

Examples from the listing of high-temperature evaluations – more than 50 items included.

This listing is provided as a locked pdf file.

Component	Part number	Evaluation temperatures (°C)	Summary	References
DISCRETE ACTIVE DEVICES				
SiC Schottky diode, 10 A, 300 V	Infineon SDT10S30	+25 to +200/+300	V_{th} decreases with T increase; R_{for} increases with T increase; I-V crossover at ~ 5 A; I_{rev} increases with T increase.	LEB04
CIRCUITS				
Voltage reference, 2.5 V	Texas Instruments REF5025-HT	-190 to +210 cycling	Output V ~ 3% drop at +210°C; anomalous below ~ -50°C and at HT with high input V; large decrease in supply current as T decreases and ~ 50% decrease at HT; no noticeable change or physical damage after 12 cycles.	(PAT11a), PAT10d
POWER CONVERTERS, INVERTERS & DRIVERS				
SOI full-bridge driver	CISSOID CHT-FBDR	-190 to +225 cycling	Operates at all Ts; rise time increases with T increase, except below ~ -120°C where it rises with T decrease, fall time increases with T increase and vv; supply current decreases ~ 20% below ~ 0°C; no noticeable change or physical damage after 12 cycles.	PAT09, (PAT10a), (PAT11a)
PASSIVE COMPONENTS & TEMPERATURE SENSORS				
Capacitor, ceramic, COG, 0.16 μ F	AVX SM041A164KAN240	-195 to +200	Test frequency 100 kHz; C < 5% variation over entire T range; dissipation factor < 0.0005 over entire T range; used in T-to-frequency oscillator circuit—see PAT07a.	PAT08e, (PAT10a)

Examples of references:

LEB04 R. C. Lebron-Velilla, G. E. Schwarze, G. Gardner and J. D. Adams, Jr., “Silicon carbide diodes characterization at high temperature and comparison with silicon devices,” *NASA/TM-2004-213336*, Oct. 2004; *Second International Energy Conversion Engineering Conference (American Institute of Aeronautics and Astronautics)*, Providence, Rhode Island, 16-19 Aug. 2004, AIAA-2004-5750.

PAT10a R. Patterson and A. Hammoud, “Evaluation of COTS SiGe, SOI, and mixed signal electronic parts for extreme temperature use in NASA missions,” *NEPP Electronic Technology Workshop*, 22-24 June 2010 (slides).