

1A, 400-600V Rectifiers

FEATURES

- Surface mount device type
- Low peakage current
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- The devices are designed for high frequency miniatures switched Mode power supplies such as adapters, lighting and on-board DC/DC converters.

MECHANICAL DATA

- Case: SOD-123 small outline plastic package
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 9.5 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	1	A
V_{RRM}	400-600	V
I_{FSM}	7.5	A
V_F at $I_F=1A$	1.1	V
T_{JMAX}	150	°C
Package	SOD-123	
Configuration	Single dice	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	PART NUMBER	UNIT
Marking code on the device	2CZ4004		Z44	
	2CZ4005		Z45	
Non-repetitive peak reverse voltage @ $I_R=100\mu\text{A}$	2CZ4004	V_{RRM}	400	V
	2CZ4005		600	
RMS reverse voltage	2CZ4004	$V_{R(RMS)}$	280	V
	2CZ4005		420	
Forward current		I_O	1	A
Non-repetitive peak forward surge current 8.3ms half sine wave		I_{FSM}	7.5	A
Power dissipation		P_D	350	mW
Junction temperature range		T_J	- 55 to +150	°C
Storage temperature range		T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	357	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.1	V
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 400\text{V}, T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$V_R = 600\text{V}, T_J = 25^\circ\text{C}$				
Junction capacitance	1 MHz, $V_R = 4\text{V}$	C_J	-	15	pF

Notes:

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

ORDERING INFORMATION				
PART NO. (Note. 1)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
2CZ4004	RH	G	SOD-123	3K / 7" Reel
2CZ4005				

Notes:

1. Whole series with green compound

EXAMPLE				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
2CZ4004 RHG	2CZ4004	RH	G	Green compound

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 Typical Forward Characteristics

