

**SCHOTTKY  
SURFACE BRIDGE RECTIFIER**

**REVERSE VOLTAGE** – 40 Volts  
**FORWARD CURRENT** – 1.0 Amperes

**FEATURES**

- Rating to 40V PRV
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Qualified according to AEC-Q101 Rev\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

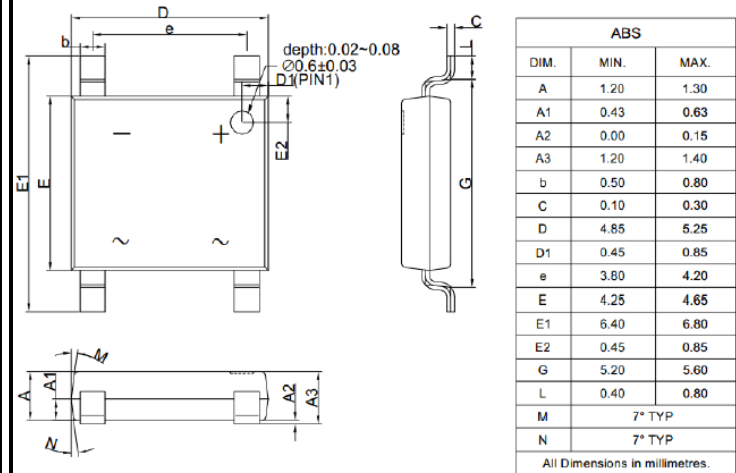
**APPLICATION**

- Energy saving lamps
- Mobile battery charger

**MECHANICAL DATA**

- Package Material: "Green" molding compound, UL flammability classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 98 grams (Approximate)
- Marking Code: BABS140

**ABS**



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	V
Maximum DC blocking voltage	$V_{DC}$	40	V
Maximum average rectified output current	$I_{(AV)}$	1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	$I_{FSM}$	25	A
$I^2t$ Rating for fusing (1ms<t<8.3ms)	$I^2t$	2.6	A <sup>2</sup> S
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +125	°C

**STATIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=1.0A$ $T_J=25^\circ C$ $T_J=100^\circ C$	$V_F$	-- 0.40	0.50 --	V
Leakage current	$V_R=40V$ $T_J=25^\circ C$ $T_J=100^\circ C$	$I_R$	-- 1.1	200 100	$\mu A$ mA

**DYNAMIC ELECTRICAL CHARACTERISTICS**

PARAMETER	SYMBOL	TYP	UNIT
Typical junction capacitance (Note 5)	$C_J$	150	pF

**THERMAL CHARACTERISTICS**

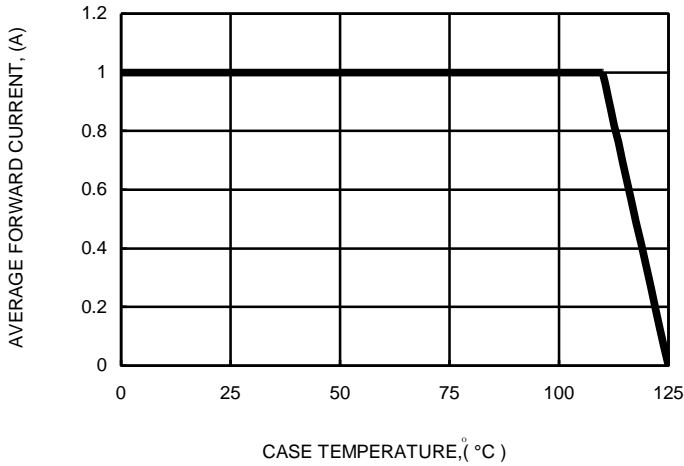
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	$R_{thJc}$ $R_{thJl}$	14 20	°C/W

- Notes:**
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. 300us pulse width, 2% duty cycle.
  5. Measured at 1.0MHz and applied voltage of 4.0VDC.
  6. Thermal resistance test performed in accordance with JESD-51.
  7. The unit mounted on glass-epoxy substrate with 1oz/ft<sup>2</sup>.

