




































































































APPLICATION MATRIX

THERMISTORS / VARISTORS



MARKET SEGMENT	APPLICATIONS	PRODUCT TYPE / SERIES									
		NTC ⁽¹⁾				RTD		PTC		MOV	
		NTCS	NTCC	NTCLE	NTCA	PTS, PTS AT	TFPT	PTCEL, PTCCCL	VDRUS, VDRH		
Automotive Hybrid (HEV) and Full Electric (EV) 	Electric Motor Drives / Inverters (DC/AC) 										
	Battery Management Systems (DC/DC) 										
	On- and Off-Board Charging / Plugs 										
	Exterior Lighting (LED daylights, fog, headlights, signal) 										
	Safety Systems (Airbag, ADAS, braking / stability control, tire monitoring, LiDAR) 										
	Body Electronics (Comfort / HVAC, infotainment, interior lighting, latch controls, seating, gesture control) 										
Industrial 	Factory Automation (Motor drives, lasers, robotics, LVPS, process control, test and instrumentation) 										
	Fabrication (Welding, cutters, 3D printing, power tools) 										
	Lighting (Industrial LED, lighting ballast) 										
	Appliance (HVAC, refrigeration / freezer, water heaters, pumps, drinking fountains, elevators) 										
	Meters (Electrical, water, gas, payment systems) 										
	Detection and Initial Safety Devices (Gas, fire, thermostat, liquid level, fault indication, concrete sensors, fracking detonation) 										
	Surveillance Systems (Cameras, access control, door / gate, RFID) 										
Medical 	Imaging Systems (X-ray, CT, MRI) 										
	Implantable (Cardiac pacing, nerve stimulation, non-life saving / sustaining) 										
	Portable Medical (Defibrillators, CPAP, oxygenators, irrigation tools, hypothermia devices, radiation) 										
	Patient Monitoring (Analysis equipment, incubators, body temperature probes, sensors) 										
	Medical Appliances (Refrigeration, heating) 										
	Meters (Blood glucose, wearables) 										

Note
⁽¹⁾ Customization options available; minimums apply

Accelerating Product Design Cycles
Vishay's Design Tools Complemented With Excellent Technical Support Allow Engineers to Cost-Effectively Prove Out Design Concepts Through Simulation
 Design Tools
 SPICE Models
 3D Models



APPLICATION MATRIX

THERMISTORS / VARISTORS



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		NTC ⁽¹⁾				RTD		PTC		MOV	
		NTCS	NTCC	NTCLE	NTCA	PTS, PTS AT	TFPT	PTCEL, PTCLL	VDRUS, VDRH		
Consumer 	Wearable / Consumer Electronics (Smart watches, fitness bands, e-cigarettes, alcohol testers)										
	Home Entertainment / Automation (Set-top boxes, audio, security systems, smart home (thermostat, lighting, etc.))										
	Toys / Outdoor Equipment (Remote controlled vehicles, tools, battery packs / chargers, fish finders)										
	e-Bikes / Scooters										
	Home Appliances (HVAC, cooker, laundry, refrigeration, countertop appliances, water heaters, pool / spa)										
	Robotic Appliances / Domestic Robots (Robotic vacuums, lawnmowers, companions)										
	Lighting (LED, OLED displays, conventional lighting controls)										
Alternative Energy 	Photovoltaic (Sensor module, junction box, meter, monitoring)										
	Wind (System control unit, backup safety system)										
	Electrical Power Distribution / Grid Stabilization (Smart grid)										
	Thermal Systems										
	Battery Systems										
	Inverters										
Avionics, Military, and Space 	Satellite / GPS (Electric motors, gearbox controls, battery systems, gyro navigation, communication)										
	Airborne Systems (Engine control units, braking, fuel / oil, battery systems, weapon fusing, radar)										
	Cockpit / Avionics (HVAC, flight controls, latch controls, fire control, infotainment, interior lighting)										
	UAVs / Drones (Engine control units, electric motors, flight controls, battery systems)										

Note
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