

## DFM Checker Feature comparison - Copper Layers (09/2015)

Rule	Layer Type	Check Code	Check type	Option Value	Remarks	Allegro	OrCAD
	S - signal, PP - positive plane, NP - negative plane						
Board Outline Spacing							
	S, PP, NP	CB	Copper to border			Y	Y
				yes/no			
	S, PP, NP	CR	Copper to route			Y	
	S, PP, NP	CT	Copper to mill tab			Y	
Copper Spacing (diff net)							
	S	TT	Track to track		track = cline	Y	Y
	S	TC	Track to copper		copper = shape area	Y	
	S	CC	Copper to copper			Y	
	S	TP	Track to pad			Y	Y
	S	CP	Copper to pad			Y	
Pad Spacing							
	S	FF	Non drilled flashes to all pad types			Y	
	S	CPCP	Pin pad to Pin pad			Y	
	S	SMSM	SMD to SMD			Y	
	S	VV	Via to Via			Y	
	S	LVLV	Laser Via to Laser Via			Y	
	S	THTH	Thru to thru			Y	
	S	SMV	SMD to via			Y	
	S	SMLV	SMD to Laser Via			Y	
	S	SMTH	SMD to thru			Y	
	S	VTH	Via to thru			Y	
	S	LVTH	Laser Via to Thru			Y	
	S	PP	Pad to Pad				Y

Drill Spacing							
	S,PP,NP	UDTHC	Unplated Through Hole to Copper			Y	
	S,PP	UDTHP	Unplated Through Hole to Pad			Y	
	S,PP	UDTHT	Unplated Through Hole to track			Y	
	S, PP, NP	BACKDC	Back Drill to Copper			y	
	S,PP	BACKDP	Back Drill to Pad			Y	
	S,PP	BACKDT	Back Drill to track			Y	
	S, PP, NP	DTHC	Via Drill to Copper			Y	
	S,PP	DTHP	Via Drill to Pad			Y	
	S,PP	DTHT	Via Drill to track			y	
	S, PP, NP	VDC	Via Drill to Copper			Y	
	S,PP	VDP	Via Drill to Pad			Y	
	S,PP	VDT	Via Drill to track			Y	
	S, PP, NP	LVDC	Laser via Drill to Copper			Y	
	S,PP	LVDP	Laser via Drill to Pad			Y	
	S,PP	LVDT	Laser via Drill to track			Y	
	s	PD	Pad to Drill				Y
	S	UDC	Unplated Drills to Copper				Y
	S	DC	Plated Drills to Copper				Y
Annular Ring							
	S, PP	CPD	pin pad to drill			Y	
	S, PP	PRPD	Presfit pin pad to drill			Y	
	S, PP,NP	VD	via to drill			Y	
	S, PP,NP	LVD	Laser via to drill			Y	
	S, PP, NP	BLVD	blind via to drill			Y	
	S, PP, NP	BRVD	buried Via to drill			Y	
	S, PP	PUD	Pad to unplated drill			y	
	NP	PD	Pad to drill			Y	
				yes/no, unit size			
Other							
	S	MT	Minimum track			Y	Y

	S	MP	Minimum pad			Y	Y
	S	RP	Redundant pad			Y	Y
	S	DWOP	Plated drills w/o Pad			Y	Y
	S	PWOD	Pads w/o Drill	yes/no		Y	Y
	S	A	Antenna			Y	Y
	S, PP	MG	Minimum Gap			Y	Y
				y/n			
				y/n			
	S, PP	MW	Minimum Width			Y	
				y/n			
				y/n			
	S, PP	AT	Acid Traps		Uncertain on this value	Y	
	S, PP	CS	Copper slivers		Uncertain on this value	Y	
				Size			
	S	PH	Pin holes			Y	
Negative Plane							
	NP	IT	Isolated Thermal		Uncertain on this value	Y	Y
	NP	ST	Starved Thermal			Y	Y
				y/n, Percentage			
				y/n absolute value			
				qty			

