

# Rectifier diodes schottky barrier

## PBYR745X series

### GENERAL DESCRIPTION

Low leakage, platinum barrier, schottky rectifier diodes in a full pack plastic envelope featuring low forward voltage drop, absence of stored charge, and guaranteed reverse surge capability. The devices are intended for use in switched mode power supplies and high frequency circuits in general where low conduction and zero switching losses are important.

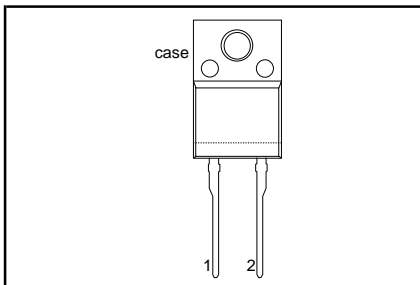
### QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT
$V_{RRM}$	<b>PBYR7-</b> Repetitive peak reverse voltage	<b>35X</b> 35	<b>40X</b> 40	<b>45X</b> 45	V
$V_F$	Forward voltage	0.57	0.57	0.57	V
$I_{F(AV)}$	Average forward current	7.5	7.5	7.5	A

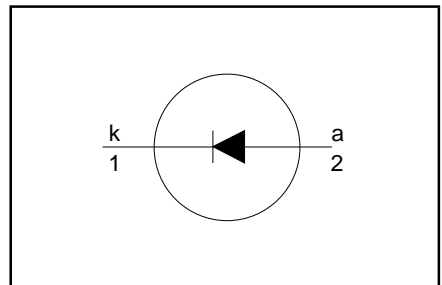
### PINNING - SOD113

PIN	DESCRIPTION
1	cathode
2	anode
case	isolated

### PIN CONFIGURATION



### SYMBOL



### LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
$V_{RRM}$	Repetitive peak reverse voltage	$T_{hs} \leq 128\text{ }^{\circ}\text{C}$	-	<b>-35</b> 35	<b>-40</b> 40	<b>-45</b> 45	V
$V_{RWM}$	Crest working reverse voltage		-	35	40	45	V
$V_R$	Continuous reverse voltage		-	35	40	45	V
$I_{F(AV)}$	Average forward current	square wave; $\delta = 0.5$ ; $T_{hs} \leq 123\text{ }^{\circ}\text{C}$	-	7.5			A
$I_{F(RMS)}$	RMS output current	$t = 25\text{ }\mu\text{s}$ ; $\delta = 0.5$ ; $T_{hs} \leq 123\text{ }^{\circ}\text{C}$	-	10.6			A
$I_{FRM}$	Repetitive peak forward current		-	15			A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10\text{ ms}$	-	100			A
		$t = 8.3\text{ ms}$	-	110			A
$I^2t$	$I^2t$ for fusing	sinusoidal $T_j = 125\text{ }^{\circ}\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ $t = 10\text{ ms}$	-	50			$\text{A}^2\text{s}$
$I_{RRM}$	Repetitive peak reverse current	$t_p = 2\text{ }\mu\text{s}$ ; $\delta = 0.001$	-	1			A
$I_{RSM}$	Non-repetitive peak reverse current	$t_p = 100\text{ }\mu\text{s}$	-	1			A
$T_{stg}$	Storage temperature		-65	175			$^{\circ}\text{C}$
$T_j$	Operating junction temperature		-	150			$^{\circ}\text{C}$

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### ISOLATION LIMITING VALUE & CHARACTERISTIC

$T_{hs} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{isol}$	R.M.S. isolation voltage from all three terminals to external heatsink	$f = 50\text{-}60\text{ Hz}$ ; sinusoidal waveform; $R.H. \leq 65\%$ ; clean and dustfree	-		2500	V
$C_{isol}$	Capacitance from T2 to external heatsink	$f = 1\text{ MHz}$	-	10	-	pF

### THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-hs}$	Thermal resistance junction to heatsink	with heatsink compound	-	-	5.5	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	in free air.	-	55	-	K/W

