

**Qualification Plan:**

Estimated date for qualification completion: Q4'15

| TEST | NAME | REFERENCE SPECIFICATION | TEST CONDITIONS | END POINT REQUIREMENTS | SS x No. Lots |
|--------------------|--|--------------------------------|--|--|------------------------------|
| Prep | Sample preparation and initial part testing | | various | --- | all |
| HTRB | High Temp Reverse Bias | JESD22-A108 | Tj = 90C, bias = 80% of rated V | c = 0, Room | 80 x 3 lots |
| Initial Electrical | Initial Electrical Prior To PC | | --- | ---- | ALL |
| PC | MSL1 Preconditioning | J STD 020 , JESD22-A113 | IR reflow at 260C | c = 0, Room | 320 x 3 lots |
| H3TRB + PC | High Temp High Humidity Reverse Bias + Preconditioning | JESD22-A101 | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max | c = 0, Room | 80 x 3 lots |
| TC + PC | Temp Cycling + Preconditioning | JESD22-A104 | Temp = -65°C to +150°C; for 1000 cycles | c = 0, Room | 80 x 3 lots |
| AC + PC | Autoclave + Preconditioning | JESD22-A102 | 121°C/100% RH/15 PSIG for 96 hrs | c = 0, Room | 80 x 3 lots |
| DC-CPA | DC Critical Parameter Shift Analysis | | Datalog units and examine parametric shifts before and after test. | N/A | all HTGB, HTRB, and TC units |
| IOL + PC | Intermittent Op Life + Preconditioning | MIL STD750, M 1037 AEC Q101 | Ta=+25°C, deltaTj=100°C max, Ton=Toff 2min | c = 0, Room | 80 x 3 lots |
| RSH | Resistance to Solder Heat | JESD22-B106 | Ta=265C 10 sec dwell B106 | | 10 x 3 lots or 30 x 1 lot |
| SAT | Scanning Acoustical Topography | as outlined in MSB17722C | 12MSB17722C | pre and post MSL | 5 pre and 5 post |
| DPA | Destructive Physical Analysis | AEC Q101-004 | Post 1008 hours H3TRB or 96 hrs HAST | AEC Q101-004 | 2 x 3 lots |
| DPA | Destructive Physical Analysis | AEC Q101-004 | Post 1000 cyc TC + PC | AEC Q101-004 | 2 x 3 lots |
| CDPA | Customer Destructive Physical Analysis | AEC Q101, rev D, test 7A (alt) | Post 1000 cyc TC + PC | AEC Q101 | 22 x 3 lots |
| Tri-Temp | Tri-Temp Characterization | | Characterization of all 48A parameters | | 30 x 3 lots |
| ESD | Electrostatic Discharge | | HBM, CDM, IEC | | ss per 17722 |
| DSS | Die Push off | | per assembly spec | report remaining Si | 10 x 3 lots |
| WPS | Wire Bond Pull Strength | | per assembly spec | report wire break point and gram force | 10 x 3 lots |
| BPS | Bond Shear Strength | | per assembly spec | report wire break point and gram force | 10 x 3 lots |



List of affected Standard Parts:

