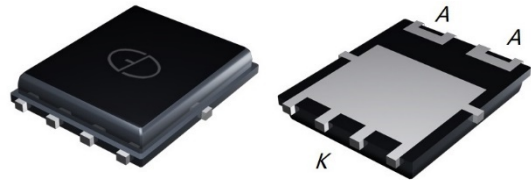


20A,50V Schottky Barrier Rectifier

Features

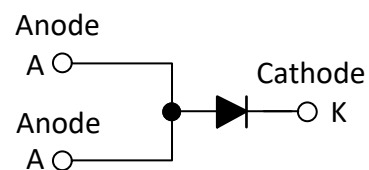
- Ultra low forward voltage, low power loss
- Low leakage current
- High surge current
- Plastic package has underwriters Laboratory
Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



PDFN56

Applications

- SMPS
- Adapter
- Server Power



Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 3000 units per reel

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	SMBRP2050	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	50	V
Maximum RMS voltage	V _{RMS}	35	V
Maximum DC blocking voltage	V _{DC}	50	V
Maximum average forward	I _{F(AV)}	20	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	200	A
Operating junction temperature range	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage ^(Note1)	V_F	$I_F=20\text{A}, T_J=25^{\circ}\text{C}$	0.49	0.55	V
		$I_F=20\text{A}, T_J=125^{\circ}\text{C}$	-	0.50	
Reverse leakage current @ V_R ^(Note2)	I_R	$T_J=25^{\circ}\text{C}$	-	500	μA
		$T_J=100^{\circ}\text{C}$	-	50	mA

Thermal-Mechanical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	$^{\circ}\text{C}/\text{W}$

Note:

1. Pulse test with $PW=0.3\text{ms}$, duty cycle=2%
2. Pulse test with $PW=30\text{ms}$

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

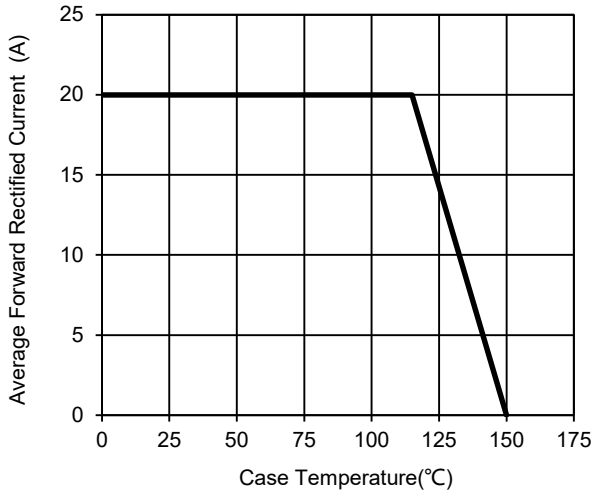


Fig.1 – Forward Current Derating Curve

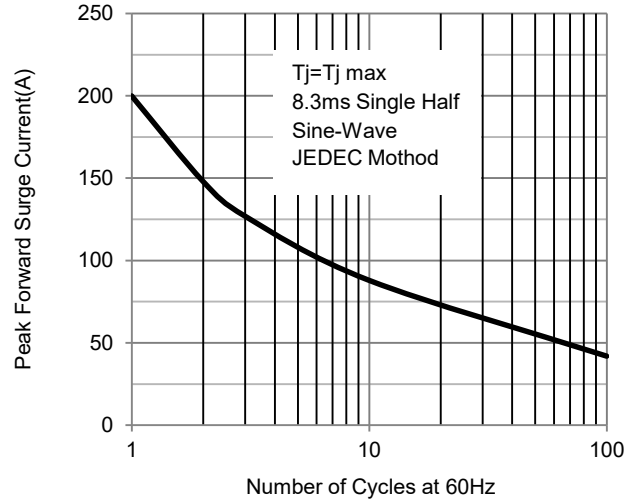


Fig.2 – Maximum Non-Repetitive Surge Current

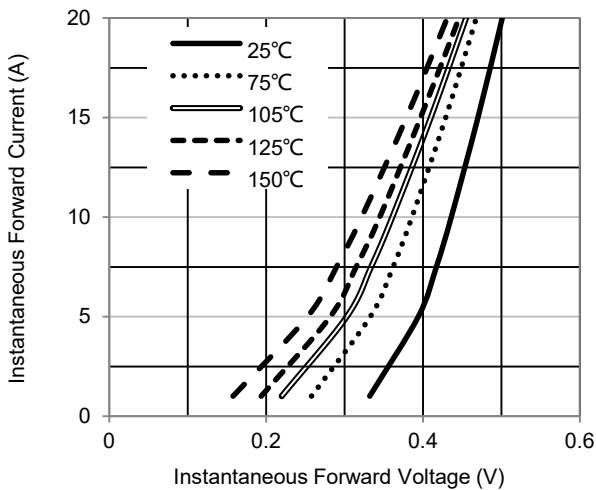


Fig.3 – Typical Forward Voltage Characteristics

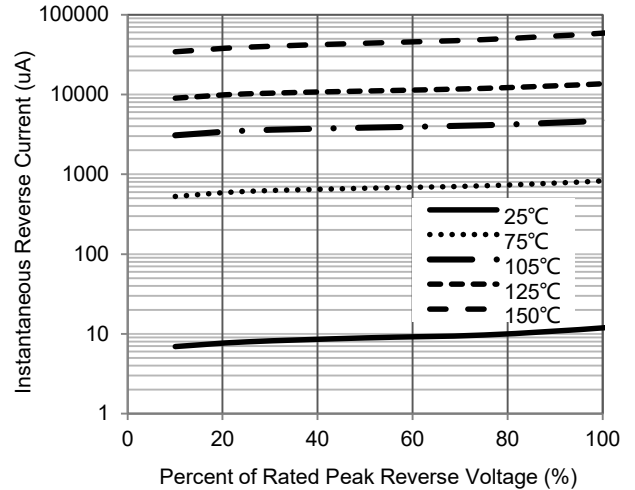


Fig.4 – Typical Reverse Current Characteristics

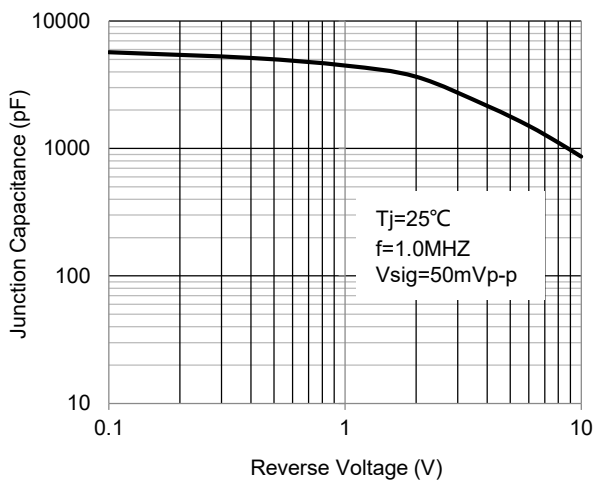
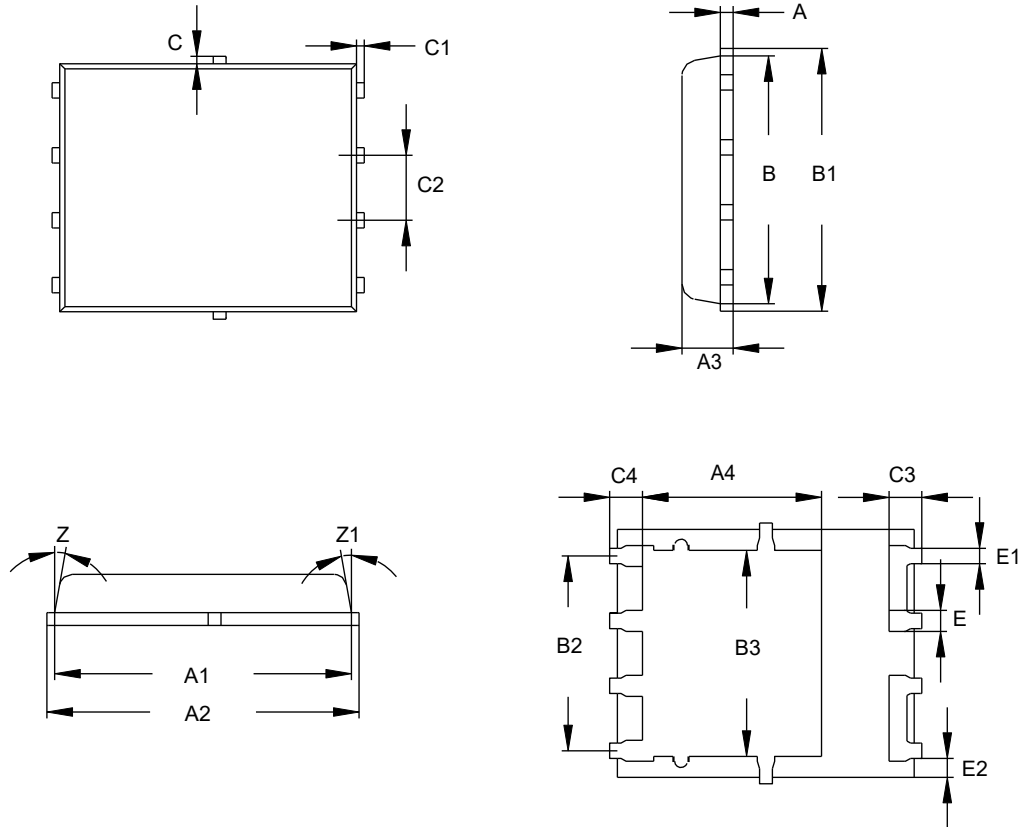


Fig.5 – Typical Junction Capacitance

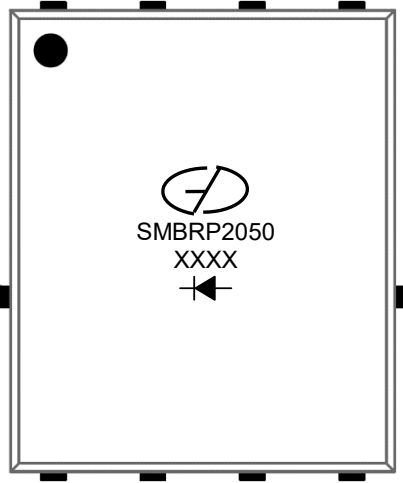
Package Outline Dimensions (Unit: millimeters)



PDFN56



PDFN56							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	0.15	0.25	0.35	C1	0.05	0.15	0.25
A1	5.6	5.8	6.0	C2	1.17	1.27	1.37
A2	5.9	6.1	6.3	C3	0.53	0.63	0.73
A3	0.9	1	1.1	C4		0.63	
A4		3.5		E	0.31	0.41	0.51
B	4.7	4.9	5.1	E1	0.2	0.3	0.4
B1	5	5.2	5.4	E2	0.25	0.35	0.45
B2	3.71	3.81	3.91	Z	8°	10°	12°
B3		4		Z1	8°	10°	12°
C	0.05	0.15	0.25				

Marking Outline



1. Logo Mark: 
2. Part Name: SMBRP2050
3. Date Code: XXXX
4. Polarity : 

Revision History

Document Version	Date of release	Description of changes
Rev.A	2013.12.10	Released Datasheet
Rev.B	2021.01.12	Modify document format
Rev.C	2022.04.29	Modify ratings and characteristics curves

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