

## 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	PART NUMBER	UNIT
Marking code on the device	BAS40		43	
	BAS40-04		44	
	BAS40-05		45	
	BAS40-06		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

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

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>MIN</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	-	0.38	V
	$I_F = 40\text{mA}, T_J = 25^\circ\text{C}$			1.00	
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R = 30\text{V}, T_J = 25^\circ\text{C}$	$I_R$	-	0.2	$\mu\text{A}$
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  $PW = 30\text{ ms}$

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

**Notes:**

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

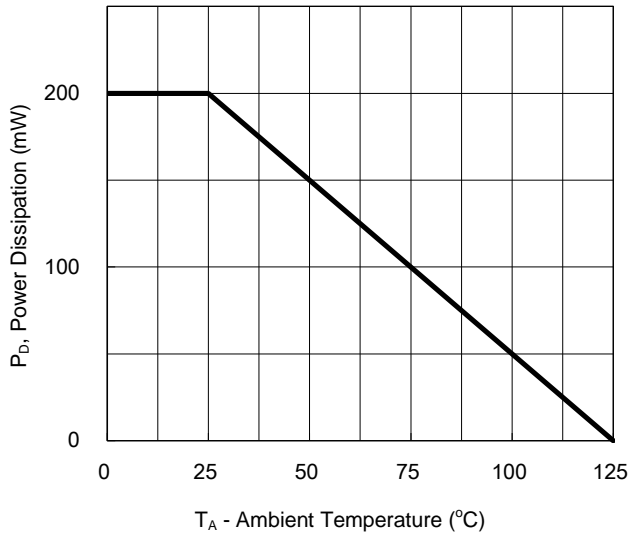
\*: optional available

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

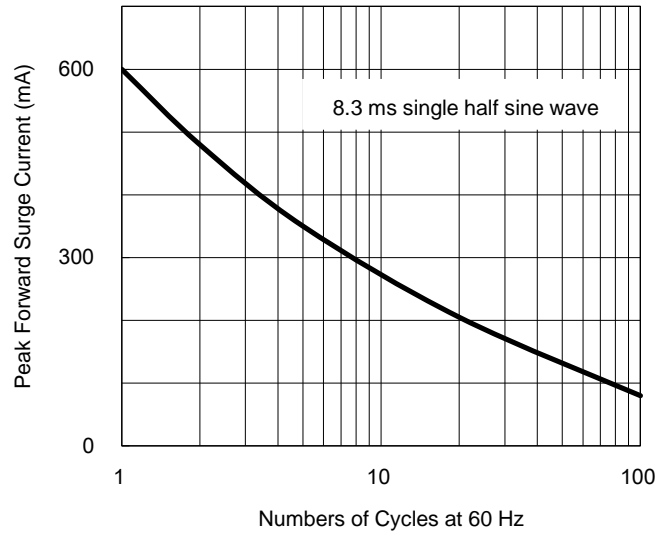
**CHARACTERISTICS CURVES**

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

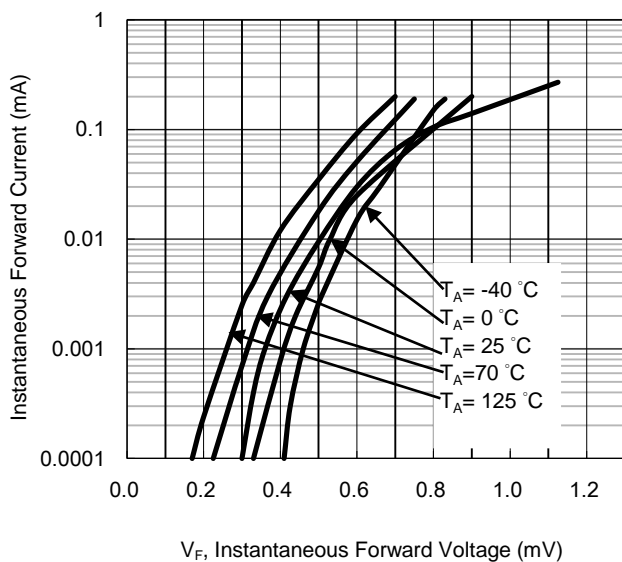
**Fig. 1 Power Derating Curve**



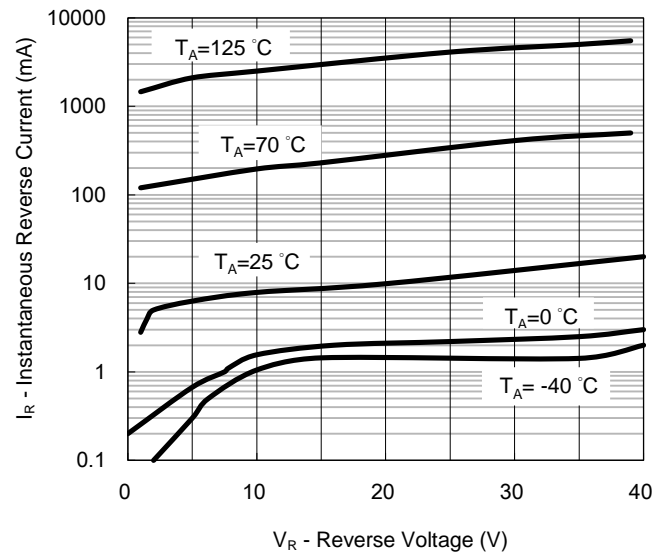
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