| Std PN | Equivalent AutoStd PN | Std PN | Equivalent Auto Std PN |
|---------------|--|----------------|--|
| 1N5817G | Non AEC qualified, No automotive version available | MBRA2H100T3G | NRVBA2H100T3G |
| 1N5817RLG | Non AEC qualified, No automotive version available | MBRA320T3G | NRVBA320T3G |
| 1N5818G | Non AEC qualified, No automotive version available | MBRA340T3G | NRVBA340T3G |
| 1N5818RLG | Non AEC qualified, No automotive version available | MBRAF1100T3G | TBD |
| 1N5819G | Non AEC qualified, No automotive version available | MBRAF1540T3G | NRVBAF1540T3G |
| 1N5819RLG | Non AEC qualified, No automotive version available | MBRAF260T3G | NRVBAF260T3G |
| 1N5820G | Non AEC qualified, No automotive version available | MBRAF2H100T3G | TBD |
| 1N5820RLG | Non AEC qualified, No automotive version available | MBRAF3200T3G | NRVBAF3200T3G |
| 1N5821G | Non AEC qualified, No automotive version available | MBRAF360T3G | NRVBAF360T3G |
| 1N5821RLG | Non AEC qualified, No automotive version available | MBRAF440T3G | TBD |
| 1N5822G | Non AEC qualified, No automotive version available | MBRB1045G | SBRB1045G |
| 1N5822RLG | Non AEC qualified, No automotive version available | MBRB1045T4G | SBRB1045T4G |
| 80SQ045NG | Non AEC qualified, No automotive version available | MBRD1035CTLG | SBRD81035CTLG |
| 80SQ045NRLG | Non AEC qualified, No automotive version available | MBRD1035CTLT4G | NRVBD1035CTLT4G |
| MBR0520LT1G | SBR80520LT1G | MBRD1045T4G | SBRD81045T4G |
| MBR0520LT3G | SBR80520LT3G | MBRD320G | SBRD8320G |
| MBR0530T1G | NRVB0530T1G | MBRD320RLG | Non AEC qualified, No automotive version available |
| MBR0530T3G | NRVB0530T3G | MBRD320T4G | SBRD8320T4G |
| MBR0540T1G | NRVB0540T1G | MBRD330G | SBRD8330G |
| MBR0540T1H | TBD | MBRD330RLG | Non AEC qualified, No automotive version available |
| MBR0540T3G | NRVB0540T3G | MBRD330T4G | SBRD8330T4G |
| MBR1035G | Non AEC qualified, No automotive version available | MBRD340G | SBRD8340G |
| MBR1045G | Non AEC qualified, No automotive version available | MBRD340RLG | Non AEC qualified, No automotive version available |
| MBR1060G | Non AEC qualified, No automotive version available | MBRD340T4G | SBRD8340T4G |
| MBR1100G | Non AEC qualified, No automotive version available | MBRD350G | SBRD8350G |
| MBR1100RLG | Non AEC qualified, No automotive version available | MBRD350RLG | SBRD8350RLG |
| MBR120ESFT1G | NRVB120ESFT1G | MBRD350T4G | SBRD8350T4G |
| MBR120ESFT3G | NRVB120ESFT3G | MBRD360G | SBRD8360G |
| MBR120LSFT1G | NRVB120LSFT1G | MBRD360RLG | SBRD8360RLG |
| MBR120LSFT3G | NRVBM120LT3G | MBRD360T4G | SBRD8360T4G |
| MBR120VLSFT1G | NRVB120VLSFT1G | MBRD620CTT4G | Non AEC qualified, No automotive version available |
| MBR120VLSFT3G | TBD | MBRD630CTT4G | Non AEC qualified, No automotive version available |
| MBR130LSFT1G | NRVB130LSFT1G | MBRD640CTG | NRVBD640CTG |
| MBR130T1G | NRVB130T1G | MBRD640CTT4G | NRVBD640CTT4G |
| MBR130T3G | NRVB130T3G | MBRD650CTG | NRVBD650CTG |
| MBR140ESFT1G | NRVB140ESFT1G | MBRD650CTT4G | NRVBD650CTT4G |
| MBR140ESFT3G | NRVB140ESFT3G | MBRD660CTG | NRVBD660CTG |
| MBR140SFT1G | NRVB140SFT1G | MBRD660CTRLG | NRVBD660CTRLG |
| MBR140SFT1H | TBD | MBRD660CTT4G | NRVBD660CTT4G |
| MBR140SFT3G | NRVB140SFT3G | MBRM110ET1G | NRVBM110ET1G |
| MBR150G | Non AEC qualified, No automotive version available | MBRM110ET3G | Non AEC qualified, No automotive version available |
| MBR150RLG | Non AEC qualified, No automotive version available | MBRM110LT1G | NRVBM110LT1G |
| MBR160G | Non AEC qualified, No automotive version available | MBRM110LT3G | NRVBM110LT3G |
| MBR160RLG | Non AEC qualified, No automotive version available | MBRM120ET1G | NRVBM120ET1G |
| MBR1H100SFT3G | NRVB1H100SFT3G | MBRM120ET3G | NRVBM120ET3G |
| MBR230LSFT1G | NRVB230LSFT1G | MBRM120LT1G | NRVBM120LT1G |
| MBR2H100SFT3G | NRVB2H100SFT3G | MBRM120LT3G | NRVBM120LT3G |
| MBR2H200SFT1G | Non AEC qualified, No automotive version available | MBRM130LT1G | NRVBM130LT1G |
| MBR2H200SFT3G | Non AEC qualified, No automotive version available | MBRM130LT1H | TBD |
| MBR3100G | Non AEC qualified, No automotive version available | MBRM130LT3G | NRVBM130LT3G |
| MBR3100RLG | Non AEC qualified, No automotive version available | MBRM140T1G | NRVBM140T1G |
| MBR340G | Non AEC qualified, No automotive version available | MBRM140T3G | NRVBM140T3G |



