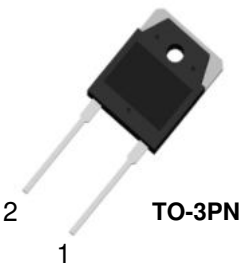
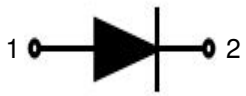
45A, 1600V Standard Rectifier

Description

The AKD45160SN 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.





1. Anode 2.Cathode

Features

- Typical Forward Voltage: V_F=1.1V@ I_F=45A
- Reverse Voltage: V_{RRM}=1600V
- 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 ℃ unless otherwise noted

Symbol	Parameter			Ratings	Unit
V_{RRM}	Peak Repetitive Reverse Voltage			1600	V
V_{RWM}	Working Peak Reverse Voltage			1600	V
V_R	DC Blocking Voltage			1600	V
$I_{F(AV)}$	Average Rectified Forward Current	per device at T_C=120℃		45	A
I_{FSM}	Non-repetitive Peak Surge Current	t = 10 ms (50 Hz), sine	T_{VJ}= 45℃ V_R = 0 V	600	A
			T_{VJ}= 150℃ V_R = 0 V	500	
I^2t	value for fusing	t = 10 ms (50 Hz), sine	T_{VJ}= 45℃ V_R = 0 V	1130	A^2S
			T_{VJ}= 150℃ V_R = 0 V	820	
T_J	Operating Junction Temperature Range			-40~+150	℃
T_{STG}	Storage Temperature Range			-40~+150	℃

Thermal Characteristics

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

Electrical Characteristics per diode @T_C=25 ℃ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage Drop	I_F=45A	-	1.1	1.50	V
		I_F=45A, T_C=120℃	-		1.23	V
I_R	Reverse Leakage Current	V_R=1600V	-	-	1	mA

Typical Performance Characteristics

Fig. 1. Typical Characteristics: V_F vs. I_F

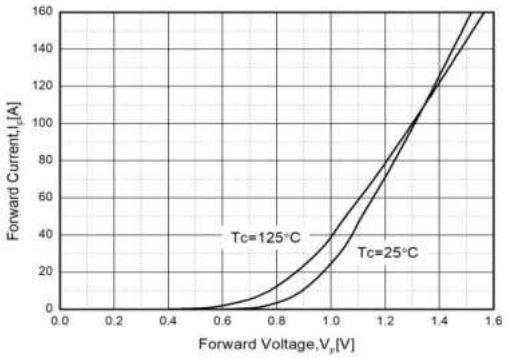


Fig. 2. Typical Characteristics: V_R vs. I_R

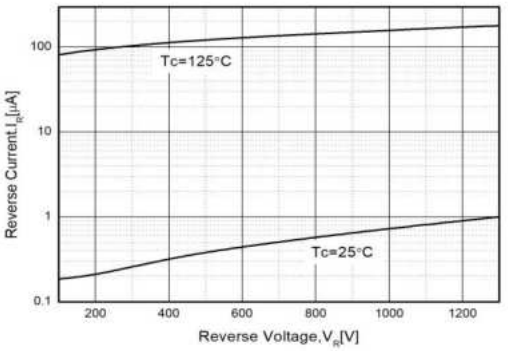
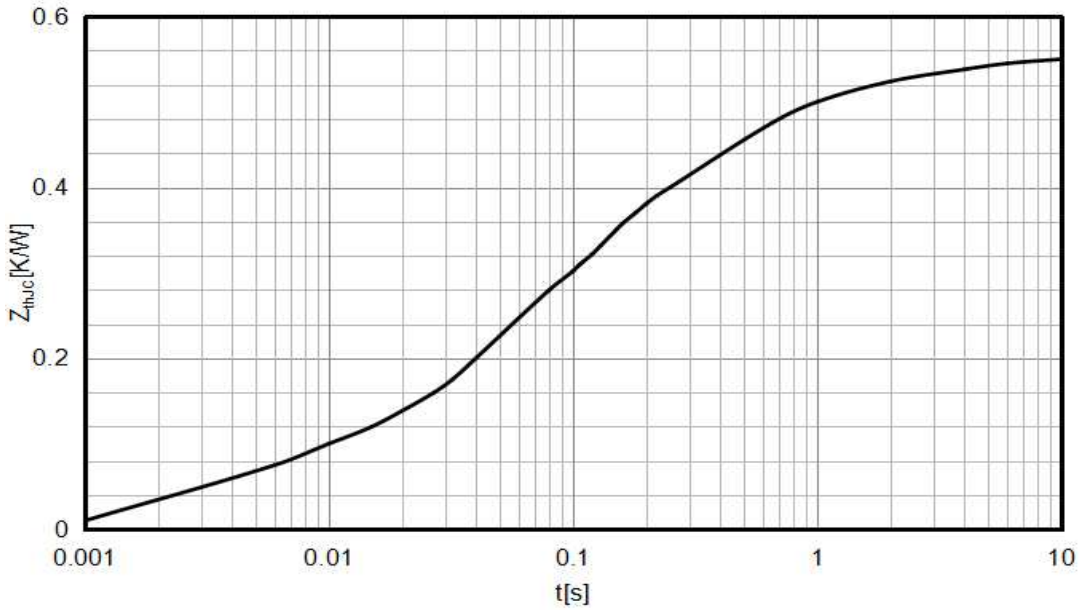


Fig. 3. Transient thermal impedance junction to case



Package Dimensions

TO-3PN

(Dimensions in Millimeters)