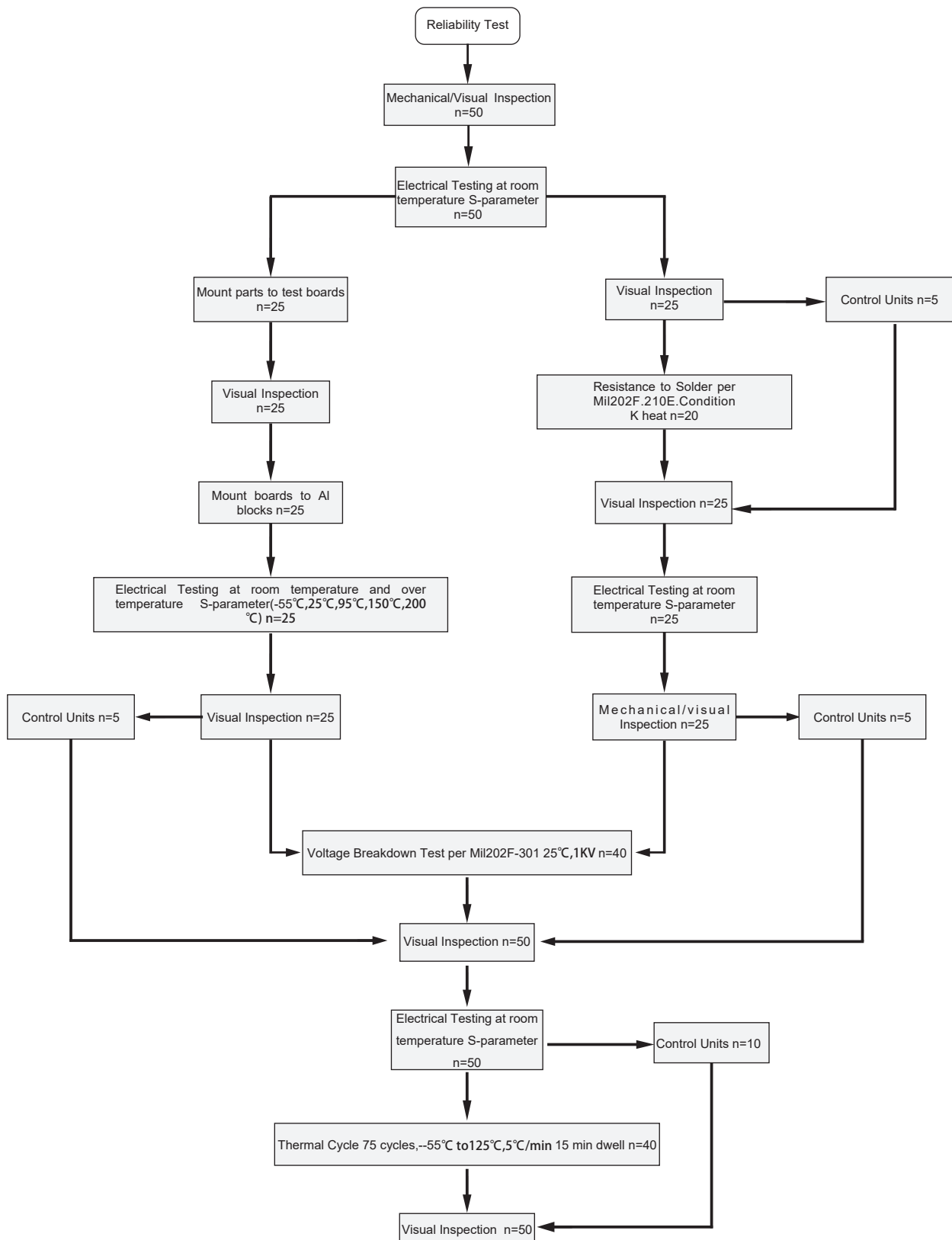
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Reliability Test Flow



