

LOW VOLTAGE SCHOTTKY RECTIFIER

Features

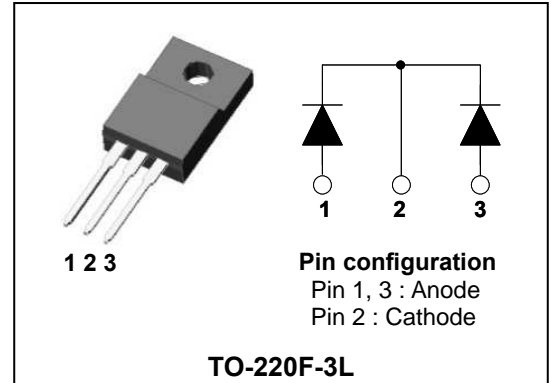
- Low forward voltage drop and leakage current
- Low power loss and High efficiency
- ESD capability
- Dual common cathode rectifier
- Full lead (Pb)-free and RoHS compliant device

Applications

- Power supply - Output rectification
- High efficiency SMPS
- Free-wheeling diode
- Reverse battery protection
- DC to DC systems

Description

The SDB1040PI 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



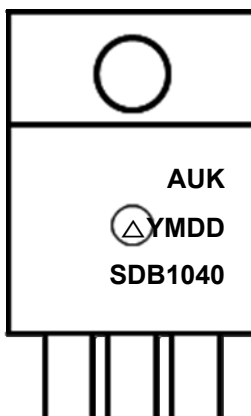
Product Characteristics

$I_{F(AV)}$	2 X 5A
V_{RRM}	40V
V_{FM} at 125°C	0.50V
I_{FSM}	120A

Ordering Information

Device	Marking Code	Package	Packaging
SDB1040PI	SDB1040	TO-220F-3L	Tube

Marking Information



AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

- Y = Year Code

- M = Monthly Code

- DD = Daily Code

SDB1040 = Specific Device Code

Absolute Maximum Ratings (Limiting Values)

Characteristic		Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage		V_{RRM} V_{RWM} V_R	40	V
Maximum average forward rectified current	per diode	$I_{F(AV)}$	5	A
	total device		10	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		I_{FSM}	120	A
Storage temperature range		T_{stg}	-55°C to +150°C	°C
Maximum operating junction temperature		T_J	150	°C

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Maximum thermal resistance junction to case	per diode	$R_{th(j-c)}$	5.0	°C/W
	total device		4.5	

Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 5A$	$T_j = 25^\circ C$	-	-	0.55	V
			$T_j = 125^\circ C$	-	0.46	0.50	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	0.5	mA
			$T_j = 125^\circ C$	-	-	100	mA

Note : (1) Pulse test : $t_p \leq 380 \mu s$, Duty cycle $\leq 2\%$

Electrical Characteristic Curves

Fig. 1 $I_O - V_F$ (Per Diode)

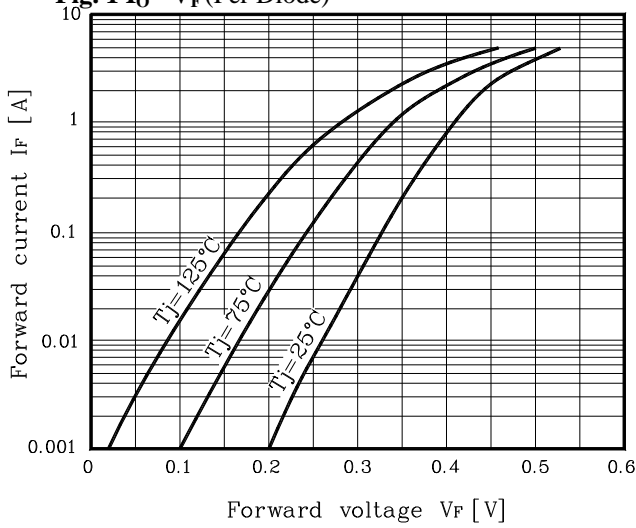


Fig. 2 $I_R - V_R$ (Per Diode)

