

200mW, Low VF SMD Schottky Barrier Diode

FEATURES

- Designed for mounting on small surface
- Low Capacitance
- Low forward voltage drop
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Adapters
- For switching power supply
- Low stored charge
- Inverter

MECHANICAL DATA

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 8 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	200	mA
V_{RRM}	40	V
I_{FSM}	0.6	A
V_F at $I_F=40mA$	1	V
T_J Max.	125	°C
Package	SOT-23	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	BAS40	BAS40-04	BAS40-05	BAS40-06	UNIT
Marking code on the device		43	44	45	46	
Repetitive peak reverse voltage	V_{RRM}	40				V
Forward current	$I_{F(AV)}$	200				mA
Non-repetitive peak forward surge current @ $t = 8.3ms$	I_{FSM}	0.6				A
Junction temperature range	T_J	-65 to +125				°C
Storage temperature range	T_{STG}	-65 to +125				°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	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	0.38	V
	$I_F = 40\text{mA}, T_J = 25^\circ\text{C}$			1.00	
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 30\text{V}, T_J = 25^\circ\text{C}$	I_R	-	0.2	μA
Reverse Breakdown Voltage	$I_R = 10\mu\text{A}$	$V_{(BR)}$	40	-	V
Junction capacitance	1 MHz, $V_R = 1\text{V}$	C_J	-	5.0	pF
Reverse Recovery Time	$I_F = I_R = 10\text{mA}, R_L = 100\Omega$, $I_{RR} = 1\text{mA}$	t_{rr}	-	5.0	ns

Notes:

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

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
BAS40-XX (Note 1)	RF	G	SOT-23	3K / 7" Reel

Notes:

1. "XX" is Device code from "04" to "06".

*: optional available

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BAS40-04 RFG	BAS40-04	RF	G	Green compound

