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To: Distribution

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Reliability Qualification of New Device PVN012A/S in 6L-PDIP/GW Packages (Project# 3008)

Three qualification lots of PVN012, 1 lot in 6L-PDIP and 2 lots in 6L-GW packages completed Autoclave, Temp-Cycling, THB and HTRB Reliability Tests. All three lots passed AC, TC, THB and HTRB tests. Based on these reliability test results, the PVN012A in 6L-PDIP and PVN012AS in 6L-GW Packages are qualified and released to production. The levels of qualifications are industrial levels.

Each of the test conditions is described below and is accompanied by the summary of test results.

Rel Test #1 - Autoclave Humidity Test

Test Condition: 16 Hours of Autoclave @ +121°C, 100%RH and 15 PSIG.
Bias Condition: None, Preconditioning: None

Results

| Device | Lot Number | Lot Description | Package | Hour | SS | Reject | Remarks |
|----------|------------|-----------------|---------|------|----|--------|---------|
| PVN012AS | 732508-B | Qual Lot1 | 6L-GW | 16 | 77 | 0 | |
| PVN012AS | 732533-B | Qual Lot2 | 6L-GW | 16 | 77 | 0 | |
| PVN012A | P112850 | Qual Lot3 | 6L-PDIP | 16 | 77 | 0 | |

Rel Test #2 - Temperature Cycling:

Test Condition: 1000 cycles between -40°C to 125°C (ΔT=165°C, Dry-Air to Dry-Air)
Bias Condition: None, Preconditioning: None

Results

| Device | Lot Number | Lot Description | Package | Cycle | SS | Reject | Remarks |
|----------|------------|-----------------|---------|-------|----|--------|---------|
| PVN012AS | 732508-B | Qual Lot1 | 6L-GW | 1000 | 77 | 0 | |
| PVN012AS | 732533-B | Qual Lot2 | 6L-GW | 1000 | 77 | 0 | |
| PVN012A | P112850 | Qual Lot3 | 6L-PDIP | 1000 | 77 | 0 | |

International IOR Rectifier

Rel Test #3 - Temperature Humidity Bias (THB) Test:

Test Condition: 1008 Hours @ +85°C and 85%RH
 Bias Condition: Vin = 0 Volts, Vout (Vds) = 10Volts, Preconditioning: None
 Note: the THB GW samples were mounted by reflow, 1 pass with the PRT=225C.

Results

| Device | Lot Number | Lot Description | Package | Hour | SS | Reject | Remarks |
|----------|------------|-----------------|---------|------|----|--------|---------|
| PVN012AS | 732508-B | Qual Lot1 | 6L-GW | 1008 | 77 | 0 | |
| PVN012AS | 732533-B | Qual Lot2 | 6L-GW | 1008 | 77 | 0 | |
| PVN012A | P112850 | Qual Lot3 | 6L-PDIP | 1008 | 77 | 0 | |

Rel Test #4 - High Temperature Reverse Bias (HTRB) Test:

Test Condition: 1008 Hours @ +110°C
 Bias Condition: Vin = 0 Volts, Vout (Vds) = 12.8Volts, Preconditioning: Not required
 Note: the HTRB GW samples were mounted by reflow, 1 pass with the PRT=225C.

Results

| Device | Lot Number | Lot Description | Package | Hour | SS | Reject | Remarks |
|----------|------------|-----------------|---------|------|----|--------|---------|
| PVN012AS | 732508-B | Qual Lot1 | 6L-GW | 1008 | 77 | 0 | |
| PVN012AS | 732533-B | Qual Lot2 | 6L-GW | 1008 | 77 | 0 | |
| PVN012A | P112850 | Qual Lot3 | 6L-PDIP | 1008 | 77 | 0 | |

PVN012A/S's DEVICE/LOT INFORMATION

| | | |
|-------------------------------|-------------|---|
| PACKAGES | TYPE | 6 LEAD GW 6 LEAD PDIP |
| | MC MATERIAL | Toshiba KE-95 |
| SILICON TECHNOLOGY/FAB | | FET DIE: Gen3 LQ Cells/Fab2 PVG DIE: Gen2/Fab3 LED DIE: 43-7479 |
| ASSEMBLY | | Cirtek, Philippines |
| FT TEST | | Cirtek, Philippines |
| RELIABILITY | | IR REL Lab, CA USA |
| REMARKS: | | |