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	In accordance with EEE-INST-002 & PEM-INST-001	

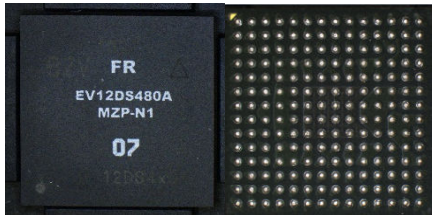
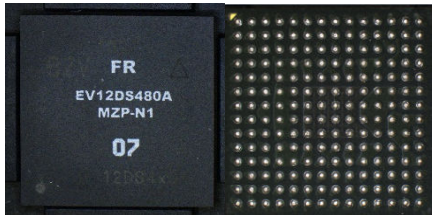
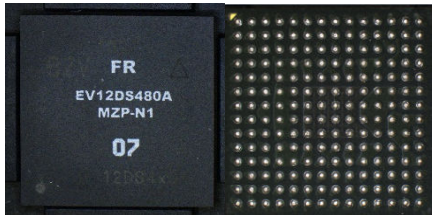
12 bit 8 Gbps MuxDAC - EV12DS480AMZP-N1

FpBGA 196

Qualification status: **Accepted** Pending Rejected

This product as met all PEM-INST-001 – Level 1 qualification requirements

Device description:		
Teledyne-e2v part number: EV12DS480AMZP-N1	Temperature range : -55 °C < Tc , Tj < +125 °C	Screening Level: PEM – INST - 001 – Level 1

Device description:						
Technology: 200 GHz - SiGe Bipolar	Process : B7HF200 - Infineon	External view (example) : <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Top</td> <td style="text-align: center;">Bottom</td> </tr> <tr> <td colspan="2" style="text-align: center;">  </td> </tr> </table>	Top	Bottom		
Top	Bottom					
						
Die size: 4.58 mm x 4.58 mm	Passivation : SiO2 (0.3 µm) & SiN (0.55 µm)					
Wafer diffusion lot number / Mask : RU516515 / VN62A	Assy Date Code : 1527					
Outline / Pitch: 15 x 15 x 1.2 mm / 1.00 mm	Solder ball composition: Sn 62 / Pb 36 / Ag 2					
Assy plant: Unisem Batam	MSL / Max. peak reflow: MSL 3 / 235 °C					

Testing lot references:	
Testing Production Order: 660326664 660325259	Testing Batch number: 0000038125 0000037936

Screening and Qualification tests Summary					
<i>SubGroup</i>	<i>Description</i>	<i>Standard / Method / Cond</i>	<i>Sample</i>	<i>Status</i>	<i>Note</i>
N1 Flow	NASA Level 1 Process Flow	EEE-INST-002 / PEM-INST-001	-	Pass	<i>See page 2</i>
Q1 Flow	Devices issued from N1 FLOW	EEE-INST-002 Table 3 Preconditionning flow	32 (0) parts	Pass	<i>See page 2</i>
Sub-group 1	Devices issued from Q1 FLOW	EEE-INST-002 Table 3 HTOL / Temp Cycling	22 (0) parts	Pass	<i>See page 3</i>
Sub-group 2	Devices issued from Q1 FLOW	EEE-INST-002 Table 3 HAST	10(0) parts	Pass	<i>See page 3</i>

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N1 Flow Steps – Summary of main steps

Launch from T-e2v stock	PO: 660326664 PO: 660325259	
Marking + serialization / polymerization	# 1 to 117	Done
Temperature Cyling	TM1010/B/20cy	Done
X-Ray inspection	TM2012	Done
C-SAM inspection	internal proc.	Done
Initial Pre-Static electrical measurements	Amb / Cold / Hot	Done
Engineering review	internal proc.	Done
Static Burn-In	120Hrs / 125°C	Done
Post Static and initial Burn-In electrical measurements	Ambient	Done
Engineering review	internal proc.	Done
Dynamic Burn-In	240Hrs / 125°C	Done
Final Post-Burn-in electrical measurements + drift	Amb / Cold / Hot	Done
Engineering review	internal proc.	Done
PDA calculation	<5%	3.13% → Pass
Physical dimension control		Done
External Visual inspection		Done
Final quantity		32