CHARACTERISTICS CURVES

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

Fig. 1 Power Derating Curve

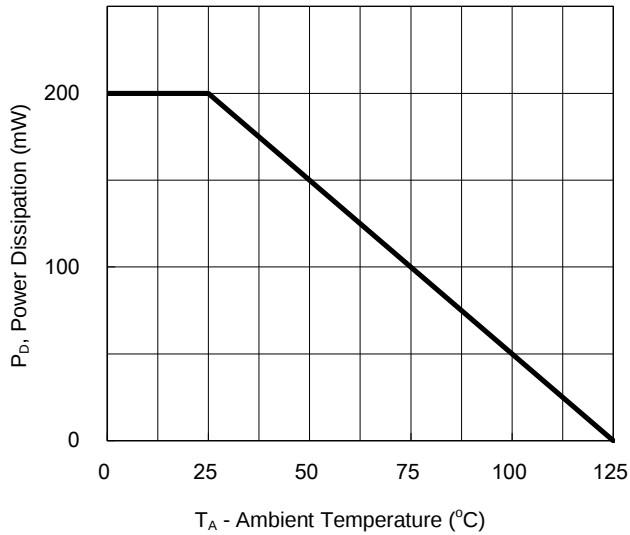


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current Per Leg

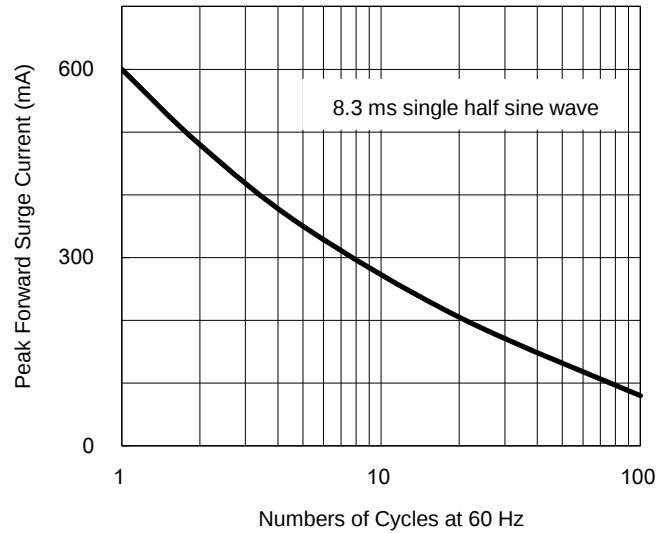


Fig.3 Typical Forward Characteristics

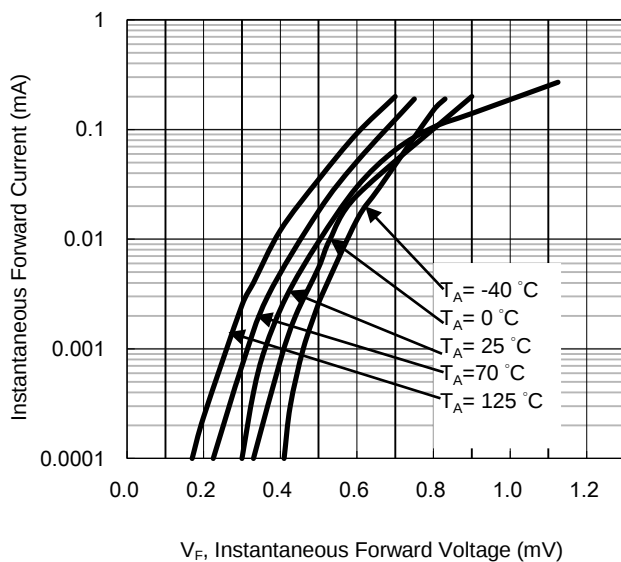
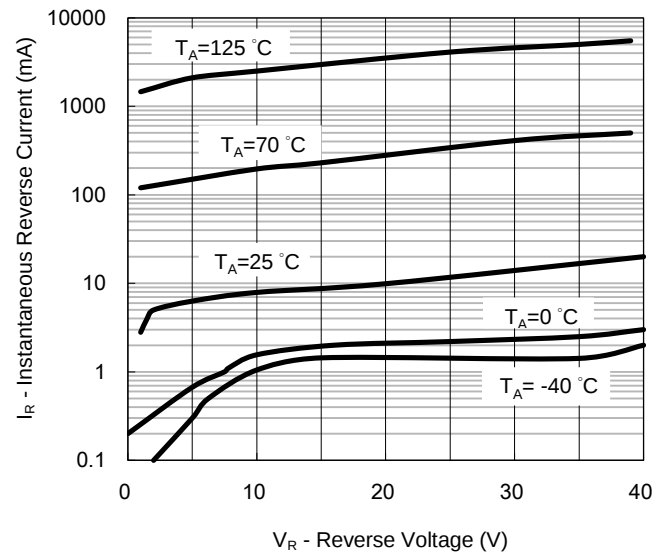