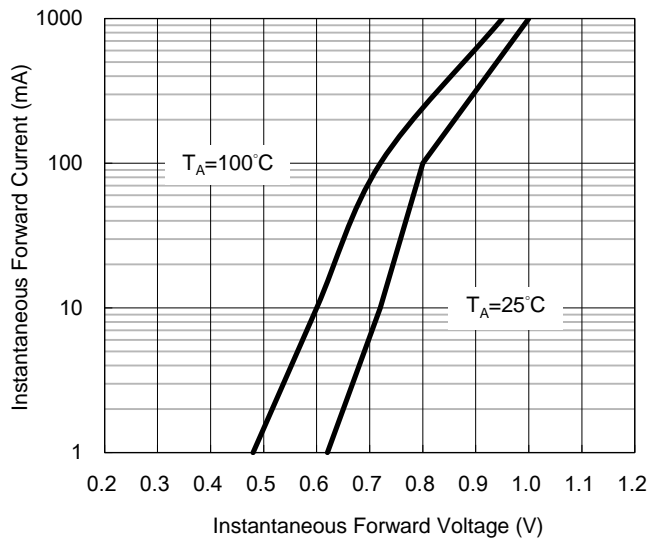


Fig. 2 Reverse Characteristics

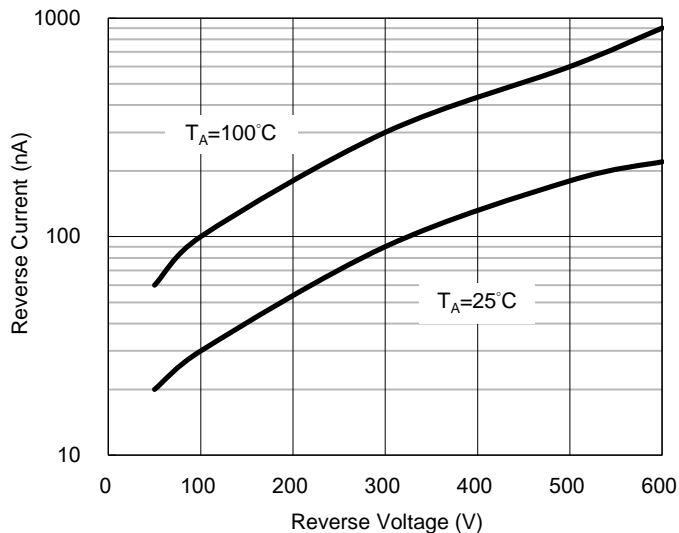


Fig. 3 Capacitance Characteristics

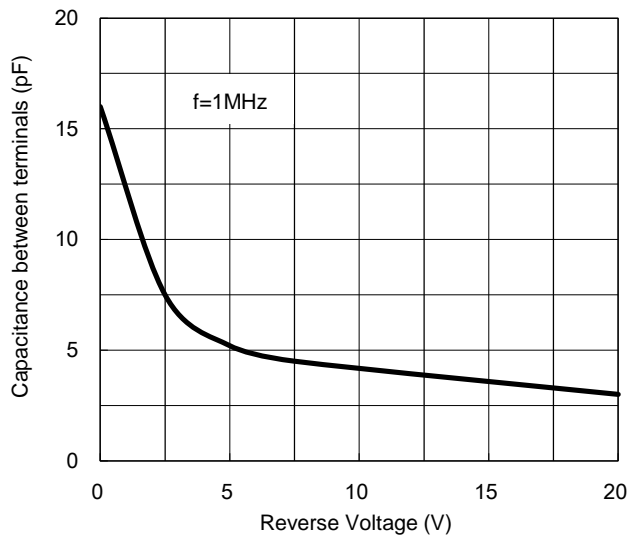
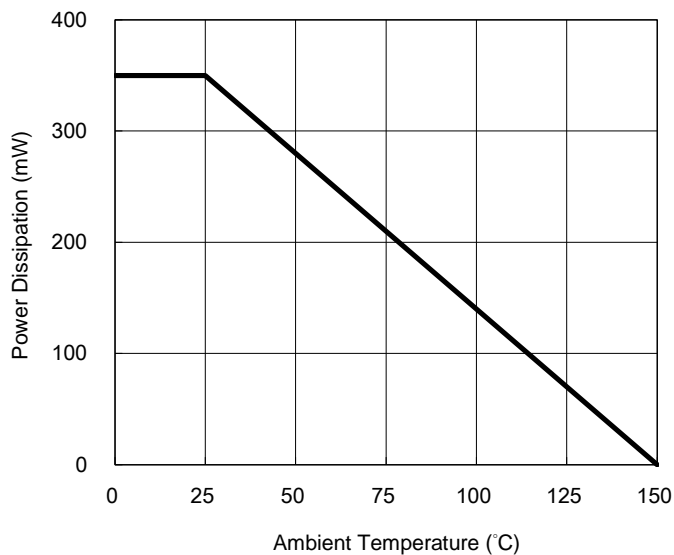
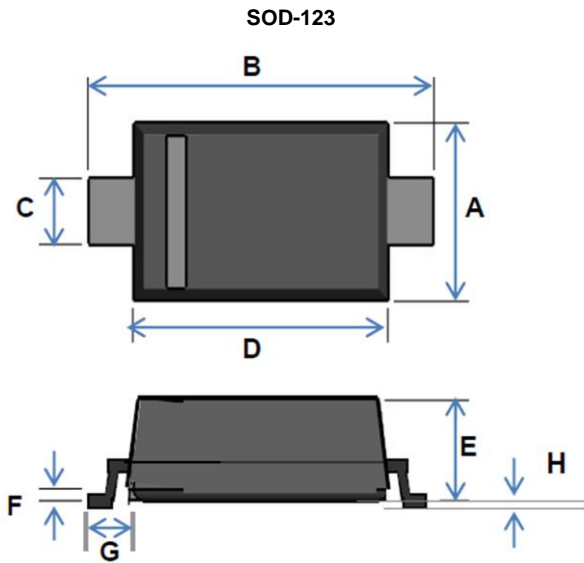


Fig. 4 Power Derating Curve

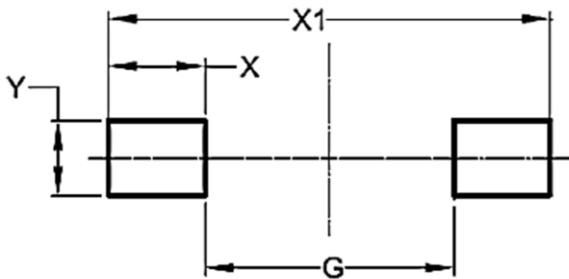


PACKAGE OUTLINE DIMENSION



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.40	1.80	0.055	0.071
B	3.55	3.85	0.140	0.152
C	0.45	0.70	0.018	0.028
D	2.55	2.85	0.100	0.112
E	0.95	1.35	0.037	0.053
F	0.05	0.15	0.002	0.006
G	0.50 REF		0.02 REF	
H	-	0.10	-	0.004

SUGGEST PAD LAYOUT



DIM.	Unit(mm)	Unit(inch)
	Min	Min
G	2.25	0.089
X	0.90	0.035
X1	4.05	0.159
Y	0.95	0.037

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