

BAS40M5

Schottky Barrier Rectifiers



Voltage: 40 Volts

Current: 200 mA

Package: SOD-523

Features

- NH'S Plane Schottky Barrier Chip Technology
- Low Forward Voltage Drop For High Efficiency
- Low Power Loss For High Reliability
- High Frequency Switching Speed

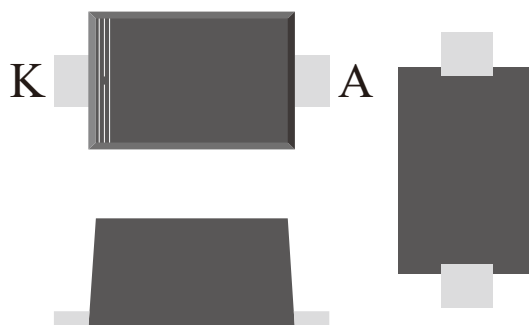
Mechanical Data

- **Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

Typical Applications

- Switch Mode Power Supplies (SMPS)
- Fast Chargers
- LED Driver And Monitor Lighting
- Automotive Electronics And Charging Posts

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	40	V
Maximum RMS Voltag		V_{RMS}	28	V
Maximum DC Blocking Voltage		V_{DC}	40	V
Maximum Average Forward Rectified Current		$I_{F(AV)}$	200	mA
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	500	mA
Current Squared Time	$t < 8.3ms$	I^2t	1037.5	mA ² sec

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings			Unit
			Min.	Typ.	Max.	
Instaneous Forward Voltage Per Diode	$I_F = 10.0 \text{ mA}$	V_F	--	0.12	0.5	V
	$I_F = 40.0 \text{ mA}$		--	0.25	1	
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_a = 25^\circ\text{C}$, $V_R = V_{RRM}$	I_{RRM}	--	0.1	1	uA
	$T_a = 110^\circ\text{C}$, $V_R = V_{RRM} * 80\%$		--	10	200	
Typical Junction Capacitance	4 V,1MHz	C_J	--	5	--	pF

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Ratings	Unit
Operating Junction Temperature Range		T_J	-55 to 150	°C
Storage Temperature Range		T_{STD}	-55 to 150	
Thermal Resistance Junction To Ambient With Steady-State	Still Air Environment With $T_a = 25^\circ\text{C}$	$R_{\theta JA}$	550.0	°C/W
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 1 in2 FR-4 Board With 2oz. Copper	$R_{\theta JC}$	100.0	

Notes: 1.Pulse Test: 300 Us Pulse Width,1% Duty Cycle

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Typical Characteristics Curves