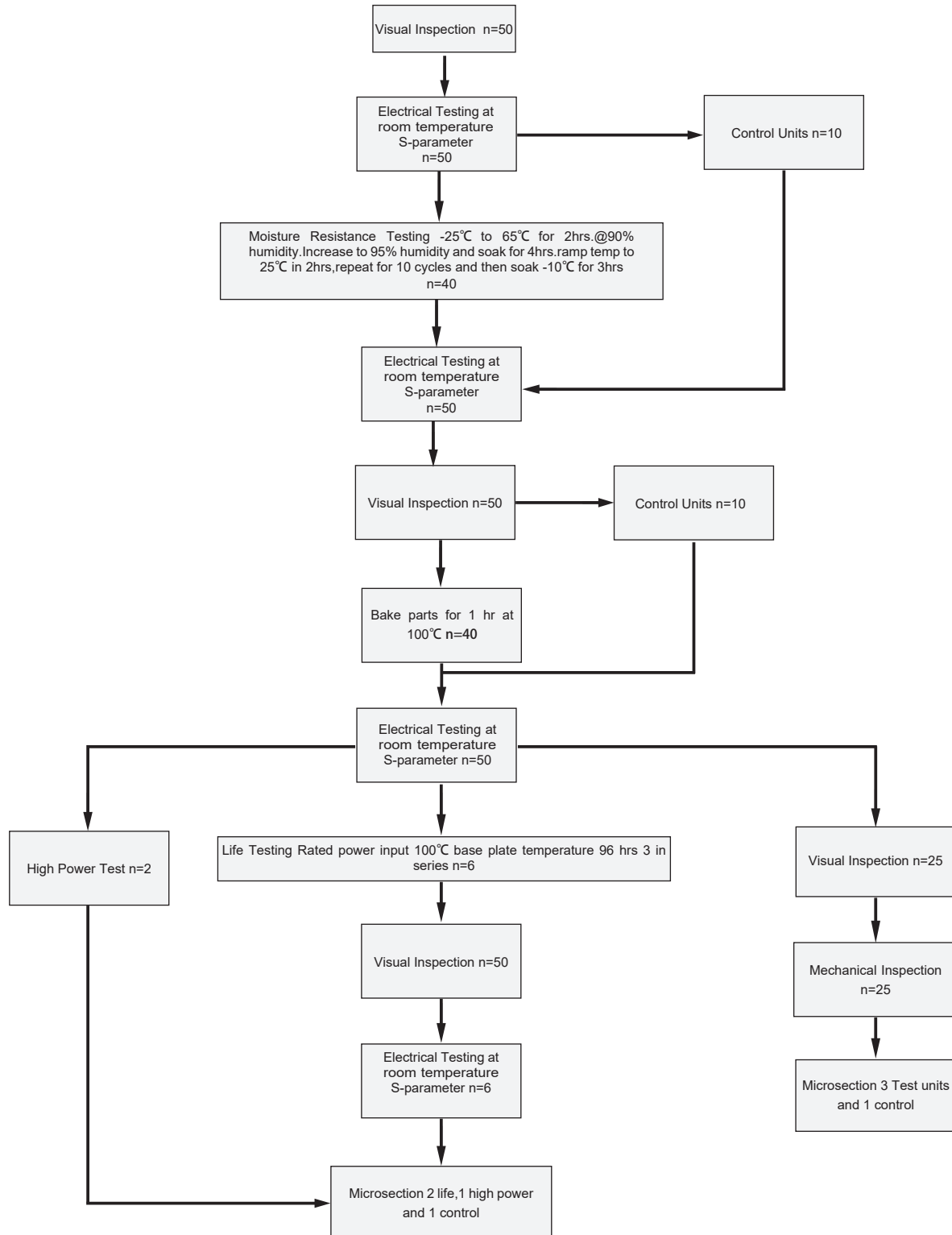
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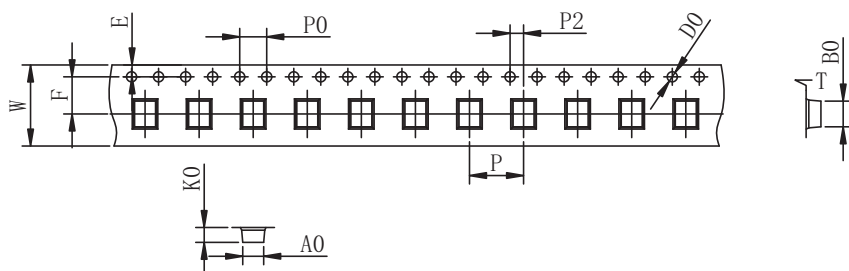
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Reliability Test Flow



