

45A, 1200V Standard Rectifier

Description

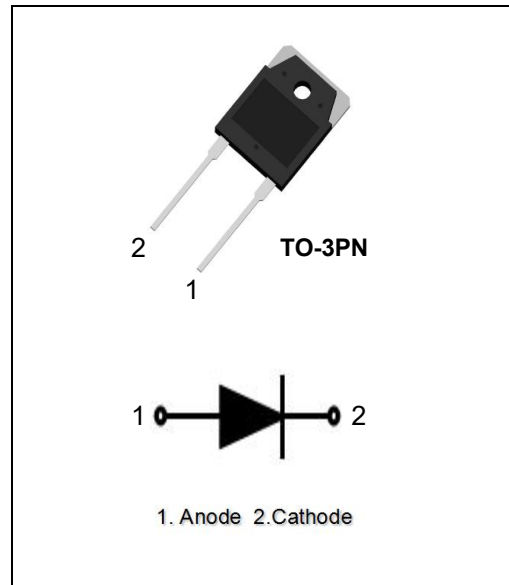
The AKDA45-12S is a Standard Rectifier. It's a SIPOS+GPP double passivation chip, with high reliability. It has low leakage current and low forward voltage drop, Improved thermal behaviour

Features

- Typical Forward Voltage: $V_F=1.25V@ I_F=45A$
- Reverse Voltage: $V_{RRM}=1200V$
- Avalanche Energy Rated
- SIPOS+GPP double passivation

Applications

- Diode for main rectification
- For single and three phase
- Bridge configurations



Absolute Maximum Ratings per diode at $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter		Ratings	Unit	
V_{RRM}	Peak Repetitive Reverse Voltage		1200	V	
V_{RWM}	Working Peak Reverse Voltage		1200	V	
V_R	DC Blocking Voltage		1200	V	
$I_{F(AV)}$	Average Rectified Forward Current	per device at $T_C=120^\circ\text{C}$	45	A	
I_{FSM}	Non-repetitive Peak Surge Current	t = 10 ms (50 Hz), sine	$T_{VJ}= 45^\circ\text{C}$ $V_R = 0\text{ V}$	500	A
			$T_{VJ}= 150^\circ\text{C}$ $V_R = 0\text{ V}$	420	
I^2t	value for fusing	t = 10 ms (50 Hz), sine	$T_{VJ}= 45^\circ\text{C}$ $V_R = 0\text{ V}$	1130	A ² S
			$T_{VJ}= 150^\circ\text{C}$ $V_R = 0\text{ V}$	820	
T_J	Operating Junction Temperature Range		-40~+150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range		-40~+150	$^\circ\text{C}$	

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.55	$^{\circ}C/W$

Electrical Characteristics per diode @ $T_c=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	$I_F=45A$	-	1.25	1.50	V
		$I_F=45A, T_c=120^{\circ}C$	-		1.23	V
I_R	Reverse Leakage Current	$V_R=1200V$	-	-	1	mA

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

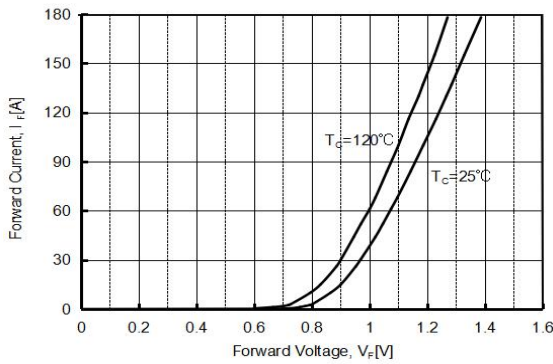


Fig. 2. Typical Characteristics: V_R vs. I_R

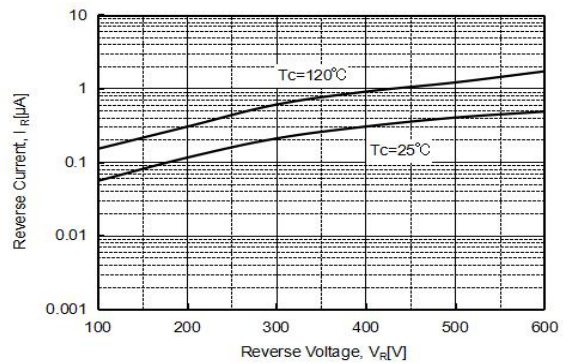
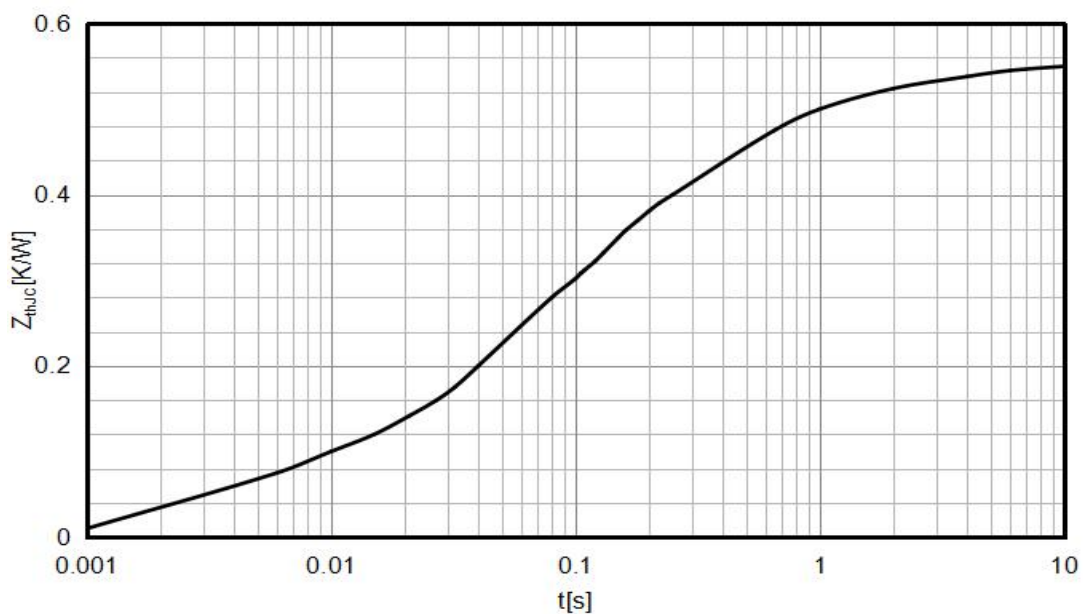


Fig. 3. Transient thermal impedance junction to case



Package Dimensions

TO-3PN

(Dimensions in Millimeters)