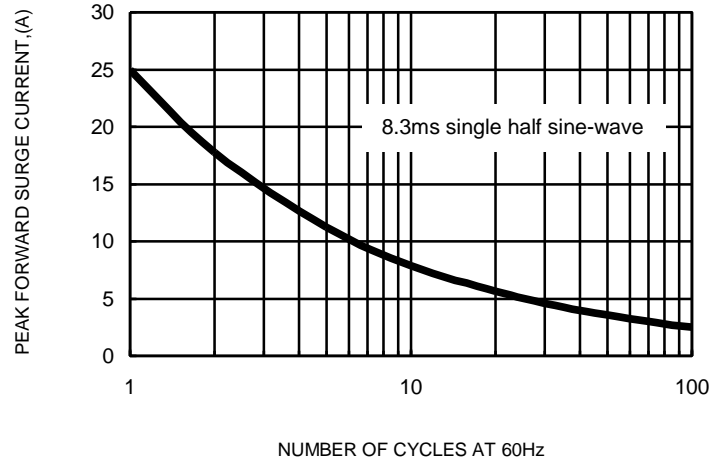
**RATING AND CHARACTERISTIC CURVES**

**BABS140**

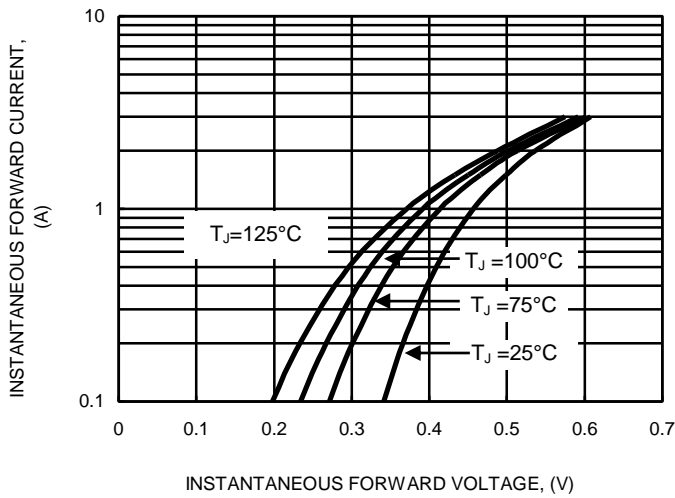
**FIG.1 FORWARD CURRENT DERATING CURVE**



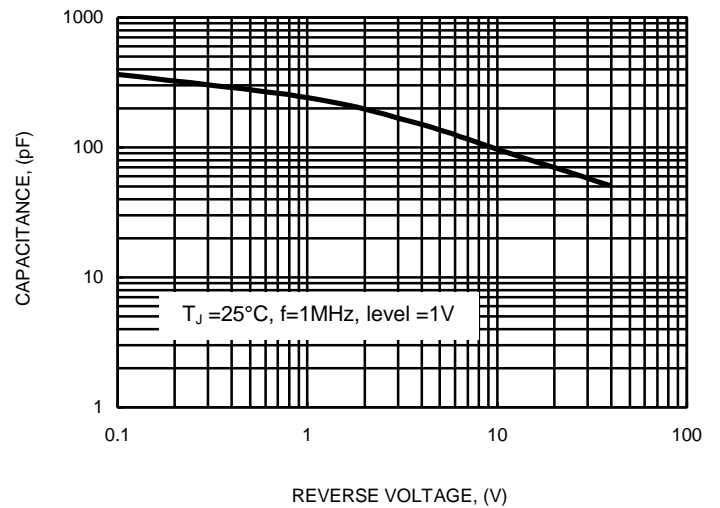
**FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT**



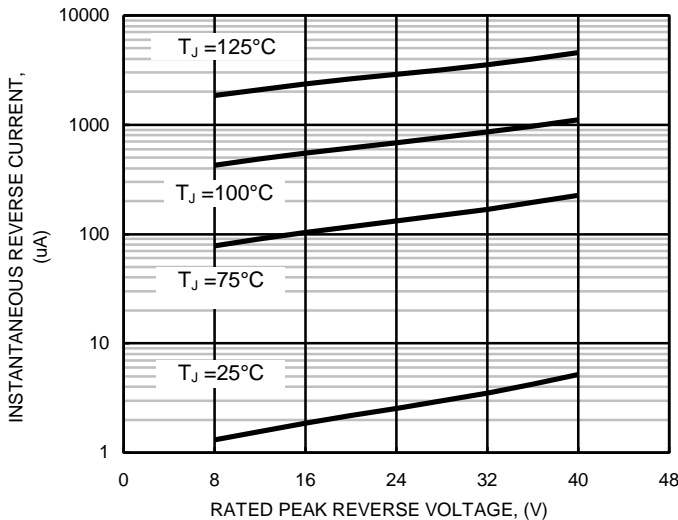
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 TYPICAL JUNCTION CAPACITANCE**