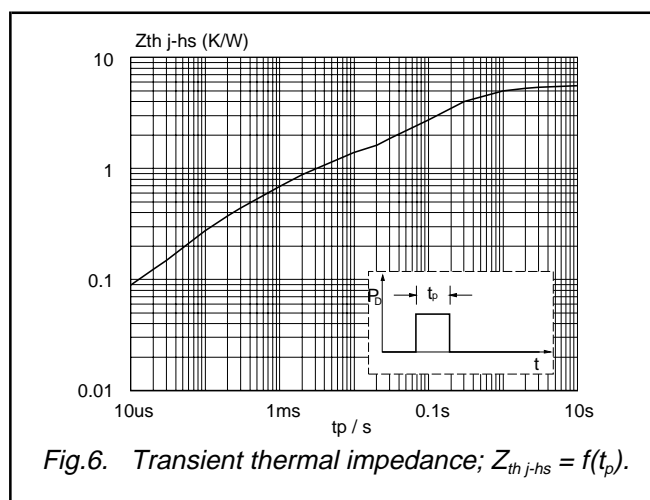
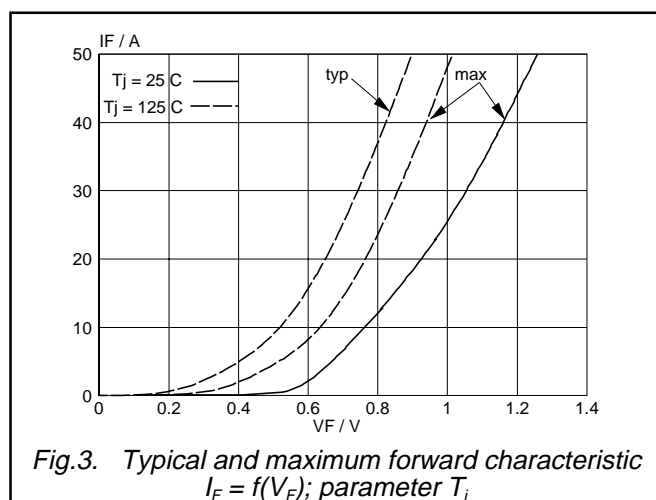
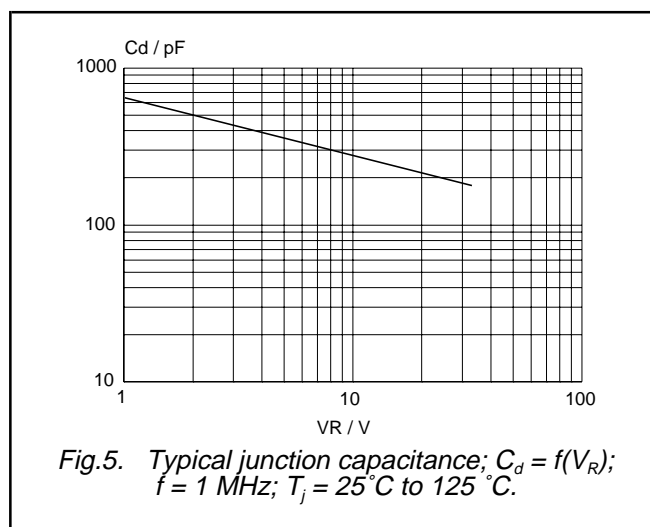
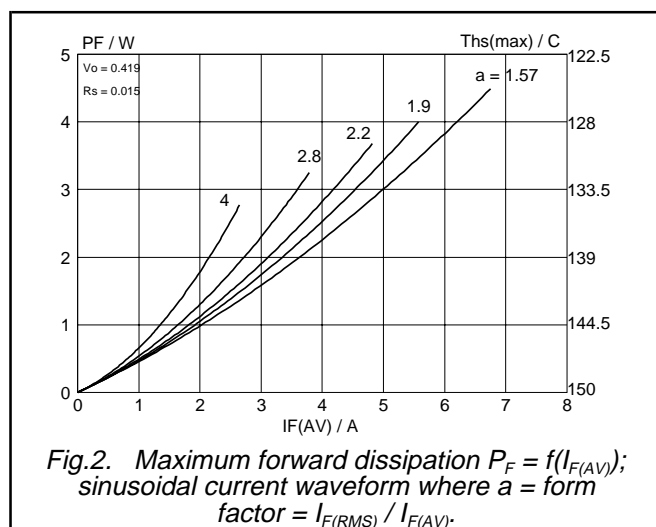
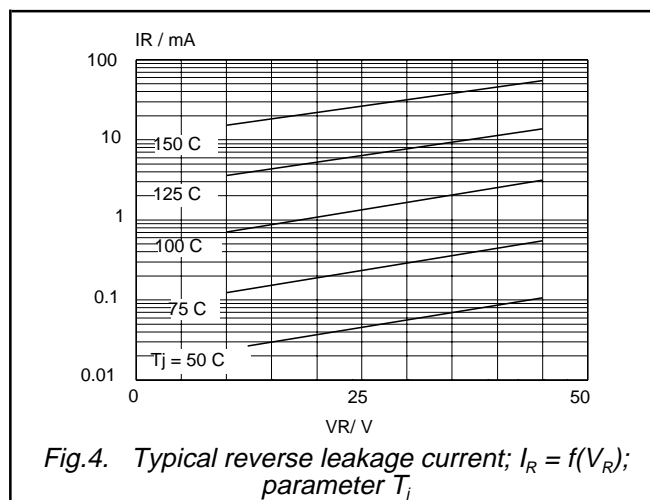
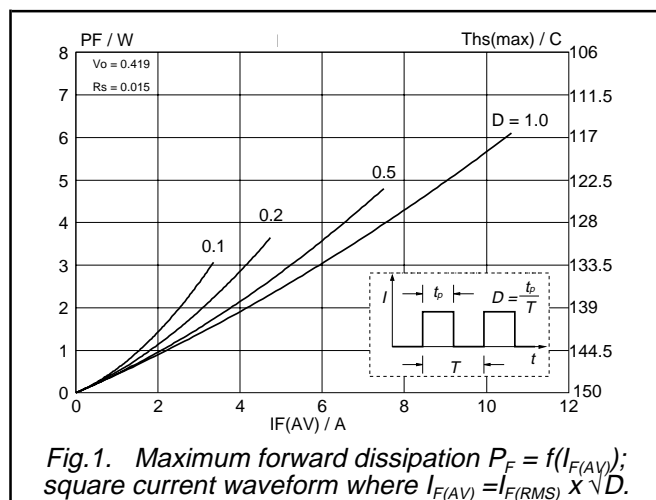
### STATIC CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 7.5\text{ A}$ ; $T_j = 125\text{ }^{\circ}\text{C}$	-	0.50	0.59	V
		$I_F = 15\text{ A}$ ; $T_j = 125\text{ }^{\circ}\text{C}$	-	0.62	0.72	V
		$I_F = 15\text{ A}$	-	0.78	0.84	V
$I_R$	Reverse current	$V_R = V_{RRM}$	-	50	100	$\mu\text{A}$
		$V_R = V_{RRM}$ ; $T_j = 125\text{ }^{\circ}\text{C}$	-	13	22	mA
$C_d$	Junction capacitance	$f = 1\text{ MHz}$ ; $V_R = 5\text{ V}$ ; $T_j = 25\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$	-	350	-	pF

