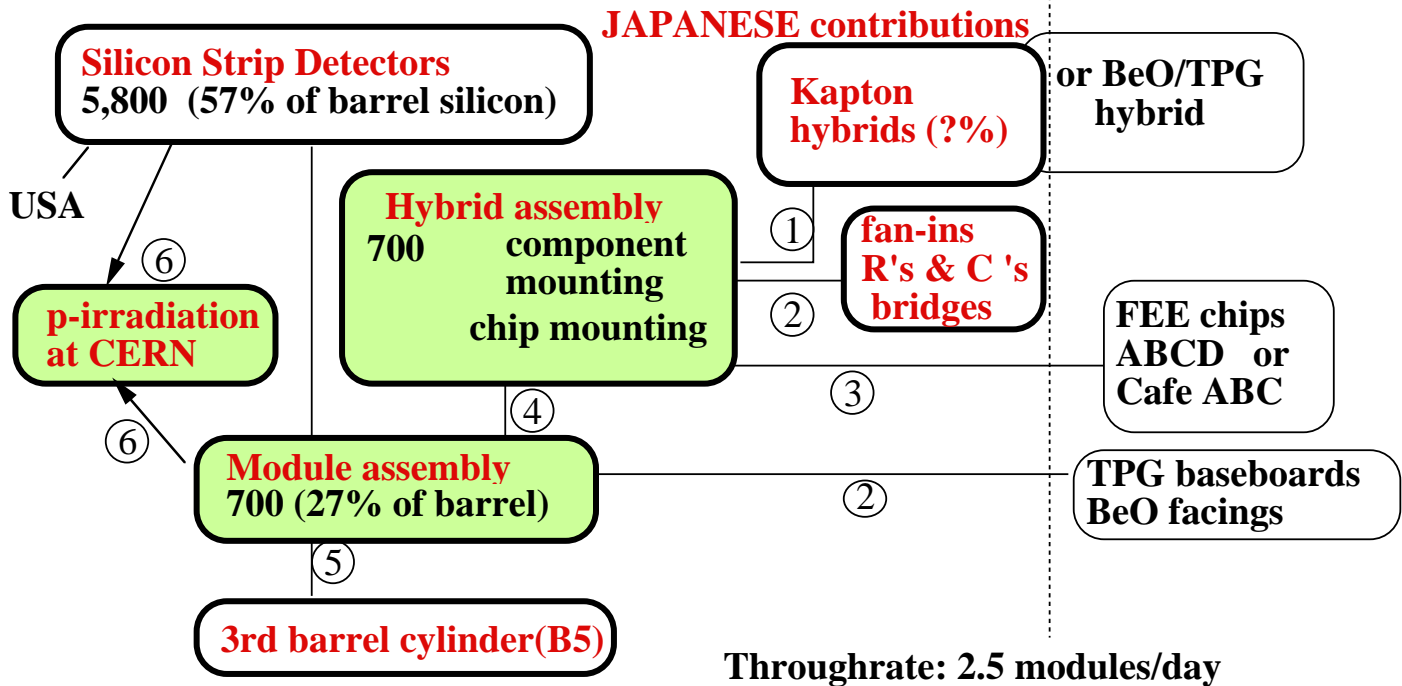


# Mass Production and Testing of Silicon Strip Modules (incl. Hybrid Testing and Irradiation Testing)



- ① open/short tests at factory → visual inspection at receive
- ② factory spec sheets → visual inspection at receive  
measure dimensions (sampling)
- ③ full tests → visual inspection at receive  
charge injection tests with probe card (opt.)
- ④ Mid-assembly tests (before wire-bonding to fan-in's)
  - 4-1 hybrid supply currents at room temperature
  - 4-2 Data run (gain, pedestal, noise)Final assembly tests
  - 4-3 temperature cycling (20-50°C, 10cycles, 40min/cycle)
  - 4-4 Data run (gain, pedestal, noise)
  - 4-5 burn-in (100hrs @T=20°C, <30%humidity, then 1hr@T=-15°C)
  - 4-6 Data run (gain, pedestal, noise)
- ⑤ Mid-assembly tests (before wire-bonding strips)
  - ~~5-0 I-V~~
  - 5-1 alignment (6 pts/sensor + 2 mounting pts=26 pts)Final module tests
  - 5-2 hybrid supply currents
  - 5-3 I-V (stability)
  - 5-4 data run
  - 5-5 temperature cycling (-20 to +20°C?) for 10 cycles at 40min/cycle
  - 5-6 data run
  - 5-7 100 hr burn-in at 20°C
  - 5-8 check deformation on metrology points at operating temperature
  - 5-9 data run with source/laser at operating temperature
- ⑥ Irradiation tests ( $3 \times 10^{14}$  p/cm<sup>2</sup> @T=-10°C)
  - IV (I<1mA@350V), CV, oxide puchthroughs, noise and charge collection