# KODENSHI AUK

# SDB3045PI

**Schottky Barrier Rectifier** 

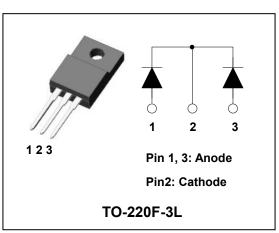
### **DUAL COMMON CATHODE SCHOTTKY RECTIFIER**

#### Features

- Low forward voltage drop and leakage current
- Low power loss and High efficiency
- High surge capacity
- Dual common cathode rectifier
- Full lead (Pb)-free and RoHS compliant device

#### **Applications**

- Power supply Output rectification
- Converter
- Free-wheeling
- Reverse battery protection
- Power inverters



#### Product Characteristics

I <sub>F(AV)</sub>	2 X 15A		
V <sub>RRM</sub>	45V		
V <sub>FM</sub> at 125℃	0.58V		
I <sub>FSM</sub>	210A		

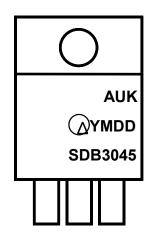
#### Description

The SDB3045PI has two schottky barriers arranged in a common cathode configuration. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

#### **Ordering Information**

Device	Marking Code	Package	Packaging
SDB3045PI	SDB3045PI SDB3045		Tube

### **Marking Information**



AUK = Manufacture Logo Δ = Control Code of Manufacture YMDD = Date Code Marking -. Y = Year Code -. M = Monthly Code -. DD = Daily Code SDB3045 = Specific Device Code

### Absolute Maximum Ratings (Limiting Values, Per diode)

Characteristic		Symbol	Value	Unit	
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage		V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	45	V	
Movimum overage forward regified ourrept	per diode	1	15	A	
Maximum average forward rectified current	total device	I <sub>F(AV)</sub>	30		
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		I <sub>FSM</sub>	210	A	
Storage temperature range		T <sub>stg</sub>	-45℃ to +150℃	°C	
Maximum operating junction temperature		Tj	150	°C	

### **Thermal Characteristics**

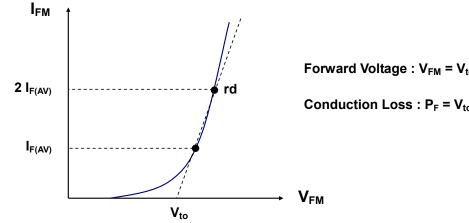
Characteristic		Symbol	Value	Unit
Maximum thermal registence junction to poop	per diode	D	4.0	°C/W
Maximum thermal resistance junction to case	total device	R <sub>th(j-c)</sub>	3.4	

### Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition		Min.	Тур.	Max.	Unit
Peak forward voltage drop	${\sf V_{FM}}^{(1)}$	I <sub>FM</sub> = 15A	<b>T</b> j <b>=25</b> ℃	-	-	0.65	V
			Tj=125℃	-	0.55	0.58	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_{R} = V_{RRM}$	<b>T</b> j <b>=25</b> ℃	-	-	0.5	mA
			Tj=125℃	-	-	50	mA

**Note :** (1) Pulse test :  $t_P \le 380 \ \mu$ s, Duty cycle  $\le 2\%$ 

To evaluate the conduction losses use the following equation (Fig 4.) :  $P_F = 0.35 \times I_{F(AV)} + 0.012 I_{F}^{2}_{(RMS)}$ 



Forward Voltage :  $V_{FM} = V_{to} + rd I_{FM}$ 

Conduction Loss :  $P_F = V_{to} I_{F(AV)} + rd I_{F}^{2}(RMS)$ 



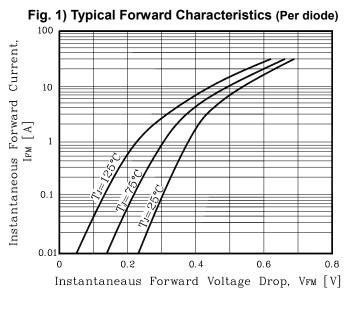
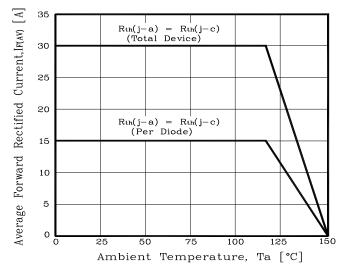
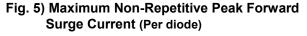
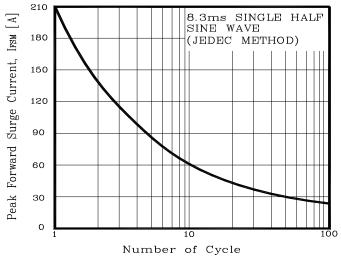


Fig. 3) Maximum Forward Derative Curve







100 Tj=125°C 10 Leakage Current,IRM [ 🖉 Reverse 1 . Tj=75°Ċ Instantaneous 0.1 Tj=25°0 0.01 0.001 5 10 15 20 25 30 35 40 45 0

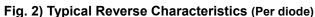


Fig. 4) Forward Power Dissipation (Per diode)

Instantaneous Reverse Voltage, VR [V]

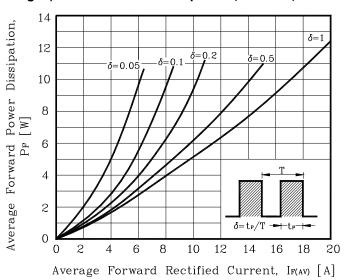
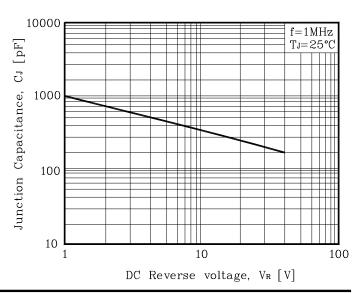
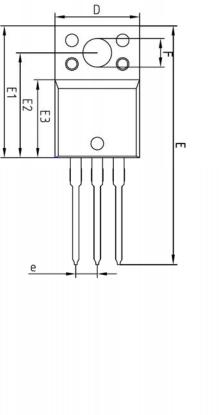


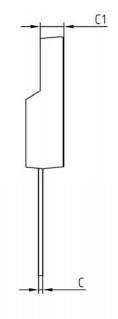
Fig. 6) Typical Junction Capacitance (Per diode)

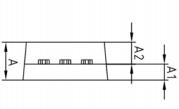


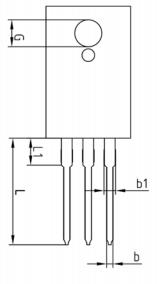
KSD-D00028-002

### Package Outline Dimension









	MILLIMETERS			NOTE
SYMBOL	MINIMUM	NOMINAL	MAXIMUM	NOTE
Α	-	-	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
С	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	-	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
е	2.54 BSC			
L	12.40		13.00	
L1				

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