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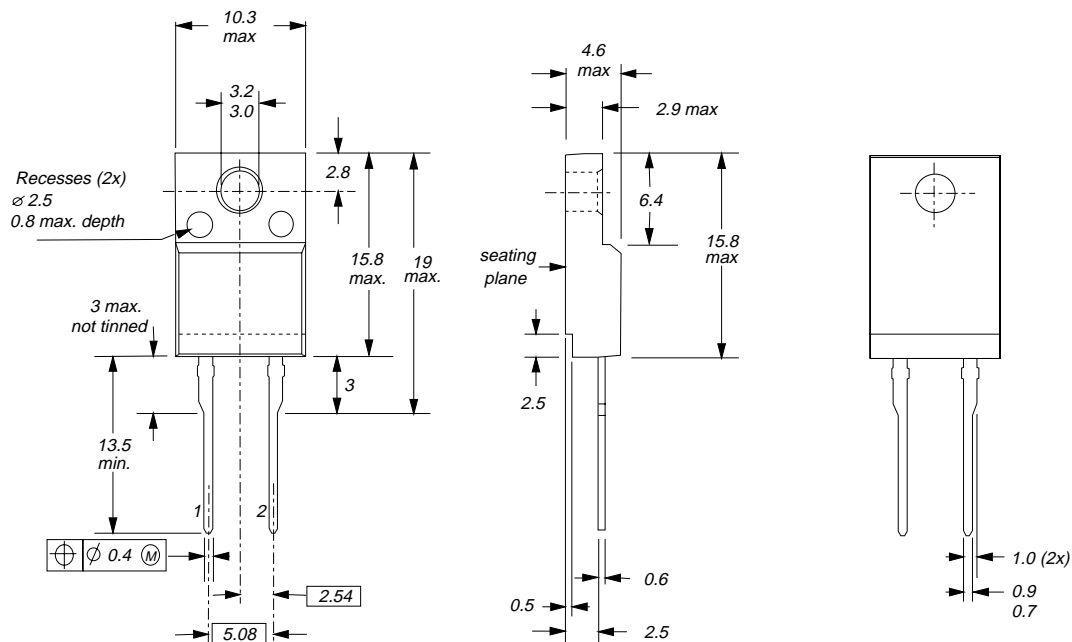
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### MECHANICAL DATA

*Dimensions in mm*

*Net Mass: 2 g*



*Fig.7. SOD113; The seating plane is electrically isolated from all terminals.*

#### Notes

1. Refer to mounting instructions for F-pack envelopes.
2. Epoxy meets UL94 V0 at 1/8".

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**DEFINITIONS**

<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	
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