

Kokomo Semiconductor

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GM Components Holdings, LLC

PST5-03 Thermal Test Die

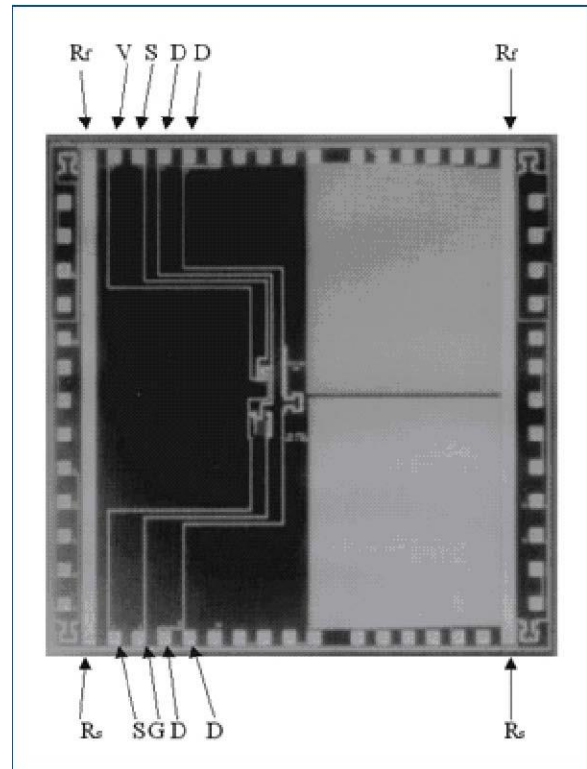
The Kokomo Semiconductor PST series of Thermal Test Die is used to determine thermal characteristics of a package, such as thermal resistance Junction to Case (Θ_{jc}) or Junction to Ambient (Θ_{ja}). These Thermal Test Die incorporate a heating element and typically, two independent methods for on-die temperature monitoring.

Resistive heating in the PST5 is accomplished by driving a current through a doped silicon well between a pair of bus bars, labeled R_s and R_f . The 4 R labeled pads accommodate Kelvin connections, if desired.

At the top and bottom of the die are a pair of pads, labeled D in the diagram, which connect a serial five-diode temperature sense network. Again, a four-pad layout allows Kelvin connections, if desired.

A second temperature monitoring circuit uses a bridge network by connecting the "V" at the top of the die and the "G" at the bottom of the die with one sense pin "S" at the top of the die and the other sense pin "S" at the bottom of the die.

The PST5 incorporates a feature not found on some of the smaller PST die (PST1 to PST3). The five-diode string from the center is duplicated in all four corners. The corner diode strings are connected in series such that each corner can be monitored individually while driven by a single current source. Numerous pads (labeled S) can be used to sense the diode voltage.



➤ Options Available

- Five-inch wafer, no bumps, nitride passivation, 182-micron circular passivation openings for wire bonding

➤ IC Fab Information

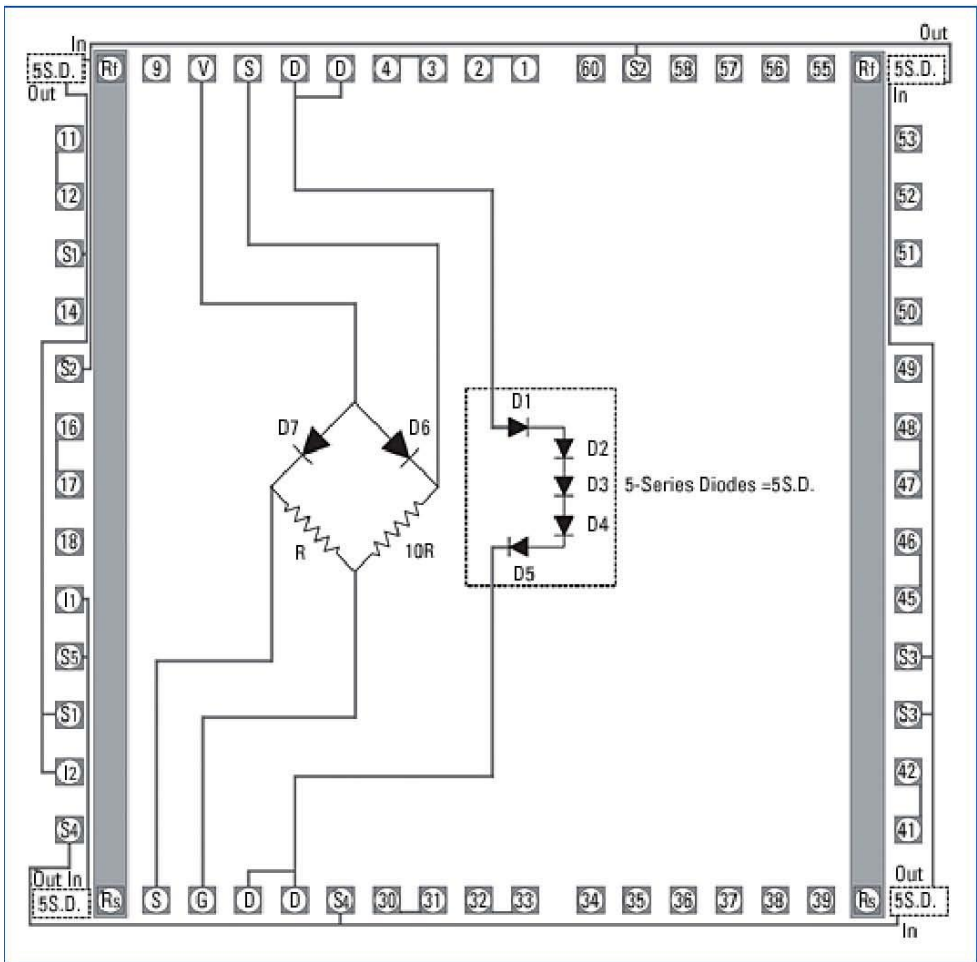
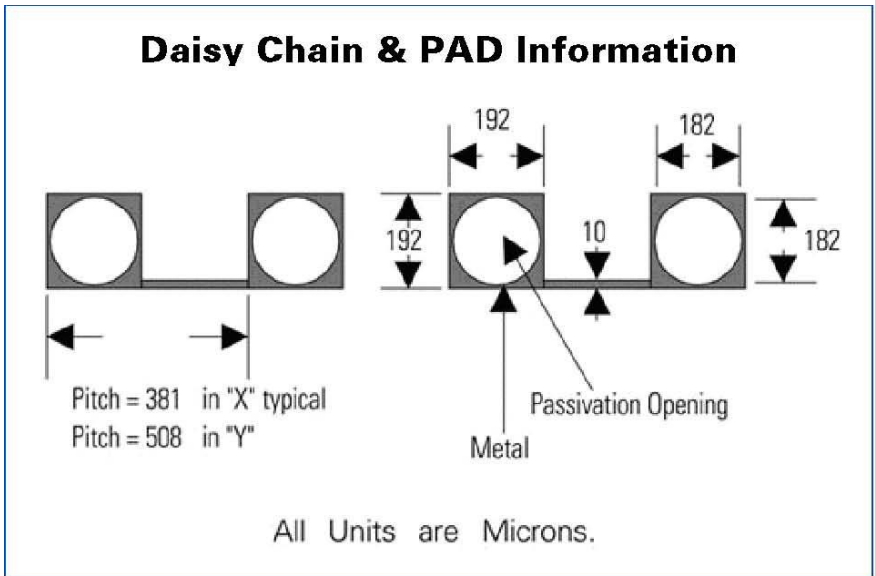
- Wafer size 5-inch (125 mm)
- Die thickness 610-660 microns
- Metal thickness 17k angstroms
- Metal composition Al/Cu/Si (98/1/1)
- Passivation thickness 10k angstroms
- Passivation type Nitride
- Silicon orientation 1-1-1
- Silicon type P