**Fig.3 Typical Forward Characteristics**



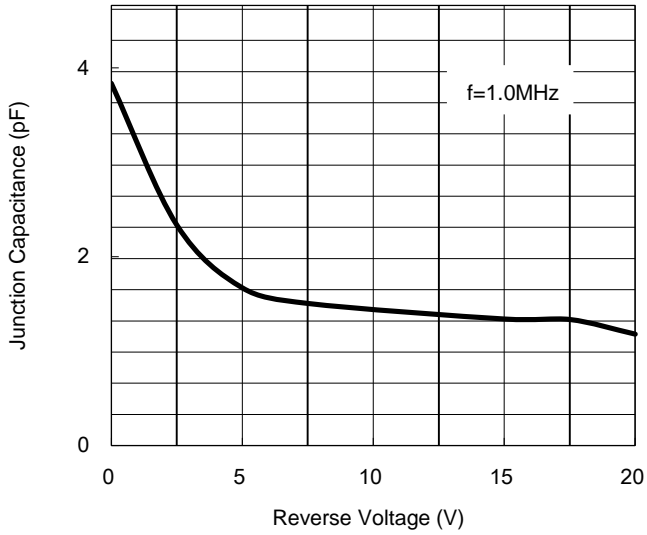
**Fig.4 Typical Reverse Characteristics**



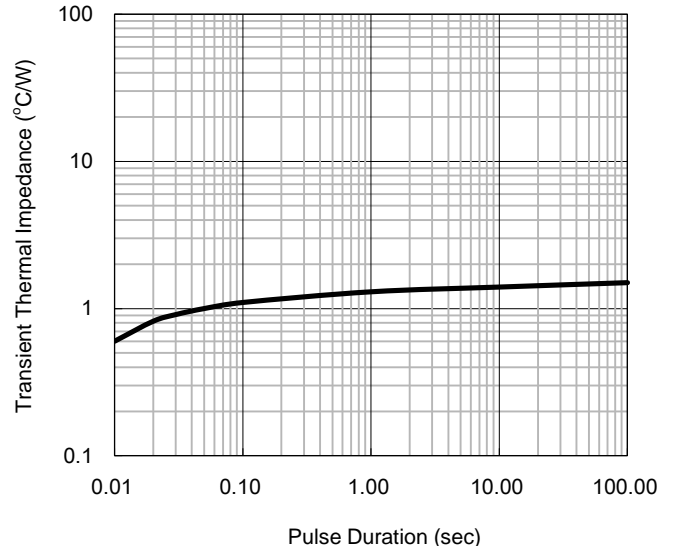
**CHARACTERISTICS CURVES**

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

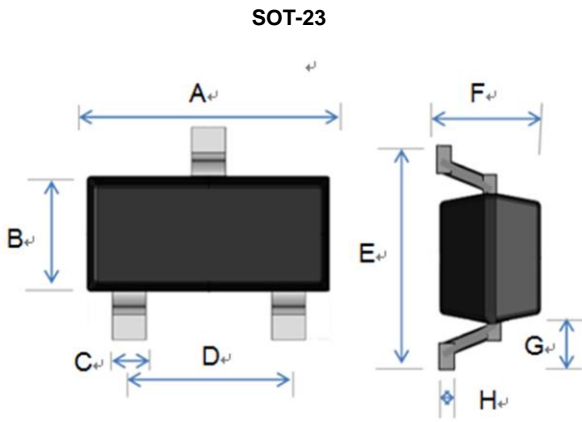
**Fig. 5 Typical Total Capacitance VS. Reverse Voltage**



**Fig.6 Typical Transient Thermal Characteristics**

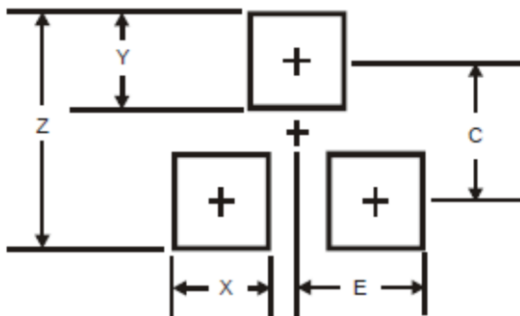


**PACKAGE OUTLINE DIMENSION**



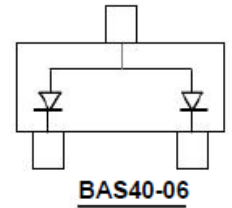
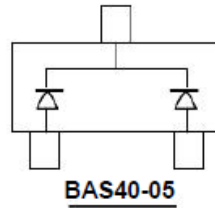
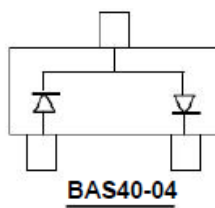
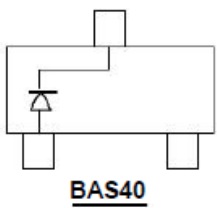
DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

**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**



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