

# 5 kW Surface Mount TVS Diode

## Full Voltage Range for Optimal Power Systems



Servers operate around the clock. It is important that the server motherboard supports “hot-swap” capability so that the system can be updated and maintained without being shut down. However, transient voltage can occur during hot-swap, and this spike can damage the device used to update or maintain the system or the server system itself, by using the right TVS diode, such damage can be limited. PANJIT’s 5 kW unidirectional TVS diode comes in a broad voltage range, making it suitable for each server power system design. This series of TVS diodes also comes in bidirectional, which are broadly used for I/O Interfaces and VCC bus protection.

### ► Features

- Unidirectional TVS diode targeting server hot-swap application
- Bidirectional TVS diode for I/O Interfaces and VCC bus protection
- High reverse surge capability up to 5 kW
- High peak pulse current
- Low clamping voltage

### ► Applications

Server



Robot



Industrial Power



Fan Tray



## ► Hot-Swap TVS Diode Selection Criteria

- The voltage breakdown should be greater than the maximum power-supply input voltage required.
- Ensure the clamping voltage is below the maximum rating of the hot-swap controller IC or MOSFET  $V_{DS}$ .
- Ensure the peak pulse current rating is above the peak current at which the hot-swap controller will shut off. It is recommended to measure the peak current on an actual board, with a realistic short circuit applied to the output.

## ► Recommended Parts

### 12 V Power System

Part Number		$P_D$	$V_{RWM}$	$V_{BR}$			$I_R$		$V_C @ I_{PP} \text{ Max.}$	$I_{PP}$
				Min.	Max.	$I_T$	UNI	BI		
UNI	BI	W	V	V	V	mA	$\mu A$	$\mu A$	V	A
5KMC12AS	5KMC12CAS	5000	12	13.3	14.7	10	5	5	19.9	252
5KMC13AS	5KMC13CAS	5000	13	14.4	15.9	10	5	5	21.5	233
5KMC14AS	5KMC14CAS	5000	14	15.6	17.2	10	5	5	23.2	216
5KMC15AS	5KMC15CAS	5000	15	16.7	18.5	1	5	5	24.4	205

### 24 V Power System

Part Number		$P_D$	$V_{RWM}$	$V_{BR}$			$I_R$		$V_C @ I_{PP} \text{ Max.}$	$I_{PP}$
				Min.	Max.	$I_T$	UNI	BI		
UNI	BI	W	V	V	V	mA	$\mu A$	$\mu A$	V	A
5KMC24AS	5KMC24CAS	5000	24	26.7	29.5	1	5	5	38.9	129
5KMC26AS	5KMC26CAS	5000	26	28.9	31.9	1	5	5	42.1	119
5KMC28AS	5KMC28CAS	5000	28	31.1	34.4	1	5	5	45.4	110
5KMC30AS	5KMC30CAS	5000	30	33.3	36.8	1	5	5	48.4	103

### 48 V Power System

Part Number		$P_D$	$V_{RWM}$	$V_{BR}$			$I_R$		$V_C @ I_{PP} \text{ Max.}$	$I_{PP}$
				Min.	Max.	$I_T$	UNI	BI		
UNI		W	V	V	V	mA	$\mu A$	$\mu A$	V	A
5KMC48AS		5000	48	53.3	58.9	1	5	-	77.4	64.7
5KMC51AS		5000	51	56.7	62.7	1	5	-	82.4	60.7
5KMC54AS		5000	54	60.0	66.3	1	5	-	87.1	57.5
5KMC58AS		5000	58	64.4	71.2	1	5	-	93.6	53.5
5KMC60AS		5000	60	66.7	73.7	1	5	-	96.8	51.7