

UnitedSiC Gen 3 Cascode

Product Qualification Report: UJ3CXXXYYYK3S/T3S

Description:	Cascode – Gen 3, 1200V/650V
Package Type:	TO-247-3L/ TO-220-3L
Process Technology:	SiC JFET & Si MOSFET
Date issued:	06/15/2018

Test Name	Test Standard	# Samples x # Lots	Failures
High Temperature Reverse Bias (HTRB)	MIL-STD-750-1 M1038 Method A (1000 Hours) $T_J=175^{\circ}\text{C}$, $V=80\% V_{\text{max}}$	77x7 lots	0/539
High Temperature Gate Bias (HTGB)	JESD22 A-108 (1000 Hours) $T_J=175^{\circ}\text{C}$, $V=100\% V_{\text{max}}$ (+25V), bias in on direction	77x7 lots	0/539
Highly Accelerated Stress Test (HAST)	JESD22 A-110 (96 Hours) $T_A=130^{\circ}\text{C}/85\%\text{RH}$	77x8 lots	0/616
Intermittent Operating Life (IOL)	MIL-STD-750 Method 1037 $DT_J \geq 125^{\circ}\text{C}$, 3000 cycles (5 minutes on/ 5 minutes off)	77x7 lots	0/539
Temperature Cycle (TC)	JESD22 A-104 (1000 Cycles)	77x7 lots	0/539
Autoclave (PCT)	JESD22 A-102 $121^{\circ}\text{C}/\text{RH} = 100\%$, 96 hours, 15psig	77x7 lots	0/539

Conclusion

This report summarizes the reliability tests applied to United Silicon Carbide products UJ3C120040K3S, UJ3C120080K3S, UJ3C065030K3S, UJ3C065080K3S, UJ3C065030T3S, UJ3C065080T3S to AEC-Q101 standards. As a result of the testing, these products are considered qualified and available for unrestricted use within the limitations prescribed by the appropriate datasheets.