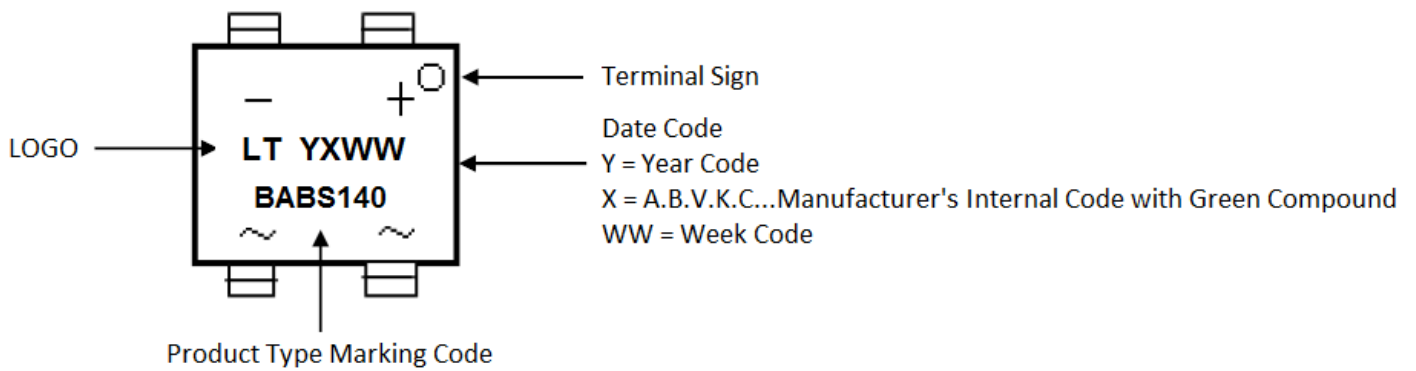
**FIG.5 TYPICAL REVERSE CHARACTERISTICS**



### Ordering Information:

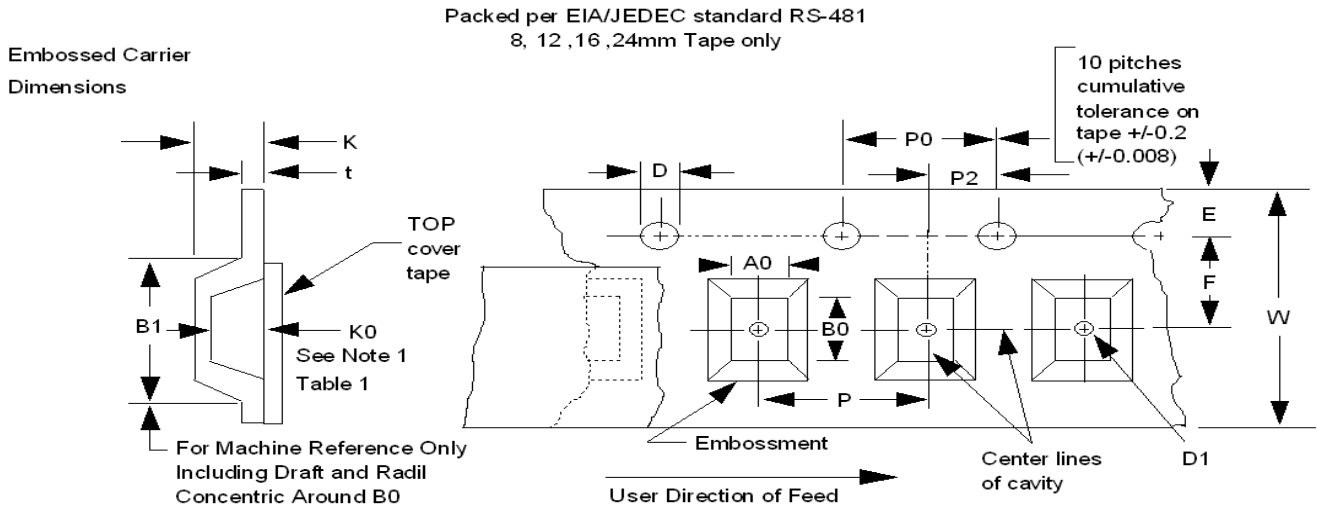
Part Number	Package	Packing	
		Qty.	Carrier
BABS140	ABS	3000pcs	Tape & Reel

