

# Thyristors

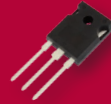
High Voltage (Up to 1600 V)

12...25TTS in TO-220 and D<sup>2</sup>PAK



High Voltage (Up to 1600 V)

40TPS / 50TPS Series



High Voltage (Up to 1600 V)

ST230 Series



AEC-Q101 Thyristors for Automotive Applications

AEC-Q101 THYRISTORS



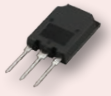
High Voltage (Up to 1600 V)

16...25TTS in TO-220 FullPAK



High Current (Up to 70 A)

70TPS Series



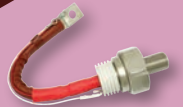
1650 A, 2000 V

ST1200 Series



330 A, Up to 2000 V








ST330S Series











# THYRISTORS

## Focus Products






### Glass Passivated Thyristors in TO-220 and TO-220 FullPAK Packages

Series	$I_{F(AV)}$ (A)	$V_{RRM}$ (V)	$V_{TM}$ at 25 °C (V)	$I_{GT}$ (mA)	Package
 <b>VS-10TTS08-M3</b> Halogen-free	6.5	800	1.15	15	TO-220AB
 <b>VS-12TTS08-M3</b> Halogen-free	6.5	800	1.2	15	TO-220AB
 <b>VS-16TTS12-M3</b> High voltage; halogen-free	10	Up to 1600	1.4	60	TO-220AB
 <b>VS-16TTS12FP-M3</b> Isolated TO-220 FullPAK; high voltage; halogen-free	10	Up to 1600	1.4	60	TO-220AB FullPAK
 <b>VS-25TTS12-M3</b> High voltage; halogen-free	16	Up to 1600	1.25	45	TO-220AB
 <b>VS-25TTS12FP-M3</b> Isolated TO-220 FullPAK; high voltage; halogen-free	16	Up to 1600	1.25	45	TO-220AB FullPAK
 <b>VS-40TTS12-M3</b> Halogen-free	25	Up to 1600	1.6	35	TO-220AB

### Glass Passivated Thyristors in D<sup>2</sup>PAK and TO-247 Packages

Series	$I_{F(AV)}$ (A)	$V_{RRM}$ (V)	$V_{TM}$ at 25 °C (V)	$I_{GT}$ (mA)	Package
 <b>VS-10TTS08S-M3</b> Halogen-free	6.5	800	1.15	15	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-12TTS08S-M3</b> Halogen-free	6.5	800	1.2	15	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-16TTS16S-M3</b> High voltage; halogen-free	10	Up to 1600	1.4	60	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-25TTS16S-M3</b> High voltage; halogen-free	16	Up to 1600	1.25	45	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-30TPS16-M3</b> High voltage (up to 1600 V); halogen-free	20	Up to 1600	1.3	45	TO-247AC
 <b>VS-40TPS16-M3</b> High voltage (up to 1600 V); low $I_{GT}$ available; halogen-free	35	Up to 1600	1.45	150	TO-247AC
 <b>VS-50TPS12L-M3</b> Long Lead TO-247 package; high $T_j$ max. (150 °C); high $dV/dt$ (1000 V/μs)	50	1200	1.2	100	TO-247L
 <b>VS-70TPS16PBF</b> High current; high voltage (up to 1600 V)	70	Up to 1600	1.4	100	Super TO-247

















### AEC-Q101 Qualified Glass Passivated Thyristors for Automotive Applications

Series	$I_{RMS}$ (A)	$V_{RRM} / V_{DRM}$ (V)	$V_{TM}$ at 25 °C (V)	$I_{GT}$ (mA)	Package
 <b>VS-12TTS08SLHM3</b> AEC-Q101 qualified; halogen-free	12	800	1.2	15	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-25TTS12SLHM3</b> AEC-Q101 qualified; halogen-free; 1600 V available; TO-220 version available	25	1200	1.25	45	D <sup>2</sup> PAK (TO-263AB)
 <b>VS-30TPS12LHM3</b> AEC-Q101 qualified; high voltage (up to 1600 V); halogen-free; long lead TO-247 package	30	1200	1.3	45	TO-247L
 <b>VS-40TPS12LHM3</b> AEC-Q101 qualified; high voltage (up to 1600V); low $I_{GT}$ available; halogen-free; long lead TO-247 package	55	1200	1.45	150	TO-247L
 <b>VS-50TPS12LHM3</b> AEC-Q101 qualified; halogen-free; long lead TO-247 package	79	1200	1.32	100	TO-247L