Fig.4 Typical Reverse Characteristics



CHARACTERISTICS CURVES

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

Fig. 5 Typical Total Capacitance VS. Reverse Voltage

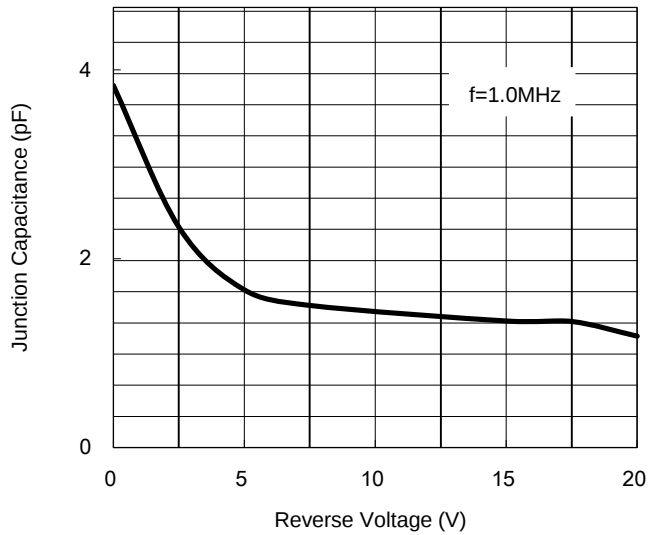
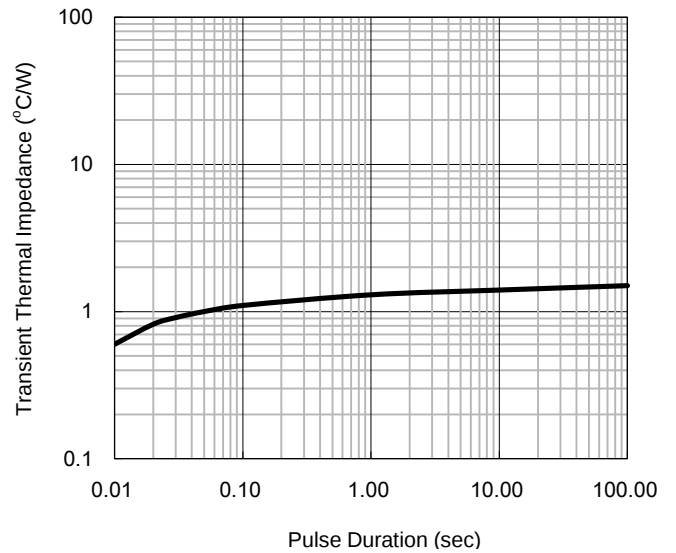
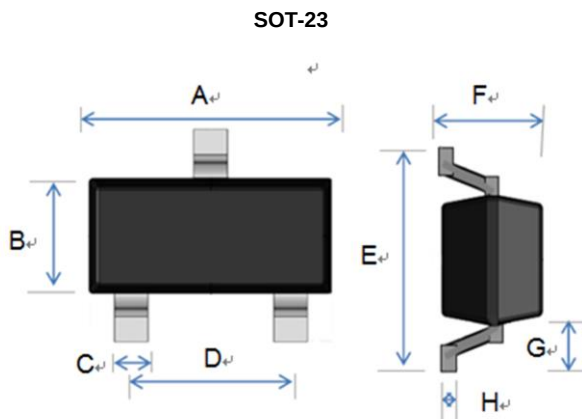


Fig.6 Typical Transient Thermal Characteristics

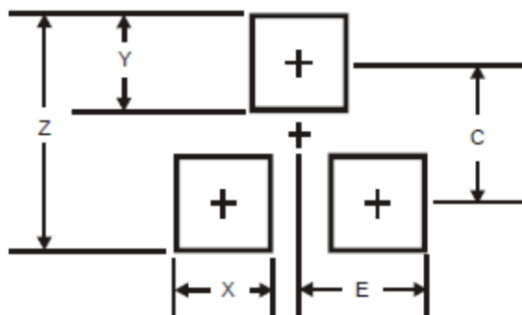


PACKAGE OUTLINE DIMENSION



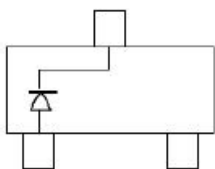
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT

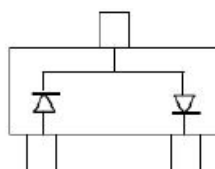


DIM.	Unit(mm)	Unit(inch)
	TYP	TYP
Z	2.8	0.11
X	0.7	0.03
Y	0.9	0.04
C	1.9	0.07
E	1.0	0.04

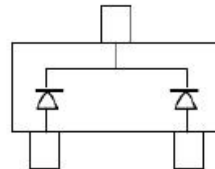
PIN CONFIGURATION



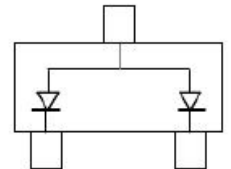
BAS40



BAS40-04



BAS40-05



BAS40-06

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