### Marking Information:



**PACKAGING INFORMATION**  
**BABS140**

**Embossed Carrier Dimensions**



**EMBOSSD TYPE**

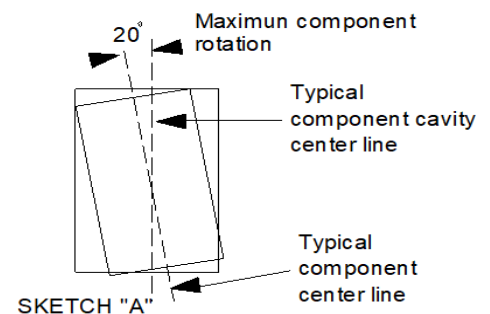
**ALL DIMENSION IN MILLIMETERS AND (INCHES)**

TAPE SIZE	D	E	PO	t (MAX)	A0B0K0	CONSTANT DIMENSION
12mm	1.55+0.10/-0.0 (0.059 +0.004 -0.00)	1.75+/-0.10 (0.069+/-0.004)	4.0+/-0.10 (0.157+/-0.004)	0.6 (0.024)	SEE NOTE 1	

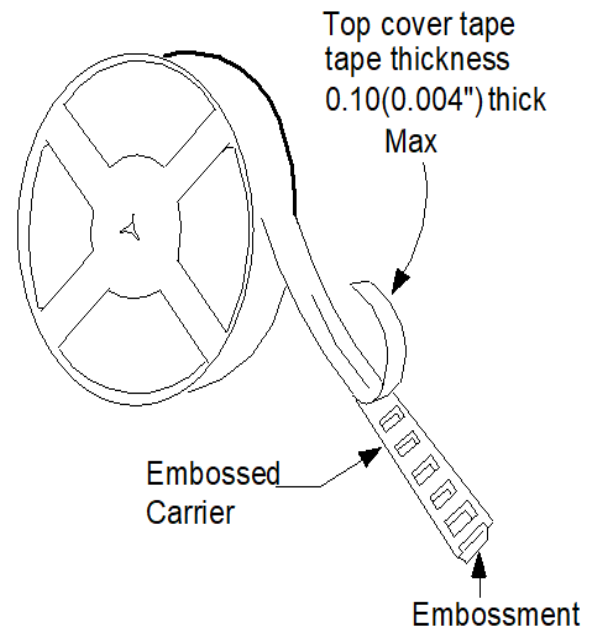
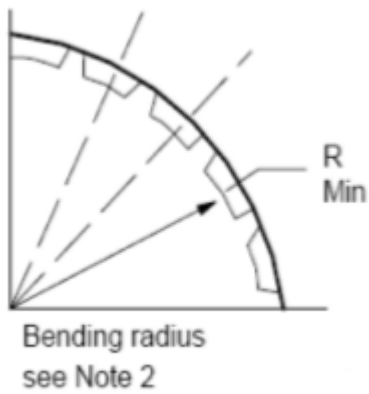
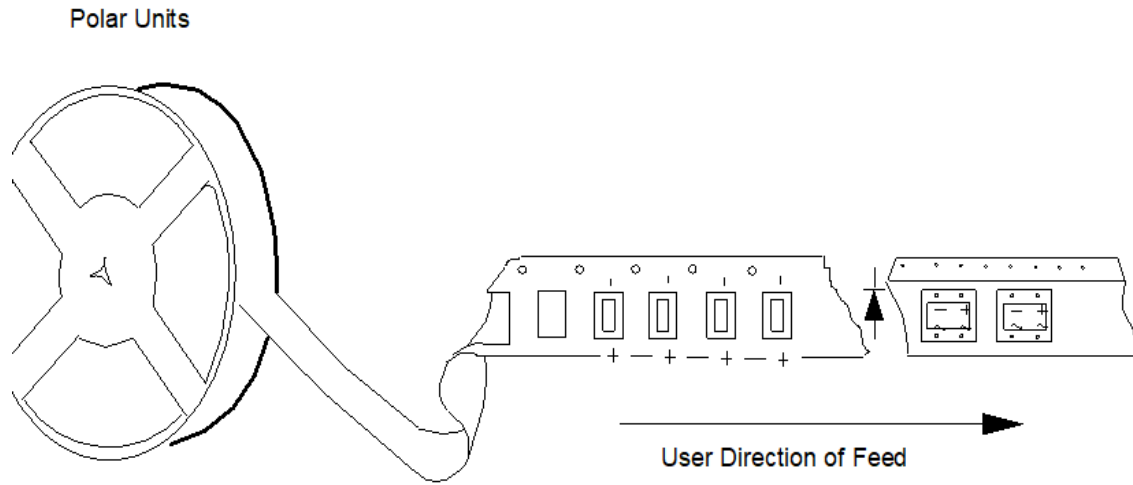
TAPE SIZE	B1 MAX	D1 MIN	F	K MAX	P2	R	W	P	VARIABLE DIMENSIONS
12mm	8.2 (0.323)	1.5 (0.59)	5.5+/-0.05 (2.17+/-0.002)	4.5 (0.117)	2.0+/-0.05 (0.079+/-0.002)	30 (1.181)	12.0+/-0.30 (0.472+/-0.012)	8.0+/-0.10 (0.315+/-0.004)	

