Transil Suppressor Diodes

Diotec Semiconductor

are passive electronic components used to protect sensitive electronics from voltage spikes induced on connected wires. Their wide range of application is in the protection of computer and telecommunication technology, in automobile industry, but also in the 230V network distribution.

They are produced in two versions:

1) Unidirectional

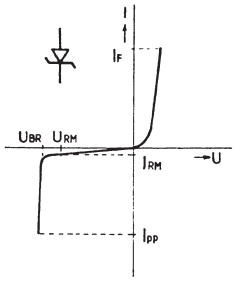
2) Bidirectional

The device operates by shunting excess current when the induced voltage exceeds the avalanche breakdown potential. It is a clamping device, suppressing all overvoltages above its breakdown voltage. Like all clamping devices, it automatically resets when the overvoltage goes away, but absorbs much more of the transient energy internally than a similarly rated crowbar device.

A transient voltage suppression diode may be either unidirectional or bidirectional. An unidirectional device operates as a rectifier in the forward direction like any other avalanche diode, but is made and tested to handle very large peak currents. The popular 1.5KE series allows 1500 W of peak power, for a short time.

A bidirectional transient voltage suppression diode can be represented by two mutually opposing avalanche diodes in series with one another and connected in parallel with the circuit to be protected. While this representation is schematically accurate, physically the devices are now manufactured as a single component.

A transient voltage suppression diode can respond to over-voltages faster than other common over-voltage protection components such as varistors or Zener diodes. The actual clamping occurs in roughly one picosecond, but in a practical circuit the inductance of the wires leading to the device imposes a higher limit. This makes transient voltage suppression diodes useful for protection against very fast and often damaging voltage transients. These fast over-voltage transients are present on all distribution networks and can be caused by either internal or external events, such as lightning or motor arcing.



UBR[V] = breakdown voltage

URM[V] = stand-off voltage

	Part No.	Ord.No.	Manufact.	Original marking	Ubr[V]	Urm[V]	Housing
600W/1ms Transil diodes, unidirectional = A suffix, bidirectional = CA suffix							
S	P 6 SMB 6,8 A	6464	DIOTEC	P6SMBJ5V8A	6,8	5,8	DO-214AA
S	P 6 SMB 15 A	6977	DIOTEC	P6SMBJ13A	15	12,8	DO-214AA
S	P 6 SMB 18 A	6978	DIOTEC	P6SMBJ15A	18	15,3	DO-214AA
S	P 6 SMB 33 A	6979	DIOTEC	P6SMBJ28A	33	28,2	DO-214AA
S	P 6 SMB 6,8 CA	5525	DIOTEC	P6SMBJ5V8CA	6,8	5,8	DO-214AA
S	P 6 SMB 15 CA	6975	DIOTEC	P6SMBJ13CA	15	12,8	DO-214AA
S	P 6 SMB 18 CA	6250	DIOTEC	P6SMBJ15CA	18	15,3	DO-214AA
S	P 6 SMB 33 CA	6976	DIOTEC	P6SMBJ28CA	33	28,2	DO-214AA
600W/1ms Transil diodes, unidirectional = without suffix, bidirectional = B suffix							
S	BZW 06-5V8	29451	DIOTEC	P6KE6,8A	6,8	5,8	DO-15
S	BZW 06-5V8 B	29460	DIOTEC	P6KE6,8CA	6,8	5,8	DO-15
S	BZW 06-13	5317	DIOTEC	P6KE15A	15	13	DO-15
S	BZW 06-15	29453	DIOTEC	P6KE18A	18	15	DO-15
S	BZW 06-26	29456	DIOTEC	P6KE30A	30	26	DO-15
S	BZW 06-33	29459	DIOTEC	P6KE39A	39	33	DO-15
S	BZW 06-10 B	29484	DIOTEC	P6KE12CA	12	10	DO-15
S	BZW 06-13 B	29485	DIOTEC	P6KE15CA	15	13	DO-15
S	BZW 06-15 B	29486	DIOTEC	P6KE18CA	18	15	DO-15
S	BZW 06-23 B	29488	DIOTEC	P6KE27CA	27	23	DO-15
S	BZW 06-26 B	29489	DIOTEC	P6KE30CA	30	26	DO-15
S	BZW 06-33 B	29491	DIOTEC	P6KE39CA	39	33	DO-15
S	BZW 06-48 B	29496	DIOTEC	P6KE56CA	56	48	DO-15
S	BZW 06-376 B	29504	DIOTEC	P6KE440CA	440	376	DO-15
1500W/1ms Transil diodes, unidirectional = A suffix, bidirectional = CA suffix							
S	1,5 KE 6,8 A	6429	DIOTEC		6,8	5,8	DO-201
S	1,5 KE 6,8 CA	6433	DIOTEC		6,8	5,8	DO-201
S	1,5 KE 18 A	29468	DIOTEC		18	15,3	DO-201
S	1,5 KE 33 A	29473	DIOTEC		33	28,2	DO-201
S	1,5 KE 47 A	29476	DIOTEC		47	40,2	DO-201
S	1,5 KE 18 CA	29494	DIOTEC		18	15,3	DO-201
S	1,5 KE 33 CA	29499	DIOTEC		33	28,2	DO-201
S	1,5 KE 36 CA	29500	DIOTEC		36	30,8	DO-201
O	1,5 KE 39 CA	29501	DIOTEC		39	33	DO-201
S	1,5 KE 47 CA	2640	DIOTEC		47	40,2	DO-201
S	1,5 KE 400 A	5315	DIOTEC		400	342	DO-201
S	1,5 KE 400 CA	5316	DIOTEC		400	342	DO-201
S	1,5 KE 440 CA	9287	DIOTEC		440	376	DO-201
S	DVIULC6-4SC6	68080			6	5	SOT23-6L

DO-214AA

DO-15

DO-201

SOT23

Housing dimensions can be found in the back of the catalogue. Above presented Transil diodes are 5%, we are able to supply also cost effective 10% Transil diodes on order.

We supply 150W Transil diodes TGL34, 400W Transil diodes BZW 04 (P4KE) and P4 SMA, 1500W Transil diodes 1.5 SMCJ. 5000W Transil diodes 5KP are supplied on order. Alternatively we also supply P6KE Transil diode series. Please, inquire about the prices and minimum quantities.