Q1 FLOW - QUALIFICATION TESTS – devices issued from N1 Flow

Subgroup	Step	Test / cond.	Sample	Date Code / serial numbers	Status	Note
Q1 Flow	1	Initial Electrical EV12DS480AMZP-N1 prog. +25°C / +125°C / -55°C	32(0) parts	DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	Pass	see note A
	2	Visual examination MIL-STD-883 TM2009	32(0) parts		Pass	-
	3	C-SAM (T0) Per paragraph 5.3.3. of PEM-INST-001	32(0) parts	DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	NA	-
	4	Preconditioning MSL3 J-STD-020E Baking 24 h, 125 °C Moisture Soak 192 h, 30 °C, 60 % RH Reflow 3 reflows, SnPb, profile peak 235 °C	32(0) parts		DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	Pass
	5	Visual examination MIL-STD-883 TM2009	32(0) parts	Pass		-
	6	C-SAM (T1) Per paragraph 5.3.3. of PEM-INST-001	32(0) parts	DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	Pass	see note D
	7	Final Electrical EV12DS480AMZP-N1 prog. +25°C / +125°C / -55°C	32(0) parts		DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31, 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	Pass
	8	Visual examination MIL-STD-883 TM2009	32(0) parts	Pass		-

Note C : PVT_09362_01 (10 FM) and PVT_09580_01 (22 FM) Preconditioning MSL3

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Note D : C-SAM T1 - Qualification Devices - EV12DS480AMZP-N1 - DC1527 – report : 180634-e2v-rb-FpBGA196-22p-T1

SUB-GROUP 1 – HTOL / Temp Cycling tests - Devices issued from Q1 FLOW

Subgroup	Step	Test / cond.	Sample	Date Code / serial numbers	Status	Note
SubGr1	1	HTOL 1500Hrs Step 500Hrs / 1000Hrs Method 1005 / Cond.D / 125°C	22(0) parts	DC 1527 s/n # 1, 3, 5, 7, 8, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 29, 30, 31	Pass	-
	2	Intermediate Electrical EV12DS400AMZP-N1 prog. +25°C / +125°C / -55°C			Pass	-
	3	Visual examination MIL-STD-883 TM2009.			Pass	-
	4	Temperature cycling 500 Cycles MIL-STD-883 TM1010, Cond.B (-55°C to +125°C)			Pass	see note E
	5	Final Electrical EV12DS400AMZP-N1 prog. +25°C / +125°C / -55°C			Pass	-
	6	C-SAM (T2) Per paragraph 5.3.3. of PEM-INST-001			Pass	see note F
	7	Visual examination MIL-STD-883 TM2009.			Pass	-

Note E : PO : 990007996 - VRT 500 cycles –internal procedure

Note F : C-SAM T2 - Qualification Devices - EV12DS480AMZP-N1 - DC1527- report : 180634-e2v-rb-FpBGA196-32p-T2

SUB-GROUP 2 - HAST test- Devices issued from Q1 FLOW

Subgroup	Step	Test / cond.	Sample	Diff. Lot / Batch number / Serial numbers	Status	Note
SubGr2	1	Biased HAST JESD22-A110E 96 hours, +130°C, 85% RH 1Hr ON / 1Hr OFF	10(0) parts	DC 1527 s/n # 160, 161, 165, 166, 168, 169, 171, 174, 175, 176	Pass	see note G
	2	Intermediate Electrical EV12DS400AMZP-N1 prog. +25°C / +125°C / -55°C				
	3	Visual examination MIL-STD-883 TM2009.				

Note G :report: PVT_09464_01 – HAST 96H – 5 parts
report: PVT_09463_01 – HAST 96H – 5 parts

Qualification tests conclusions:

- EV12DS480AMZP-N1 devices with DC 1527 have passed with success all PEM-INST-001 Level 1 requirements
 Rejected

Authorized Signature:

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& DLA point of contact

July 10th, 2019