Note 1: A0B0K0 are determined by component size. The clearance between the component and the cavity must be within 0.05 min. to 0.50 max. for 8 mm tape, 0.05 min. to 0.65 max. for 12mm tape, 0.15 min. to 0.90 max. for 16mm tape, and 0.05 min. to 1.00 max. for 24 mm tape and larger. The component cannot rotate more than 20 within the determined cavity. See sketch "A" below.

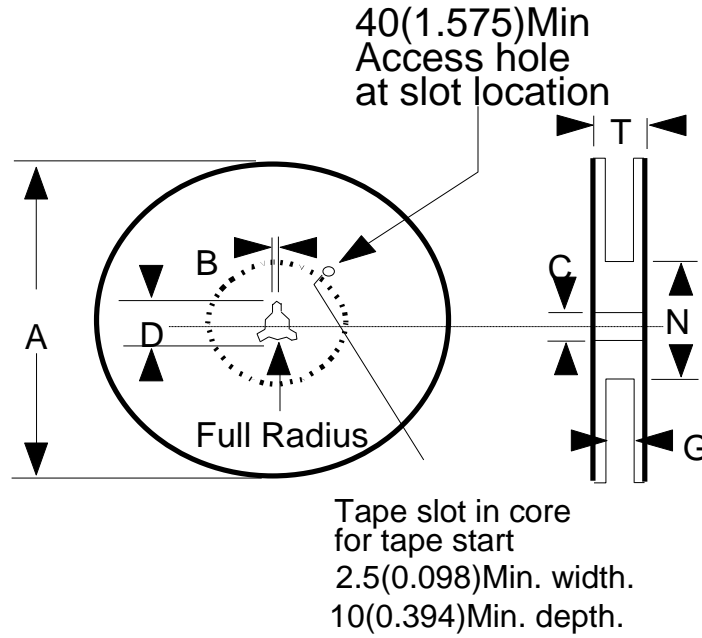
2: Tape and component shall pass around radius "R" without damage



**PACKAGING INFORMATION**  
**BABS140**



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**BABS140**



**REEL DIMENSIONS**

TAPE SIZE	A MAX	B MAX	C	D MIN	N MIN	G	T MAX
12mm	330 (13.0)	1.5 (0.06)	13.0+/-0.5 (0.512+/-0.020)	20.2 (0.80)	7.5 (2.952)	12.4+2.0/-0.0 (0.488+0.078/-0.0)	18.4 (0.724)

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