Times Protect® CROSS – REFERENCE

POLYPHASER (PPC)	*Times-Protect*® (TMS)	TIMES-PROTECT® ADVANTAGES	NOTES
AL-LSXM AL-LSXM-MA AL-LSXM-ME	LP-WBX-NFF LP-WBX-NMP LP-WBX-NFF	• White Bronze plated body vs. aluminum housing • Brass connectors vs. aluminum connectors • 20kA maximum surge current rating vs. PPC 10kA • Lower energy and voltage throughput • Higher RF power, 50W vs. 10W • Larger ground surface area for bulkhead mounting and grounding • Weatherization gasket provided for bulkhead mounting • Accommodates LP-BFDN-CW bracket for flange installation	
AL-LSXM-RT-ME	LP-GTV-RTFM	• GTV is bidirectional with DC pass and turn on voltage of 180V • White bronze plated vs. PPC Aluminum • 150 Watts	
BFD BFN	LP-BFDN-CW LP-BFDN-CW	• Brass, White Bronze plated LP-BFDN-CW vs. Aluminum on PPC • The BFD and BFN have different mounting hole patterns • LP-BFDN-CW having identical hole pattern for N and DIN fit	
DSXL (OBS) DSXL-MA (OBS) DSXL-ME (OBS) DSXL-NS DSXL-T-MA	LP-STRH-NFF LP-STRH-NMS LP-STRH-NMP LP-STRH-NFF + N/SMA adapt LP-STRH-NFF + N/TNC adapt	• Broader frequency range (700-2700MHz vs. 800-2300MHz) • Lower energy throughput (700pJ vs. <0.5uJ) • Better PIM <-160dBc at 900/1800/2100MHz vs. non rated • Much higher surge current rating 50kA (as tested) vs. 20KA for PPC • Much higher RF power @ 500W vs. 300W for PPC • Weatherization (body) to IP67 vs. IP65 for PPC	
DSXL-D (OBS) DSXL-D-MA (OBS) DSXL-D-ME (OBS)	LP-STRH-DFF LP-STRH-DMS LP-STRH-DMP	• Broader frequency range (700-2700MHz vs. 800-2300MHz) • Lower energy throughput (700pJ vs. <0.5uJ) • Better PIM <-160dBc at 900/1800/2100MHz vs. non-published • Much higher surge current rating 50kA (as tested) vs. 30KA for PPC • Higher RF power @ 700W vs. 500W for PPC • Weatherization (body) to IP67 vs. IP65 for PPC	
DT-NFF	LP-GTR-NFF-23	• 150V PPC vs. 230V TMS LP-GTR-NFF • Higher power handling • Better IL and RL than PPC • Both N Female connectors elongated vs. PPC • Max surge 20kA vs. PPC 4kA	
DGXZ+06-NFNF-A, and -B DGXZ+06-NFNM-A and -B DGXZ+06-NMNF-A and -B DGXZ+06TFTF-A No equivalent No equivalent No equivalent	LP-GPX-05-NFF LP-GPX-05-NFM LP-GPX-05-NFM LP-GPX-05-TFF LP-GPX-05-TFM LP-GPX-05-SFF LP-GPX-05-SFM	• White Bronze plated body vs. aluminum housing • Smaller foot print with lower weight • Lower energy throughput • Better Insertion Loss and Return Loss • Extra grounding ring supplied for suspended installation • Accommodates LP-BFDN-CW bracket for flange installation • Times Protect units furnished with N, TNC and SMA connector options	
GTH-NFM-AL	LP-GTR-NFM-35	• Higher RF power of 550W vs 300W PPC • 20kA multiple for TMS vs 20kA single shot for PPC.	Customer to verify operating Frequency of network. TMS Frequency range (DC-3GHz).
GT-DFF-AL (Spike Guard) (OBS) GT-DFM-AL (Spike Guard) (OBS)	LP-GTR-DFF LP-GTR-DFM	• Weatherization (body) to IP67 vs. IP65 for PPC • Solid brass body vs. aluminum for PPC • White bronze plating vs. aluminum for PPC • Replaceable protection component vs. non-replaceable with PPC • Universal mounting/grounding bracket included vs. sold separately by PPC	