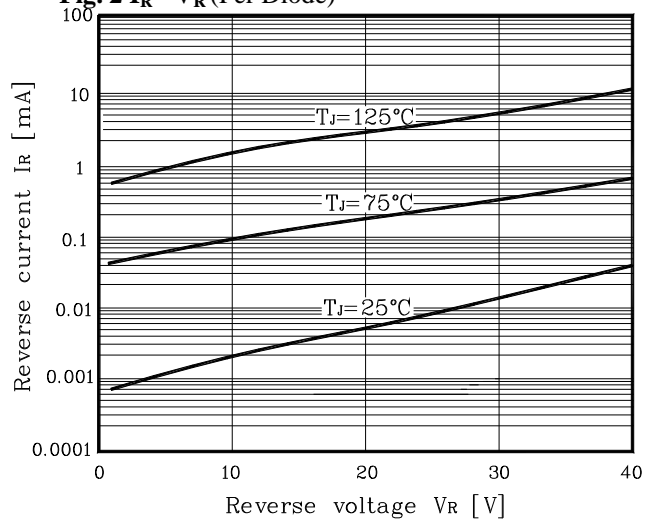


Fig. 3 $P_F - I_O$ (Per Diode)

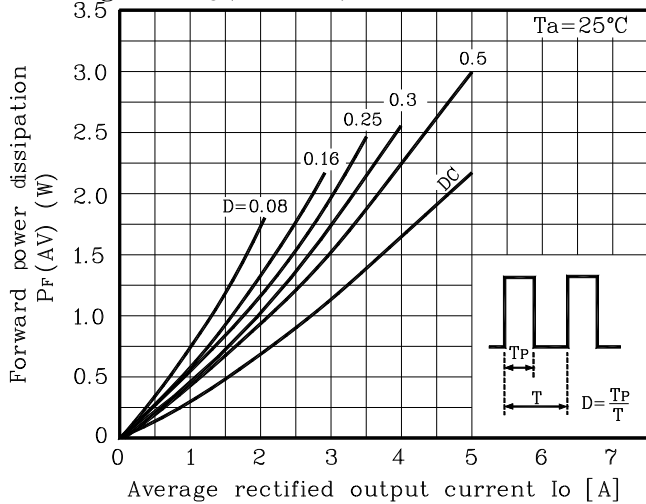


Fig. 4 $C_j - V_R$ (Per Diode)

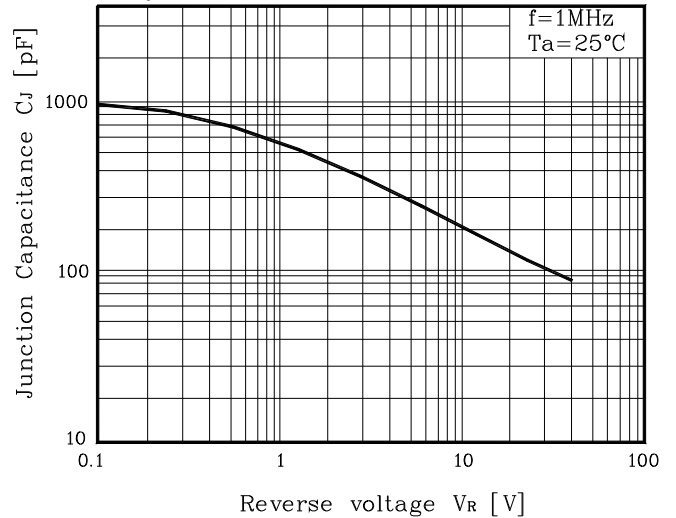


Fig. 5 $I_{FSM} - \text{Number of cycle}$ (Per Diode)