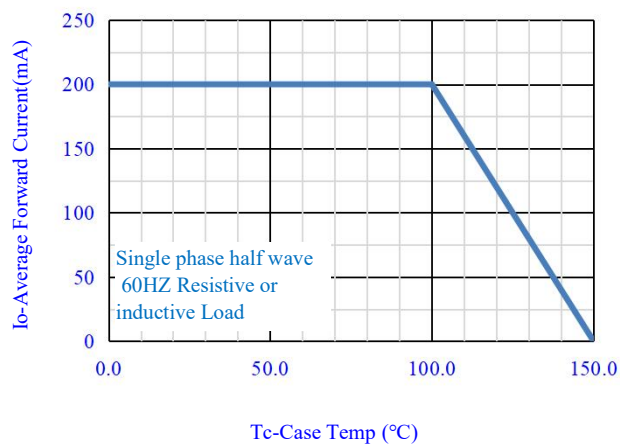


Fig.1-Forward Current Derating Curve

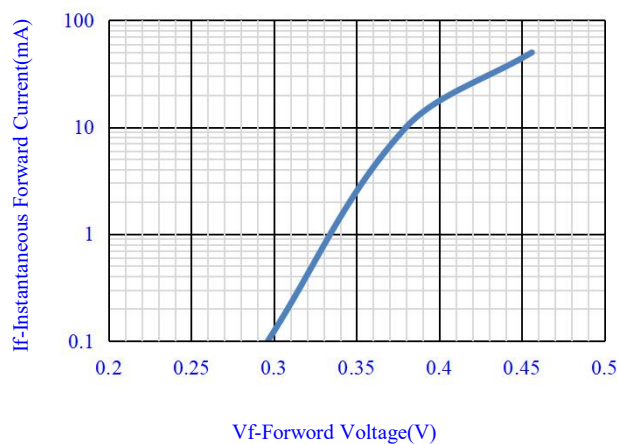


Fig.2-Typical Instantaneous Forward

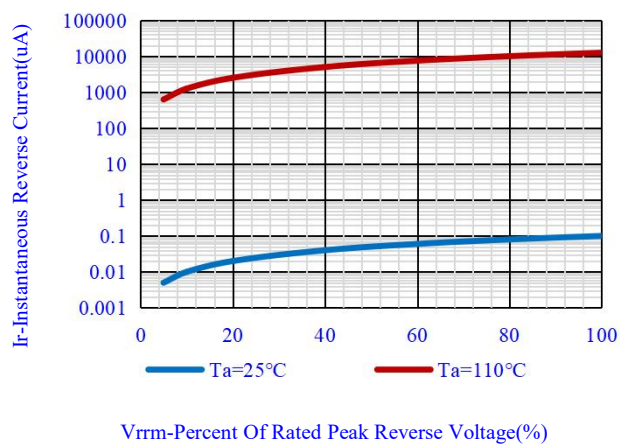


Fig.3-Typical Reverse Characteristics

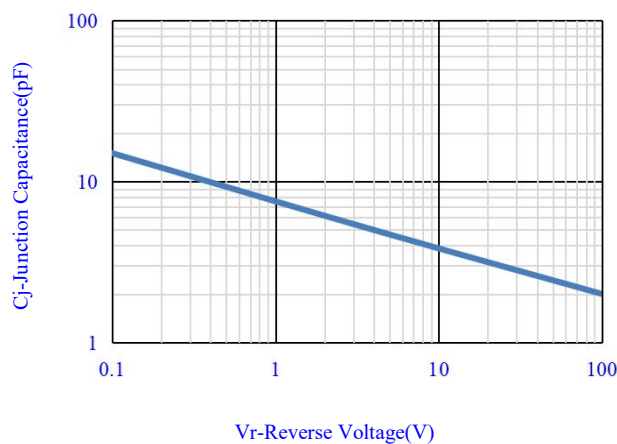


Fig.4-Typical Junction Capacitance

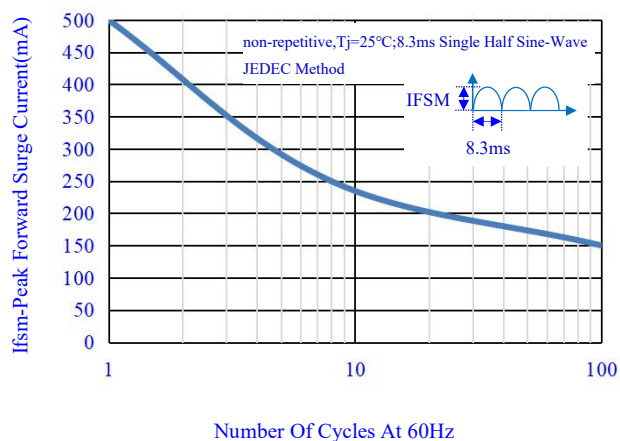


Fig.5-Max. Non-Repetitive Surge Current

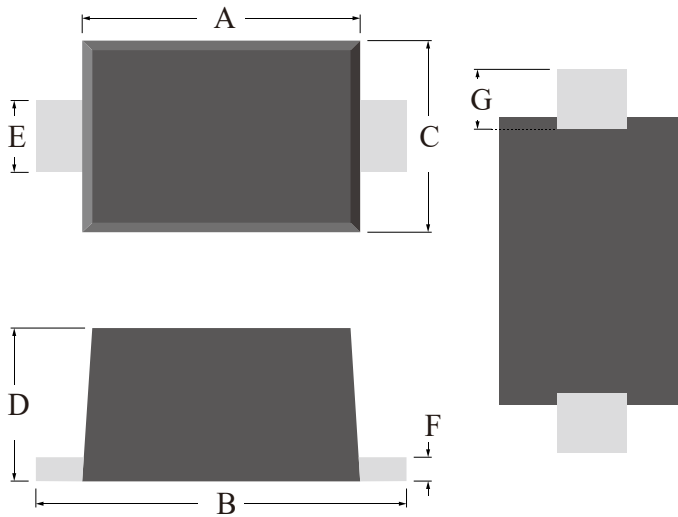
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OUTLINE DRAWINGS

