

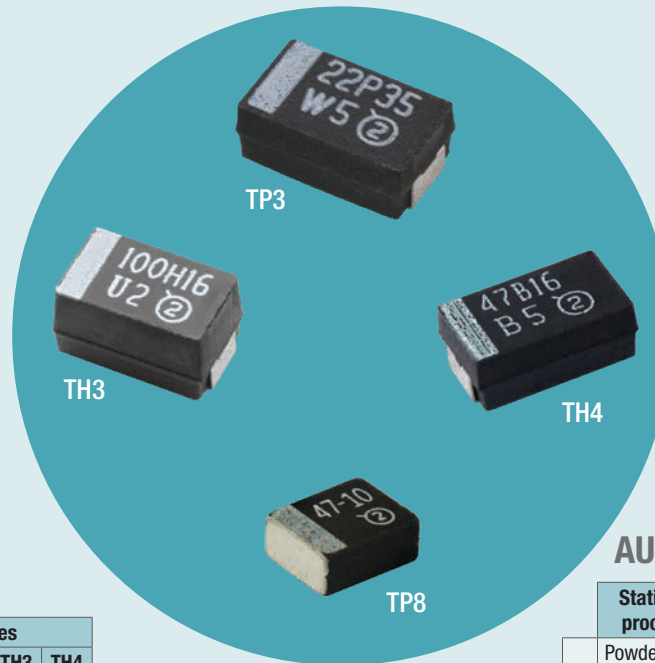


# AUTOMOTIVE GRADE TANTALUM CAPACITORS

## HIGH PERFORMANCE, HIGH TEMPERATURE, SMALL SIZES

# IN A NUTSHELL

Solid Tantalum Surface-Mount Chip Capacitors, Molded Case		
Series	Feature	AUTOMOTIVE GRADE
TP3	High Performance High Reliability	✓
TH3	150 °C	✓
TH4	175 °C	✓
TP8	Leadframeless, High CV	✓



### PERFORMANCE CHARACTERISTICS

[www.vishay.com/docs/40215/typperfmoldedchipcaps.pdf](http://www.vishay.com/docs/40215/typperfmoldedchipcaps.pdf)

### AUTOMOTIVE APPLICATIONS

Application	Series	TP3	TP8	TH3	TH4
Power train	Gasoline direct injection			x	x
	Transmission	x		x	x
	Oil & water pump	x		x	x
	Oil quality sensor			x	x
Passive safety	Airbag			x	x
	Tire pressure monitoring sensor (TPMS)		x		
Active safety	Anti-lock braking system (ABS)			x	x
	Lane departure camera	x	x		
	Electric stability program (ESP)	x			
Passive safety	Key less entry		x		
	Smart airbag igniter	x		x	
Chassis	Electronic power steering (EPS)	x		x	
	Electrical park break			x	x
Body control	Heating, ventilation, air-con	x		x	x
	LED lighting	x	x	x	x
	Charging control	x			x
Infotainment & navigation	Disply and contoller LDO	x	x		
Surround view camera	FPGA power supply	x	x		
Electric vehicle	On-board charger		x		

#### QUALITY

- IATF 16949
- AEC-Q200
- TAQ:
  - LAT
  - Maverick lots
  - Error proofing
  - 6 Sigma
  - FMEA



AEC-Q200  
PPAP available

### AUTOMOTIVE GRADE FOR SUPERIOR QUALITY

	Station / process	Automotive Grade	Standard
Front End	Powder preparation	Use of single powder batch	Use of mixed powder batches
	Pressing / Sintering	Pellet lot from single powder batch	No requirement
	Formation	Visual inspection for coating dimensions: 5 pellet per bar x 3 bars per lot.	No requirement
	Cap test	Conductivity monitoring	No requirement
	Silver check	Visual inspection x3: 3 bars per rack (zero defect allowed)	Visual inspection, 4 bars per lot
Assembly	Assembly	Inspection of each 5 <sup>th</sup> LF (zero defect allowed) 100 % VI after assembly	Inspection of each 9 <sup>th</sup> LF (specified allowed failure rate) No requirement
		Special technician inspection and adjustment after each no weld detected	No requirement
	Electrical test	Redundant test	Single test (A / B / C cases); redundant test (D / E cases)
	Surge test	B, C, D, and E cases	D and E cases
	Labeling	Autolabeling attachment only	No requirement
	QC		Scan / scan verification of each reel LAT and Maverick lot inspection