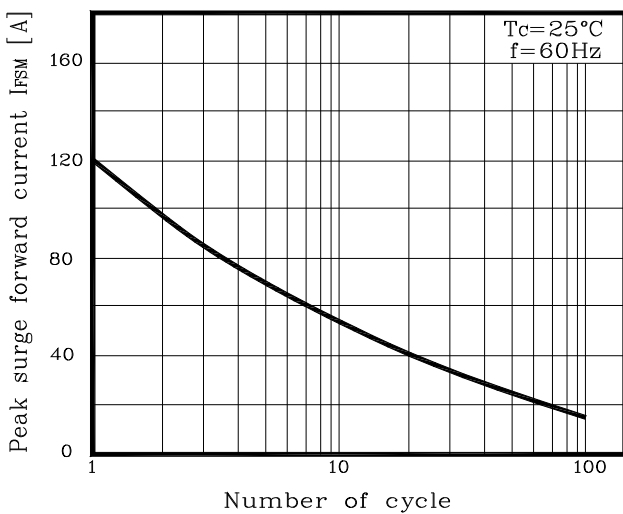
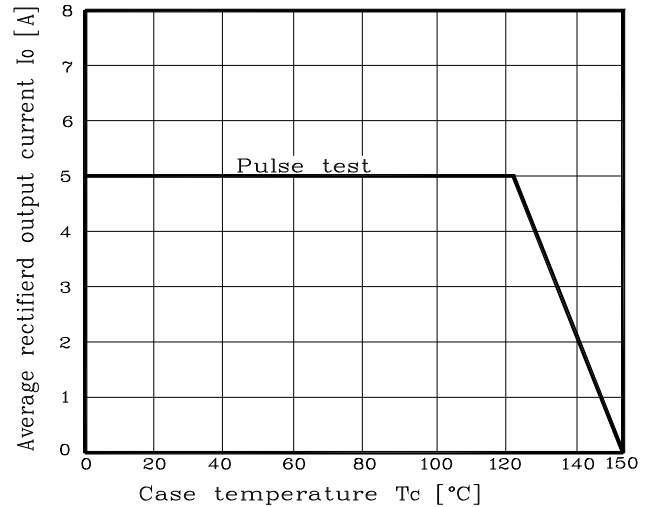
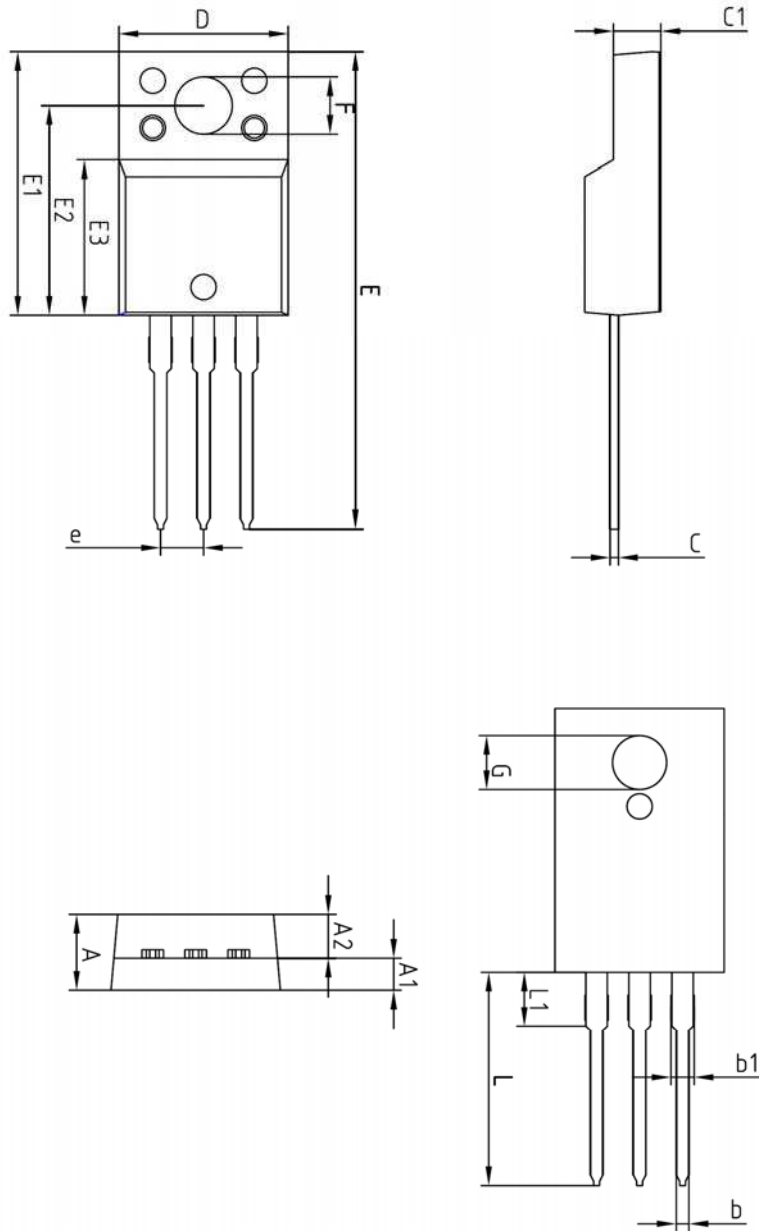


Fig. 6 I_O derating - T_C (Per Diode)



Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	-	-	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	
C	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	
e	2.54 BSC			
L	12.40	-	13.00	
L1	3.46 BSC			

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