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PST5-03/3MX / X,Y Coordinates .306-Inch X .306-Inch Die Sizes (0,0) is located at the center of the die.							
Microns				Microns			
PIN#	NAME	X	Y	PIN#	NAME	X	Y
1	Pin1	210.5	3594.5	31	Pin31	-551.5	-3594.5
2	Pin2	-170.5	3594.5	32	Pin32	-170.5	-3594.5
3	Pin3	-551.5	3594.5	33	Pin33	210.5	-3594.5
4	Pin4	-927.5	3594.5	34	Pin34	875.5	-3594.5
5	D(1)	-1308.5	3594.5	35	Pin35	1256.5	-3594.5
6	D(2)	-1689.5	3594.5	36	Pin36	1637.5	-3594.5
7	S(1)	-2070.5	3594.5	37	Pin37	2018.5	-3594.5
8	V	-2451.5	3594.5	38	Pin38	2399.5	-3594.5
9	Pin9	-2832.5	3594.5	39	Pin39	2780.5	-3594.5
10	R f(1)	-3213.5	3594.5	40	R f(2)	3161.5	-3594.5
11	Pin11	-3594.5	2907.5	41	Pin41	3594.5	-3086.5
12	Pin12	-3594.5	2399.5	42	Pin42	3594.5	-2578.5
13	S1(1)	-3594.5	1891.5	43	S3(1)	3594.5	-2070.5
14	Pin14	-3594.5	1383.5	44	S3(2)	3594.5	-1562.5
15	S2(1)	-3594.5	875.5	45	Pin45	3594.5	-1054.5
16	Pin16	-3594.5	447.5	46	Pin46	3594.5	-550.5
17	Pin17	-3594.5	-51.5	47	Pin47	3594.5	-51.5
18	Pin18	-3594.5	-550.5	48	Pin48	3594.5	447.5
19	I1	-3594.5	-1054.5	49	Pin49	3594.5	874.5
20	S5	-3594.5	-1562.5	50	Pin50	3594.5	1383.5
21	S1(2)	-3594.5	-2070.5	51	Pin51	3594.5	1891.5
22	I2	-3594.5	-2578.5	52	Pin52	3594.5	2399.5
23	S4(1)	-3594.5	-3086.5	53	Pin53	3594.5	2907.5
24	R s	-3213.5	-3594.5	54	R f(3)	3161.5	3594.5
25	S(2)	-2832.5	-3594.5	55	Pin55	2780.5	3594.5
26	G	-2451.5	-3594.5	56	Pin56	2399.5	3594.5
27	D(3)	-2070.5	-3594.5	57	Pin57	2018.5	3594.5
28	D(4)	-1689.5	-3594.5	58	Pin58	1637.5	3594.5
29	S4(2)	-1308.5	-3594.5	59	S2(2)	1256.5	3594.5
30	Pin30	-927.5	-3594.5	60	Pin60	875.5	3594.5

The test die offered on this web site is to be used to characterize assembly processes and materials. Applying the data from the test die to a functional system is the responsibility of the user. Kokomo Semiconductor makes no warranty, express or implied including the implied warranties of merchantability and fitness for a particular purpose, that the user's system designed using that data will perform as intended.