

6 inch 650V SiC JBS Diode

Product Platform Qualification Report

Description:	SiC JBS Diode, 650V
Package Type:	TO-247/ TO-220
Process Technology:	SiC, 6 inch
Date issued:	11/29/2017

Test Name	Test Standard	# Samples x # Lots	Results
High Temperature Reverse Bias (HTRB)	MIL-STD-750-1 M1038 Method A (1000 Hours) $T_J=175^{\circ}\text{C}$, $V=80\% V_{\text{max}}$	77x5 lots	Pass
Intermittent Operating Life (IOL)	MIL-STD-750 Method 1037 $DT_J \geq 125^{\circ}\text{C}$, 3000 cycles (5 minutes on/ 5 minutes off)	77x5 lots	Pass
Highly Accelerated Stress Test (HAST)	JESD22A-110 $T_A=130^{\circ}\text{C}/85\%\text{RH}$, $V=42\text{V}$, 96 hours	77x5 lots	Pass
Autoclave (PCT)	JESD22A-102 $T_A = 121^{\circ}\text{C}/\text{RH} = 100\%$, 96 hours, 15psig	77x5 lots	Pass
Temperature Cycling (TC)	JESD22A-104 $T_A = -55^{\circ}\text{C}$ to 150°C , 1000 cycles (2 cycles per hour)	77x3 lots	Pass

Conclusion

This report summarizes the reliability tests applied to USCi's 6 inch 650V SiC JBS diode product family. Testing was performed on die packaged in 3 lead TO-247 and 2 lead TO-220 discrete packages which were then subjected to industry standard testing as described in the AEC-Q101 specification and listed above. The platform has met all USCi's qualification requirements and is available for unrestricted use.