Measurement of Safe Operating Area (SOA)

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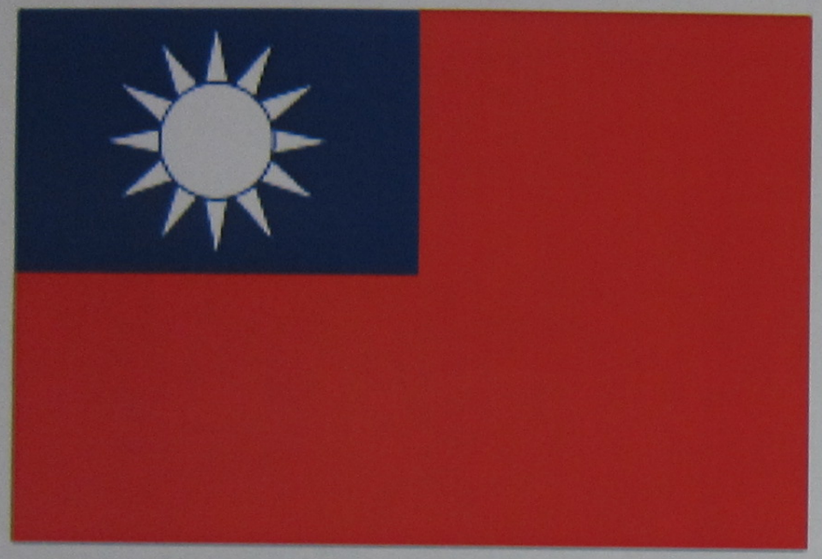
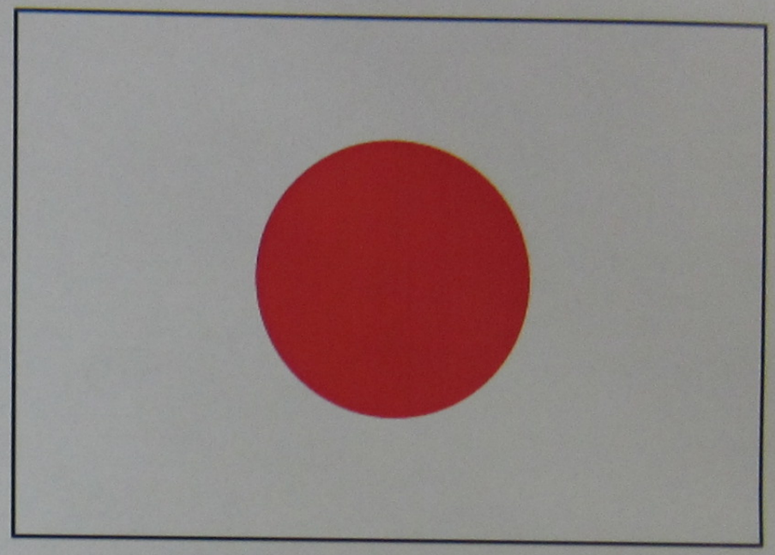
Outline

- Introduction to SOA.
- Forward Bias SOA.
  1. Measurement.
  2. Way to Improve FBSOA of LDMOS.
- Reversed Bias SOA.
  1. Unclamped Inductive Switching (UIS) Test Circuit.
  2. Clamped Inductive Switching (CIS) Test Circuit.
  3. Real Case of UIS and CIS.
- Summary.
- Reference.





Welcome to HANWA

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National Chiao-Tung University, Institute of Electronics
tSOA Test Circuit and Waveform[3]
t_0<t<t_{fail}: V_{gs}=I_{diode}*R_{gs}>V_{th}
V_{ds}=I_{diode}*R_{gs}+BVZ
MOS on, I_{ds}=$I_{MOS,channel}$
Power dissipation=V_{ds}*I_{ds}
t_{fail}<t:Hot carrier turns on parasitic BJT
I_{ds}=I_{BJT}, I=I_{diode}=0A, V_{gs}=V_{ds}=0V, MOS off.
I_{diode}
BVZ
V_{ds}
V_{gs}
I_{ds}
R_{gs}
I_{ds}-time
0A
V_{gs}/V_{ds}/I_{diode}-time
0Vor0A
t_0
t_{fail}
time
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9