GT-NFF-AL (Spike Guard) GT-NFM-AL (Spike Guard) GT-NFSF-AL GT-TFF-AL (OBS) GT-TFM-AL (OBS)	LP-GTV-NFF LP-GTV-NFM LP-GTV-NFF + N/SMA adaptor LP-GTV-TFF LP-GTV-TFM	• Broader frequency range coverage • White Bronze Plated body vs. Aluminum PPC • Elongated female connectors	
IS-B50LN-C0, -C1 and -C2 IS-50NX-C0, -C1 and -C2 IS-NEMP-C0, -C1 and -C2 IS-B50LN-C0-MA, -C1-MA and -C2-MA IS-50NX-C0, -C1 and C2-MA IS-NEMP-C0-MA, -C1-MA and -C2-MA IS-B50LN-C0-ME, -C1-ME and -C2-ME IS-50NX-C0-ME, C1- and -C2-ME IS-NEMP-C0-ME, -C1-ME and -C2-ME No weatherized versions available	LP-BTR-NFF LP-BTR-NFF LP-BTR-NFF LP-BTR-NMS LP-BTR-NMS LP-BTR-NMS LP-BTR-NMP LP-BTR-NMP LP-BTR-NMP LP-BTRW-NFF LP-BTRW-NMS LP-BTRW-NMP	• All LP-BTR-N models for user frequencies over 20MHz would replace the IS models with designation of “C0” (10-700MHz) • Lower Insertion Loss and Return Loss • Brass, White bronze body plating vs. PPC aluminum • Bulkhead and flange universal adaptor with weatherization gasket included for feed-through installations. PolyPhaser devices need to be ordered with bulkhead or flange bracket orientation increasing the number of parts to satisfy various installation requirements • All female connectors elongated for bulkheads up to ¼” thick vs PPC only one Female connector elongated IP67 Weatherized versions of the LP-BTR family, otherwise essentially the same performance	Universal mounting bracket for bulkhead and flange included in the LP-BTR-N series. Self captivated screws in the bracket. This design feature allows for any installation (flange, bulkhead and suspended). Includes universal mounting/grounding bracket; no known equivalent product
LSXL LSXL-ME LSXM-NS	LP-WBX-NFF LP-WBX-NMP LP-WBX-NFF + NM to SMA adaptor	• The LP-WBX return loss 1.2:1, vs. PPC 1.3:1 • WBX frequency (2-6GHZ) while PPC 1.6-3.8 than 4.2-6GHz not continuous	
RGT RGT-ME RGT-DFM	LP-GTR-NFF-23 LP-GTR-NFM-23 LP-GTR-DFM-35	• Broader frequency range (DC-3000MHz vs. DC-2400MHz) for PPC • Weatherization (body) to IP67 vs. IP65 for PPC • Solid brass body with White Bronze plating vs. Aluminum body for PPC • Universal mounting/grounding bracket included vs. sold separately by PPC • Three different voltages and power ratings on TMS GTR series. • TMS much better RL and IL than PPC	This comparison is for the replaceable GT design from PPC, not the aluminum N type.
TSX-4310FF TSX-4310FM (bidirectional) TSX-4310FM (bidirectional)	LP-STRH-43FF LP-STRH-43MS LP-STRH-43MP	• Better surge performance • 100% PIM tested • Bulkhead to Flange adaptor included with each protector	Times designs are not bidirectional and customer needs to define connector on the surge and protected side.
TSX-DFF TSX-DFM (bidirectional) TSX-DFM (bidirectional) TSX-DFF-BF TSX-DFM-BF	LP-STRH-DFF LP-STRH-DMS LP-STRH-DMP LP-STRH-DFF + LP-BFDN-CW LP-STRH-DMP/DMS + LP-BFDN-CW	• Coverage for LTE and Public Safety frequencies (700-2700MHz) • Lower energy throughput (700pJ vs. 5nJ) • Better PIM <-160dBc at 900/1800/2100MHz vs. -155dBc • Higher surge current rating 50kA (as tested) vs. 30KA single shot for PPC • Weatherization (body) to IP67 • PolyPhaser TSX-D series IL/RL/VSWR performance frequency dependent	Times designs are not bidirectional and customer needs to define connector on the surge and protected side.
TSX-NFF TSX-NFM (bidirectional) TSX-NFM (bidirectional) TSX-NFF-P TSX-NFM-P (bidirectional) TSX-NFM-BF (bidirectional)	LP-STRH-NFF LP-STRH-NMS LP-STRH-NMP LP-STRH-NFF + LP-BFDN-CW LP-STRH-NMP/NMS + LP-BFDN-CW LP-STRH-NMS + AL-BFDN-CW LP-STRH-NMP + LP-BFDN-CW	• Coverage for LTE and Public Safety frequencies (700-2700MHz) • Lower energy throughput (700pJ vs. 5nJ) • Better PIM <-160dBc at 900/1800/2100MHz vs. -155dBc • Higher surge current rating 50kA (as tested) vs. 40KA single shot for PPC • Weatherization (body) to IP67 • TSX-NFF and TSX-NFM are not PIM rated • PIM applies to the TSX-NFF-P and TSX-NFM-P	Times designs are not bidirectional and customer needs to define connector on the surge and protected side.

TUSX-DFF TUSX-DFM (bidirectional) TUSX-DFM (bidirectional) TUSX-NFF TUSX-NFM (bidirectional) TUSX-NFM (bidirectional)	LP-HBX-DFF LP-HBX-DMS (M on surge) LP-HBX-DMP (Male on equipment) LP-HBX-NFF LP-HBX-NMS (Male on surge) LP-HBX-NMP (Male on protected)	• White Bronze plated body • HBX frequency coverage 100-700MHz	Times designs are not bidirectional and customer needs to define connector on the surge and protected side.
UHF50HN (OBS) VHF50HN UHF50HN-MA (OBS) VHF50HN-MA UHF50HN-ME (OBS) VHF50-HN-ME	LP-HBX-NFF LP-HBX-NFF LP-HBX-NMS LP-HBX-NMS LP-HBX-NMP LP-HBX-NMP	• Three Times Protect units replace six PolyPhaser parts • Frequency (100-700MHz) • White Bronze plated brass bodies vs. Aluminum • Hardware kit could be moved to either side of device in the F/F configuration • Energy throughput 1.4uJ vs. 10uJ for PolyPhaser	
VHF50D-PGR VHF50D-MA-PGR	LP-HBX-DFF LP-HBX-DMS	• Verify PIP (peak instantaneous power) requirements	
VHF50-HD VHF50-HD-MA No equivalent	LP-HBX-DFF LP-HBX-DMS LP-HBX-DMP	• Frequency coverage extended to 700MHz (PolyPhaser 100-512MHz) • White Bronze plated brass body vs. Aluminum • Hardware kit can be moved to either side of the device with F/F configuration • Lower energy throughput than PolyPhaser	Bulkhead to Flange adaptor Included with protector.