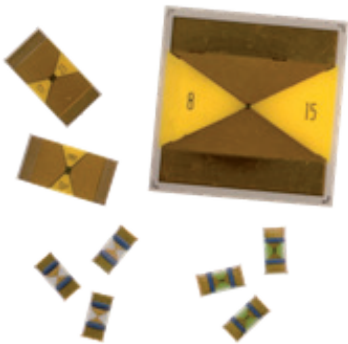


Electrical Pyrotechnic Igniter Devices

IGN Series

OBSOLETE

- Fast, reliable initiation of pyrotechnic applications
- 0603 chip thermal igniters
- Percussive “slapper” igniters
- Standard designs available for customer experimentation
- Custom design service



All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Product Description

IGN series offers precision-engineered solutions for electro-pyrotechnic ignition systems. The IGN line leverages decades of thin film design experience to produce customized solutions that provide fast, reproducible ignition. These products are based on two electrical igniter categories – thermal igniters and percussive igniters. The latter are also known as exploding foil initiators or “slappers”.

Thermal igniters are provided as standard 0603 chip packages allowing standard placement and solder reflow processes to be used for tightly controlled assembly onto headers. Percussive igniters may be provided in a customised package size to suit the application.

Product Examples

Thermal Igniters		Percussive Igniters	
0603 (1.6 x 0.8mm)		1307 (3.2 x 1.7)	2525 (6.4 x 6.4)
Converts electrical energy into heat providing a calibrated temperature rise at a focussed point in order to initiate a chain of pyrotechnic events.		Produces a deflagration output; a high pressure and temperature impulse providing the energy and shock needed to detonate less sensitive secondary explosives.	
<ul style="list-style-type: none">• Ceramic substrate with optional thermal isolation layer• Tantalum nitride thin film element• Other element & substrate materials		<ul style="list-style-type: none">• Ceramic substrate• Aluminium – polyimide element• Other element & substrate materials	

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

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Design and Specification

IGN igniters are custom engineered in an iterative, cooperative process, ensuring system success. Generic products may be provided for initial system evaluation, then the performance results lead to a bespoke design for the customer’s application. Cooperative engineering evaluation and communication over iterative design cycles will result in reaching an optimum product design. Critical parameters include the bridge dimensions and ohmic value.

Key application performance parameters specified by the customer include all-fire and no-fire conditions. All-fire conditions describe the energy and waveform applied which must initiate detonation. No-fire conditions describe the threshold electrical parameters that the circuit must withstand without ignition.

Construction

Conductors, thin film resistive element (tantalum nitride or specified metallic bridges) and other customer-determined layers are deposited to an alumina substrate using high resolution thin film processes. Outer plating may include a variety of customer-specified metals including, but not limited to, tin and gold.

Marking & Solvent Resistance

Custom marking in the thin film layer and printed marking of the non-active face to indicate orientation or lot number may be provided. The body protection and marking is resistant to all standard cleaning solvents suitable for printed circuits.

Packing

Thermal igniters in 0603 chip size are packed in tape with a standard quantity of 1000 pieces per reel. Custom chip sizes may be either tape or waffle packed.

Ordering Procedure

I	G	N	-	T	0	6	0	3	-	1	2	3	4
1		2		3			4						

1 Series	2 Category	3 Size	4 Design reference
IGN	P=Percussive T=Thermal	0603 Custom sizes	Supplied by engineering team