

PSMA Semiconductor Committee Meeting – Aug. 29, 2018

Agenda

Old business:

APEC 2019 Industry Sessions

Webinar Schedule

New Business:

PSMA 2019 Technology Roadmap (Components contribution)

Attendance:

Joe Engle (EPC), Louis Burgyan (Ltec), Heather Ailara (Transphorm), Tirthajyoti Sarkar (ON Semi), Jaume Roig (ON Semi), Dan Kinzer (Navitas), Jeff Casady (Wolfspeed), Tim McDonald (Infineon)

Minutes:

APEC 2019 Industry Sessions

A. See below the latest draft of the Industry session abstracts and possible speaker lists as updated at the August 29 meeting. Please review and provide your comments by Sept. 5. Final version, including inputs from this cc list will be submitted to PSMA board and APEC organizing team for review and approval on that day.

Abstracts for APEC industry sessions submitted by PSMA semiconductor committee

1. "Production use cases of wide band gap semiconductors : systems in production today, drivers and controllers for tomorrow"

As a disruptive technology, both SiC and GaN have been traversing the adoption gap between users who are enthusiasts and those that are pragmatic market leaders. Recent power conversion systems released to production mark this progress. Attend this session and discover which are these key applications, and what are the dramatic performance improvements which WBG Devices enable. Learn about the latest whole solution components: reference designs, controllers and drivers that will enable the continued growth of wide band gap device usage.

Possible speakers :

- Infineon and a key customer who is using GaN devices (Tim McDonald confirms interest)
- Transphorm and a key customer who is using GaN devices (Philip Zuk confirms interest)
- TI : reference design for key application (Stephanie Watts Butler confirms interest)
- Exagan interested (GaN Drivers) (per Jaume and also per Tim M : Steve Lester : Exagan US employee expressed interest)

- EPC might be interested (Joe Engle to check)
- Navitas (Dan Kinzer) interested
- other possibilities: p Semi (Renee Yawger/Joe Engle to ask if they are interested).
- Wolfspeed interested (Jeff Casady confirmed)

2. "Getting up to speed on switching: wide band gap and other components for breakthrough performance"

Far from static, wide band gap semiconductor technology, performance and product portfolio breadth all continue at a dramatic pace. Attend this session and get up to speed on the latest developments in high performance wide SiC, GaN, and even Si devices

Possible speakers:

- Gene SiC: Ranbir Singh expressed interest (per Ritu)
- Infineon (TBD GaN and/or SiC)
- Dialog (Dilip Rosbud confirms interest per Tim M)
- Empower (Tim Philips confirms possible interest per Ritu)
- Wolfspeed (Jeff Casady or tbd per Ritu)
- Navitas (Dan Kinzer confirmed, though Navitas priority is session 1,3,2)
- ST (Tim sent email to Thomas Hopkins to gage interest: are there other relevant contacts?)
- Miscellaneous possible speakers, interest not yet confirmed: , MPS , Power Integrations

3. "Current reliability and product qualification topics for SiC and GaN wide band gap devices"

SiC and GaN devices are increasingly available on the market. But are they proven reliable? This session will cover the status of work on key reliability and robustness topics for SiC and GaN devices as well as update on the JEDEC JC-70 standardization effort (which focuses on developing quality and reliability standards specific to SiC and GaN power devices).

Possible Speakers:

- Stephanie Watts-Butler (TI) and Jeff Casady (Wolfspeed) : update on JEDEC JC-70 activity
- Transphorm (Philip Zuk Confirms interest)
- EPC (Alex Lidow confirms interest to speak)
- Infineon (Speaker TBD)
- NXP Phil Rutter (Siliccon high and low current avalanche: interest expressed)
- Miscellaneous others as possible speakers: Navitas, TI, VISIC
- ON Semi (speaker TBD, Tirtha and Jaume to coordinate and communicate back through Vittorio Crissafulli)

B. New Business Item for discussion (PSMA Technology Roadmap (see attached excel file with sections and status of author recruitment) . During the call we made several adds and modifications to the file attached. Including: Tirtha confirms he will

do the LV and MV FET roadmap contribution for ON Semi (to fold back with Vittorio C), Jaume will work with Vittorio C to confirm a HV Si FET contribution from ON Semi, same for a possible GaN contribution, Dan Kinzer asked that we add a section on Power Integrated Circuits (Si and GaN) : confirmed we will do so and Navitas is added as a contributor. Joe Engle will check with EPC for a contribution too. Tim will contact Dialog for interest.

C. Next meeting: will be set after the APEC planning meeting when the APEC IS sessions will be confirmed so that we can spend the time on finalizing the speakers for the approved session. Set for Wednesday October 10, 10am CST (8am PST).

D. Webinar update from Dhaval:

- a. EPC was successfully completed June 28; very well received!
- b. IFX delivered a session on gate driver isolation on July 26. very well received!
- c. Navitas completed a webinar on August 16. very well received!
- d. Empower tentatively set for November pending abstract submittal in August timeframe (Ritu to follow) – confirmed for Nov. 15 (note: Ritu confirmed Tim P has submitted an abstract)
- e. Tim still set to f/u on TI - If TI has not responded, we can be ok without another WBG webinar. Back end of the year, we are trying to accommodate other streams (capacitor, magnetics, systems etc.)
- f. Any other ideas? Tim to contact Dialog (Siamak), Jaume to check within On Semi (James Victory from ON Semi is presenting tomorrow), possibly choose market research firms (Yole, IHS) – Yole (along with SystemsPlus) has already done a webinar.
- g. We do have a slot open in September due to backing out of a targeted speaker, but after that, it looks like we are getting quite booked till the end of the year. We are fine with extending the webinar season into January time frame if required, but we believe we have gotten a good coverage already, so we can stop after December.
- h. **Once again, thanks and kudos to the semiconductor committee for delivering high quality topics/webinars for this cycle.** If other committees were as proactive, Conor and I would have less chasing to do..

Other background info, parking lot of information

- 1.) APEC 2019 Industry sessions :
 - i. Goals/deadlines: submit session abstracts by Sept 7
 - j. Must include topic/theme as well as proposed speakers/topics
 - k. Our session proposals will be reviewed and approved at the APEC planning meeting at the end of September.
 - l. Once the sessions are approved we will confirm speakers (review at the October meeting).
 - m. So Don't make any firm commits to speakers until then

n. Once announced we will send deadlines and other relevant info to speakers.

2.) Special Sponsored Projects/Brainstorming list (**no further inputs at July meeting, push out to August**)

- a. 3rd party GaN Rel Testing: DC bias lifetime, dynamic Rds(on), switching SOA (DHTOL),
- b. 3rd party SiC Rel Testing
- c. Unexpected switching losses (Si and WBG devices)
- d. Short circuit testing (tsc)
- e. Set a calendar to develop proposals
- f. Pay for report that consolidates published literature (could cover some or all of the above topics).