# THYRISTORS

## Focus Products

Hockey Puck Capsule Phase Control Thyristors (A-PUK, E-PUK, B-PUK, and K-PUK)						
	Series	$I_{F(AV)}$ (A)	$V_{RRM}$ (V)	$V_{TM}$ at 25 °C (V)	$I_{GT}$ (mA)	Package
Center amplifying gate; hermetic metal case with ceramic insulator						
	ST180C Series	350	400 to 2000	1.96	90	A-PUK (TO-200AB)
	ST230C Series	410	400 to 2000	1.69	90	E-PUK (TO-200AB)
	ST300C Series	650	400 to 2000	2.18	100	E-PUK (TO-200AB)
	ST330C Series	720	400 to 1600	1.96	100	E-PUK (TO-200AB)
	ST650C Series	790	2000 to 2400	2.07	100	B-PUK (TO-200AC)
	ST730CL Series	990	800 to 2000	1.62	100	B-PUK (TO-200AC)
	ST1000C Series	1473	1200 to 2600	1.8	100	K-PUK (A-24)
	ST1200C Series	1650	1200 to 2000	1.73	100	K-PUK (A-24)
	ST1230C Series	2310	800 to 1600	1.44	100	K-PUK (A-24)
Stud-Mounted Phase Control Thyristors						
	Series	$I_{F(AV)}$ (A)	$V_{RRM}$ (V)	$V_{TM}$ at 25 °C (V)	$I_{GT}$ (mA)	Package
Hermetic glass-metal seal; international standard case						
	25RIA Series	25	100 to 1200	1.7	60	TO-48 (TO-208AA)
	50RIA Series	50	100 to 1200	1.6	100	TO-65 (TO-208AC)
	80RIA Series	80	400 to 1200	1.6	120	TO-94 (TO-209AC)
	180RKI Series	180	400 to 1000	1.35	65	TO-93 (TO-209AB)
Hermetic glass-metal seal; hermetic package; compression bonded encapsulation for heavy duty operations such as severe thermal cycling						
	ST230S Series	230	800 to 1600	1.55	150	TO-93 (TO-209AB)
	ST280S Series	280	400 and 600	1.28	150	TO-93 (TO-209AB)
Metal case with ceramic insulator; hermetic package; compression bonded encapsulation for heavy duty operations such as thermal cycling						
	ST330S Series	330	400 to 2000	1.52	200	TO-118 (TO-209AE)

# Vishay Offers a Broad Range of Thyristors From Plastic Discrete to Robust and Highly Reliable Hermetic Ceramic and Metal Housing

## Advantages of Vishay Thyristors

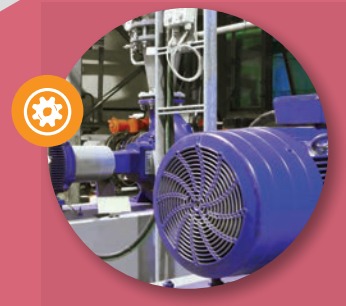
- High voltage
- Through-hole, surface-mount, ceramic, and stud-mounted packages
- Bare die also available
- International standard packages

## For the Following Applications

- Onboard chargers for fully electric vehicles and plug-in hybrid electric vehicles
- Industrial power supplies: chemical use, plating power supplies, power supplies for temperature control of high power furnaces
- High voltage input rectification (soft start)
- AC switches, UPS, welding
- Motor control
- Controlled DC power supplies
- Battery chargers
- Induction heating



AEC-Q101 qualified thyristors offer voltages up to 1600 V and are ideal for fully electric vehicles and plug-in hybrid vehicles



SCR thyristors in hockey puck and stud styles provide a rugged and highly reliable solution for the most demanding industrial applications



- Thyristors – Phase Control Discrete  
[www.vishay.com/thyristors/phase-control-discrete/](http://www.vishay.com/thyristors/phase-control-discrete/)
- Thyristors – Fast Discrete  
[www.vishay.com/thyristors/fast-discrete/](http://www.vishay.com/thyristors/fast-discrete/)

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