| Std PN | Equivalent AutoStd PN | Std PN | Equivalent Auto Std PN |
|---------------|--|--------------|--|
| MBR340RLG | Non AEC qualified, No automotive version available | MBRM1H100T3G | TBD |
| MBR350RLG | Non AEC qualified, No automotive version available | MBRM2H100T3G | NRVBM2H100T3G |
| MBR360G | Non AEC qualified, No automotive version available | MBRS1100T3G | SBRS81100T3G |
| MBR360RLG | Non AEC qualified, No automotive version available | MBRS120T3G | SBRS8120T3G |
| MBR440MFST1G | NRVB440MFST1G | MBRS120T3H | TBD |
| MBR440MFST3G | NRVB440MFST3G | MBRS130LT3G | SBRS8130LT3G |
| MBR560MFST1G | NRVB560MFST1G | MBRS130T3G | NRVBS130T3G |
| MBR560MFST3G | NRVB560MFST3G | MBRS140T3G | SBRS8140T3G |
| MBR830MFST1G | NRVB830MFST1G | MBRS1540T3G | TBD |
| MBR860MFST1G | NRVB860MFST1G | MBRS190T3G | SBRS8190T3G |
| MBR860MFST3G | NRVB860MFST3G | MBRS2040LT3G | NRVBS2040LT3G |
| MBRA120ET3G | NRVBA120ET3G | MBRS230LT3G | TBD |
| MBRA130LT3G | NRVBA130LT3G | MBRS240LT3G | NRVBS240LT3G |
| MBRA140T3G | NRVBA140T3G | MBRS260T3G | NRVBS260T3G |
| MBRA160T3G | NRVBA160T3G | MBRS2H100T3G | NBRS2H100T3G |
| MBRA1H100T3G | NRVBA1H100T3G | MBRS3100T3G | NRVBS3100T3G |
| MBRA210ET3G | TBD | MBRS3200T3G | NRVBS3200T3G |
| MBRA210LT3G | NRVBA210LT3G | MBRS3201T3G | NRVBS3201T3G |
| MBRS320T3G | TBD | MBR830MFST3G | NRVB830MFST3G |
| MBRS330T3G | NRVBS330T3G | MBRA210ET3H | TBD |
| MBRS340T3G | SBRS8340T3G | MBRA210LT3H | TBD |
| MBRS360BT3G | NRVBS360BT3G | MBRA340T3H | Non AEC qualified, No automotive version available |
| MBRS360T3G | NRVBS360T3G | MBRD320RLH | Non AEC qualified, No automotive version available |
| MBRS410ET3G | TBD | MBRD320T4H | Non AEC qualified, No automotive version available |
| MBRS410LT3G | TBD | MBRD640CTT4H | Non AEC qualified, No automotive version available |
| MBRS4201T3G | NRVBS4201T3G | MBRD660CTT4H | Non AEC qualified, No automotive version available |
| MBRS540T3G | NRVBS540T3G | MBRM120ET1H | TBD |
| SS16T3G | SBRA8160T3G | MBRM120LT3H | TBD |
| SS22T3G | TBD | MBRM140T1H | TBD |
| SS24T3G | NRVBSS24T3G | MBRM140T3H | TBD |
| SS26T3G | NRVBSS26T3G | MBRS1100T3H | TBD |
| MBR1045H | Non AEC qualified, No automotive version available | MBRS130LT3H | TBD |
| MBR120LSFT1H | TBD | MBRS130T3H | TBD |
| MBR120LSFT3 | Non AEC qualified, No automotive version available | MBRS140T3H | TBD |
| MBR120VLSFT1H | TBD | MBRS190T3H | TBD |
| MBR120VLSFT3 | Non AEC qualified, No automotive version available | MBRS2040LT3H | TBD |
| MBR130LSFT1H | TBD | MBRS240LT3H | TBD |
| MBR230LSFT1H | TBD | MBRS260T3H | TBD |
| MBR460MFST1G | NRVB460MFST1G | MBRS3100T3H | TBD |
| MBR460MFST3G | NRVB460MFST3G | MBRS340T3H | TBD |
| SS24T3H | TBD | MBRS360T3H | TBD |
| SS26T3H | TBD | | |