

Thin Film Igniter Capability

Experience

TT Electronics has over 25 years of experience in designing and manufacturing thin film igniters for a wide range of military and civilian applications:



- Quarry / mining blasting detonation
- Automotive airbag initiation
- Missile / munitions detonation
- Landmine clearing
- Flight termination systems
- Oil / gas well completion
- Rocket motor ignition
- Rocket staging
- Canopy jettison
- Payload releasing



Technologies

Two igniter technologies are available:

- Thermal Igniters

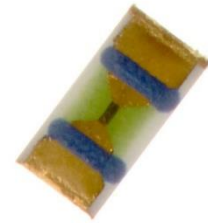
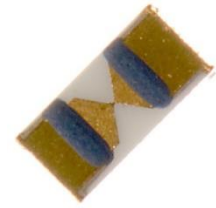
A thermal igniter converts electrical energy into heat providing a calibrated temperature rise at a focussed point to initiate a chain of pyrotechnic events.

- Percussive Igniters

Also known as exploding foil initiators or “slappers”, percussive igniters produce a deflagration output; a high pressure and temperature impulse providing the energy and shock needed to detonate less sensitive secondary explosives.

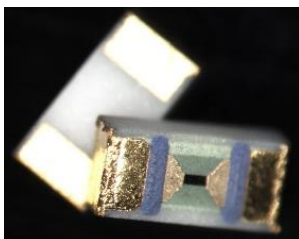
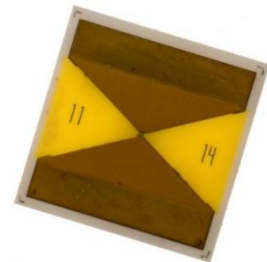
Thermal Igniters

- Bridge element
 - Self-passivating tantalum nitride film
 - High stability and long life
 - Fast response <100μs
 - Low energy initiation <200μJ
 - Low ESD sensitivity
 - Stable resistance during firing
 - Bridge resistances typically 2 to 10Ω ±10%
 - Bridge areas typically 5,000 to 25,000 sq. microns
- Terminations
 - Solderable terminations with nickel barrier
 - Gold or aluminum terminations for wire/ribbon bonding
- Substrate materials:
 - Alumina with or without glass layer
 - Aluminum nitride with or without glass layer
 - Silicon with thermal oxide layer
- Device format: standard or custom size chips, with or without wraparound terminations, typically 0402, 0603, 0805, 1206
- Compatible with various pyrotechnic materials



Percussive Igniters

- Bridge element
 - Aluminum or copper, typically 20 to 60mΩ
 - Polyimide flyer
 - Low energy initiation
 - Bridge sizes typically 0.006" x 0.006" to 0.012" x 0.012"
- Terminations
 - Solderable terminations with nickel barrier
 - Gold terminations for wire/ribbon bonding
- Substrate materials: polished alumina & others available
- Device Format: standard or custom size chips, with or without wraparound terminations, typically 0.120" x 0.060" to 0.250" x 0.250"
- Compatible with various pyrotechnic materials



Your Needs

To discuss how we can address your needs please contact our technical team at resistorgeneral@ttelectronics.com.