	NP	TC	Thermal Conflict			Y	Y
	NP	TW	Tie width			Y	Y

## DFM Checker Feature comparison - Mask Checks (09/2015)

Rule	Layer Type	Check Code	Check type	Value	Options	Option Value	Remarks	Allegro	OrCAD
	SM - solder mask, PM - paste mask, SS - Silkscreen								
Pad Annular Ring									
	SM	SMDM	SMD to Mask	units size				Y	
	SM	PDPM	Plated Drill to mask	units size				Y	
	SM	UDPM	Unplated Drill to mask	units size				Y	
	SM	UPM	Undrilled pad to mask	units size				Y	
	SM	VPM	Via Pad to Mask	units size				Y	
	SM	LVPM	Laser Via Pad to Mask	units size				Y	
		PM	Pad to Mask	units size					Y
Drill Annular Ring									
	SM	PDTM	Plated Thru Drill to mask	units size				Y	
	SM	UTDM	Unplated Thru Drill to mask	units size				Y	
	SM	VDM	Via Drill to Mask	units size				Y	
	SM	LVDM	Laser Via Drill to Mask	units size				Y	
		DM	Drill to Mask	units size					Y
Spacing									
	SM	MT	Solder Mask to track	units size				Y	Y
	SM	MP	Solder Mask to Pad	units size				Y	
	SM	MC	Solder Mask to Copper	units size				Y	
	SM	MPMP	Mask Pad ro Mask Pad	units size				Y	
	SM	MPMD	Mask Pad ro Mask Draw	units size				Y	
	SM	MDMD	Mask Draw ro Mask Draw	units size				Y	
Missing Mask									
	SM	MMSMD	Missing Mask for SMD					Y	
	SM	MMUP	Missing Mask for Undrilled Pad					Y	
	SM	MMNTH	Missing Mask for Unplated Through Drill					Y	
	SM	MMPTH	Missing Mask for Plated through Drill					Y	
					Ignore Via	y/n		Y	
	SM	MMV	Missing Mask forVia					Y	
	SM	MMLV	Missing Mask for Laser Via					Y	
	SM	MMTP	Missing Mask for Test Point					Y	
		MM	Missing Solder Mask						Y

Extra Mask									
	SM	MSC	Missing Copper						Y
	SM	MSP	Missing Pad						Y
Other									
	SM	MS	Mask Slivers						Y
	SM	SB	Solder Mask Bridge						Y
	SM	PH	Pin Holes						Y
	PM	PT	Extra Paste Mask on through Holes						Y
	PM	MP	missing Paste Mask on SMD Pads						Y
	PM	MS	Missing Soldermask for Paste Mask Pads						Y
	PM	PC	Paste Mask to Copper	units size					Y
	PM	PMPM	Paste Mask to Paste Mask	units size					Y
	PM		Global Fiducials	?			Value not known		Y
	PM	PMMW	Paste Mask Min Width						Y
					Value Units	Size			
					Noise%	percentage			
					Search for necks	y/n			
					Search for Spikes	y/n			
Paste Mask Ratios									
	PM		Stencil Thickness	Units size					Y
	PM	PMPR	Paste Mask Aspect Ratio						Y
					Min Aspect	percent			
	PM	PMPA	Paste Mask Pad Area Ratio						Y
					Min Aspect	percent			
SilkScreen									
	SS	KM	Silkscreen to solder mask	units size					Y
	SS	KW	Minimum Screen width	units size					Y
	SS	SBO	Silkscreen to board outline	units size					Y

## DFM Checker Feature comparison - Other Checks (09/2015)

Rule	Layer Type	Check Code	Check type	Value	Options	Option Value	Remarks	Allegro	OrCAD
	NCD -NC Drill, NCR - NC Route, NL - Netlist, AN - Analysis								
NC Checks	NCD	OH	Overlapping hits					Y	Y
	NCD	CH	Coincident Hits					Y	Y
	NCD	RH	Redundant hits					Y	Y
	NCD	DD	Drill to drill	Units spacing				Y	Y
	NCR	IA	Imploded Arcs					Y	Y
	NCR	IP	Imploded Path					Y	Y
	NCR	TB	Mill Tab Errors					Y	Y
		AR	Aspect Ratio					Y	N
					Board thickness	units thickness			
					Target Spect Ratio	Percent			
Netlist									
	NL		File name					Y	Y
	NL		Netlist type	(IPC-D-356)				Y	Y
	NL		Extract Cam Netlist					Y	Y
					Allow CAM nets w/o Pads			Y	Y
					Allow Single Point CAM Net			Y	Y
					treat Neg Planes as Single CAM net (No Splits)			Y	Y
	NL		Run Netlist Compare					Y	
					Ignore Extra External Nets at CAM Points			Y	Y
					Ignore Missing Nets for CAM Nets			Y	Y
Board Analysis									
	AN		Board Size aspect Ratio					Y	Y
	AN		Board Outline Defined					Y	Y
	AN		Board Size aspect Ratio					Y	Y
Layer Analysis									
	AN		total Layer count					Y	Y
	AN		Positive layer count					Y	Y
	AN		Negative Layer count					Y	Y
	AN		number internal Layers					Y	Y





Net parameters									
	AN		Number of nets					Y	Y