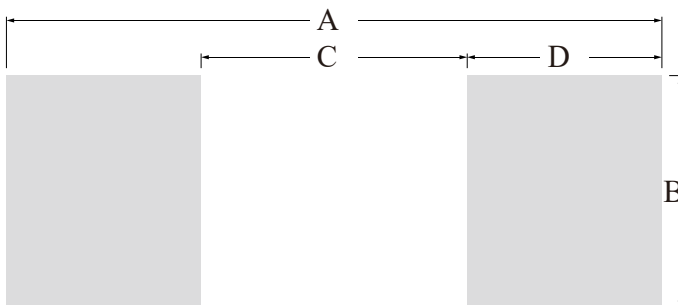
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OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.10	-	1.30	0.0433	-	0.0512
B	1.50	-	1.70	0.0591	-	0.0669
C	0.75	-	0.85	0.0295	-	0.0335
D	0.51	-	0.77	0.0201	-	0.0303
E	0.25	-	0.35	0.0098	-	0.0138
F	0.03	-	0.15	0.0012	-	0.0059
G	-	0.25	-	-	0.0098	-

RECOMMENDED LAYOUT DRAWINGS

SOD-523



OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	2.02	-	-	0.0795	-
B	--	0.70	--	--	0.0276	--
C	--	0.82	--	--	0.0323	--
D	--	0.60	--	--	0.0236	--

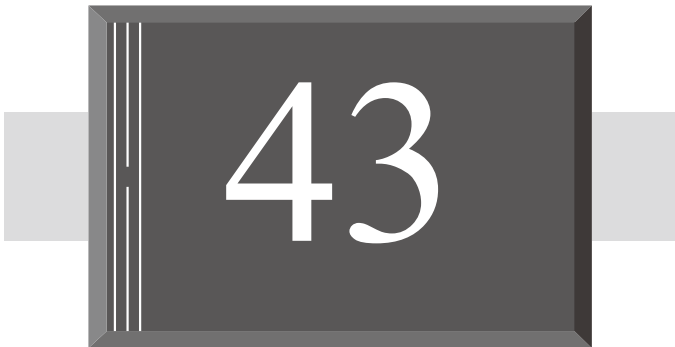
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MARKING

MARKING INSTRUCTION



BAS40M5=Model
White band denotes cathode

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-523	P1	0.02	7" Reel	8000	40000	480000

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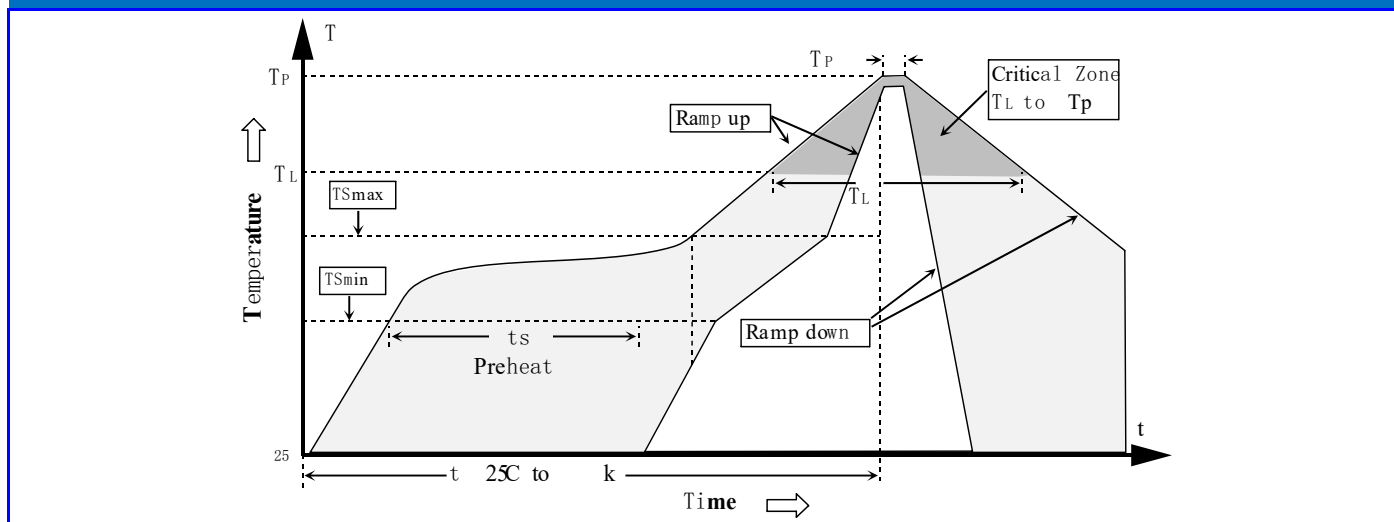
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmx to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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