

QUALIFICATION REPORT – ANSI/ESD S20.20 PROTEKTIVE PAK CIRCUIT BOARD SHIPPER

ANSI/ESD S20.20	PROTEKTIVE PAK Test Results	Test Methods
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Surface Resistance (ohms) @ 12% RH, 23°C, 48-72 hours conditioning, N=6 specimens, 100V

Interior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Exterior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Pink foam (if applicable)	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11

Surface Resistance (ohms) @ 50% RH, 23°C, 48-72 hours conditioning, N=6 specimens, 100V

Interior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Exterior	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11
Pink Foam (if applicable)	$\geq 1.0 \times 10^4$ to $< 1.0 \times 10^{11}$	See Table 1	ANSI/ESD STM11.11

Test Equipment (Calibration records and test results are located at the corporate lab (Sanford, NC)):

For Test Method ANSI/ESD STM11.11:

- ETS Controlled Environment Chamber (Model 5532)
- SCS Surface Resistance Meter (Model 770761)
- SCS Concentric Ring Probe (Model 770007)

Table 1: Test Results:

Surface Resistance (ohms), 48-72 hours of conditioning

Specimen	Testing at 12% RH, 23°C			Testing at 50% RH, 23°C		
	Interior	Exterior	Pink Foam	Interior	Exterior	Pink Foam
1	8.34×10^5	8.60×10^5	4.15×10^9	2.52×10^7	6.36×10^5	1.29×10^9
2	1.14×10^6	8.48×10^5	2.41×10^{10}	1.26×10^6	1.30×10^6	8.96×10^8
3	1.86×10^6	4.55×10^5	5.77×10^9	1.60×10^6	1.70×10^6	5.31×10^9
4	1.01×10^6	1.00×10^6	3.79×10^9	1.46×10^6	1.55×10^6	1.04×10^9
5	7.81×10^5	7.55×10^5	4.38×10^9	1.27×10^6	1.25×10^6	1.20×10^9
6	8.43×10^5	8.72×10^5	5.73×10^9	1.48×10^6	2.01×10^6	1.27×10^9
Min Ind=	7.81×10^5	4.55×10^5	3.79×10^9	1.26×10^6	6.36×10^5	8.96×10^8
Max Ind=	1.86×10^6	1.00×10^6	2.41×10^{10}	2.52×10^7	2.01×10^6	5.31×10^9
Mean of Ind=	1.08×10^6	7.98×10^5	7.66×10^9	5.38×10^6	1.41×10^6	1.83×10^9
Std Dev Ind =	4.06×10^5	1.86×10^5	7.94×10^9	9.71×10^6	4.69×10^5	1.71×10^9

PROTEKTIVE PAK

DESCO INDUSTRIES INC

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The qualification report is applicable to below Circuit Board Shipper Sizes:

Item	Contents	Size I.D. - L x W x D		Item	Contents	Size I.D. - L x W x D	
		(Inches)	(mm)			(Inches)	(mm)
37050	Box Only	4 x 4 x 2-1/8 IN	102 x 102 x 54 MM	37066	Box Only	14-7/8 x 6-5/8 x 2 IN	378 x 168 x 51 MM
37051	Box w/ Foam	4 x 4 x 2-1/8 IN	102 x 102 x 54 MM	37067	Box w/ Foam	14-7/8 x 6-5/8 x 2 IN	378 x 168 x 51 MM
37080	Box Only	6-3/16 x 6 x 1-1/2 IN	157 x 152 x 38 MM	37068	Box Only	15-1/2 x 12-1/2 x 1-1/2 IN	394 x 267 x 38 MM
37081	Box w/ Foam	6-3/16 x 6 x 1-1/2 IN	157 x 152 x 38 MM	37069	Box w/ Foam	15-1/2 x 12-1/2 x 1-1/2 IN	394 x 267 x 38 MM
37052	Box Only	7 x 5 x 1-1/2 IN	178 x 127 x 38 MM	37070	Box Only	15-1/2 x 12-1/2 x 2-1/2 IN	394 x 267 x 64 MM
37053	Box w/ Foam	7 x 5 x 1-1/2 IN	178 x 127 x 38 MM	37071	Box w/ Foam	15-1/2 x 12-1/2 x 2-1/2 IN	394 x 267 x 64 MM
37054	Box Only	7 x 5 x 2-1/2 IN	178 x 127 x 64 MM	37072	Box Only	16 x 12-1/4 x 3-1/2 IN	406 x 311 x 89 MM
37055	Box w/ Foam	7 x 5 x 2-1/2 IN	178 x 127 x 64 MM	37073	Box w/ Foam	16 x 12-1/4 x 3-1/2 IN	406 x 311 x 89 MM
37082	Box Only	7 x 7 x 1-1/2 IN	178 x 178 x 38 MM	37086	Box Only	16 x 15 x 3 IN	406 x 381 x 76 MM
37083	Box w/ Foam	7 x 7 x 1-1/2 IN	178 x 178 x 38 MM	37087	Box w/ Foam	16 x 15 x 3 IN	406 x 381 x 76 MM
37056	Box Only	9 x 7-1/2 x 2-1/2 IN	229 x 191 x 64 MM	37074 •	Box Only	18-7/8 x 17-5/8 x 1-3/4 IN	479 x 448 x 44 MM
37057	Box w/ Foam	9 x 7-1/2 x 2-1/2 IN	229 x 191 x 64 MM	37075 •	Box w/ Foam	18-7/8 x 17-5/8 x 1-3/4 IN	479 x 448 x 44 MM
37084	Box Only	9 x 9 x 1-1/2 IN	229 x 229 x 38 MM	37088 •	Box Only	19 x 19 x 3 IN	483 x 483 x 76 MM
37085	Box w/ Foam	9 x 9 x 1-1/2 IN	229 x 229 x 38 MM	37089 •	Box w/ Foam	19 x 19 x 3 IN	483 x 483 x 76 MM
37058	Box Only	10-1/2 x 8-1/2 x 1-1/2 IN	267 x 216 x 38 MM	37076 •	Box Only	20-1/2 x 15-1/2 x 1-1/2 IN	521 x 394 x 38 MM
37059	Box w/ Foam	10-1/2 x 8-1/2 x 1-1/2 IN	267 x 216 x 38 MM	37077 •	Box w/ Foam	20-1/2 x 15-1/2 x 1-1/2 IN	521 x 394 x 38 MM
37060	Box Only	10-1/2 x 8-1/2 x 2-1/2 IN	267 x 216 x 64 MM	37078	Box Only	20-1/2 x 15-1/2 x 2-1/2 IN	521 x 394 x 64 MM
37061	Box w/ Foam	10-1/2 x 8-1/2 x 2-1/2 IN	267 x 216 x 64 MM	37079	Box w/ Foam	20-1/2 x 15-1/2 x 2-1/2 IN	521 x 394 x 64 MM
37062	Box Only	12-1/2 x 10-1/2 x 1-1/2 IN	318 x 267 x 38 MM	37090 •	Box Only	22 x 15 x 3 IN	559 x 381 x 76 MM
37063	Box w/ Foam	12-1/2 x 10-1/2 x 1-1/2 IN	318 x 267 x 38 MM	37091 •	Box w/ Foam	22 x 15 x 3 IN	559 x 381 x 76 MM
37064	Box Only	12-1/2 x 10-1/2 x 2-1/2 IN	318 x 267 x 64 MM	37092 •	Box Only	27-3/8 x 24-3/8 x 4 IN	695 x 619 x 102 MM
37065	Box w/ Foam	12-1/2 x 10-1/2 x 2-1/2 IN	318 x 267 x 64 MM	37093 •	Box w/ Foam	27-3/8 x 24-3/8 x 4 IN	695 x 619 x 102 MM

Dimensional tolerances are +/- 1/8" (3 mm) unless specified

• These items are made to order