Tape and Reel Drawing

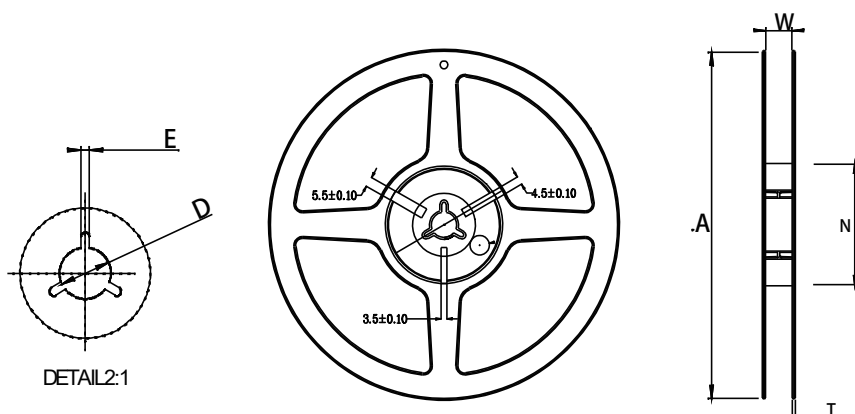
Feeding Direction



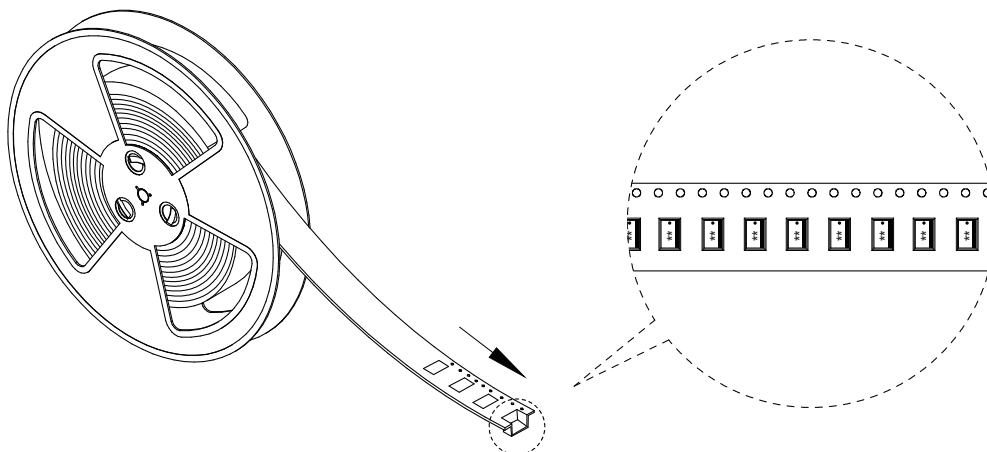
ITEM	W	A0	B0	K0	K1	P	F	E	D0	P0	P2	t	7"
DIM(mm)	8.0	1.45	2.30	1.00		4.0	3.5	1.75	1.5	4.0	2.0	0.2	P/R
TOLE	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.00	+0.10 -0.10	+0.10 -0.10	+0.05 -0.05	5000pcs

Notice:

- A. 10 Sprocket hole pitch cumulative tolerance is 0.2mm.
- B. Carrier camber shall be not more than 1mm per 100mm through a length of 250mm.
- C. All dimensions meet EIA-418-B requirements.
- D. A0 & B0 measured as indicated.
- E. K0 measured from a place on the inside bottom of the pocket to top surface of carrier.
- F. Material: PE 100
- G. Thickness: 0.30 ± 0.05 mm
- H. 5000 units (maximum) / T&R



Symbol	Dimensions(mm)
W	9.0 ± 0.4
A	180 ± 0.3
N	60 ± 0.3
T	1.4 ± 0.2
E	3 ± 0.5
D	25 ± 0.8


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