

BAS40BRW/BAS40DW-04

BAS40DW-05/BAS40DW-06/BAS40TW

List

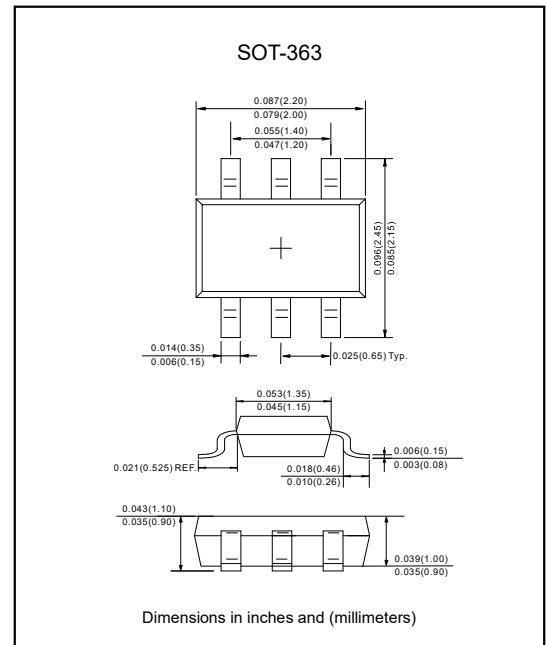
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BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****200mA 40V Small Signal Schottky Array Diode****Features**

- Low forward voltage drop.
- Fast switching.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. BAS40BRW-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-363.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline**Maximum ratings** (At $T_A=25^{\circ}\text{C}$, unless otherwise noted)

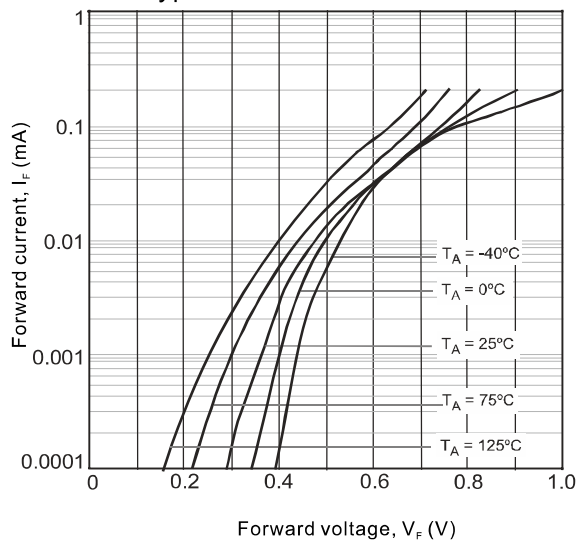
Parameter	Symbol	Value	Unit
Non-repetitive peak reverse voltage	V_{RRM}	40	V
DC blocking voltage	V_R	40	V
Forward continuous current	I_O	200	mA
Power dissipation	P_D	200	mW
Thermal resistance, junction to ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Operating temperature	T_J	+125	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-65 to +125	$^{\circ}\text{C}$

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

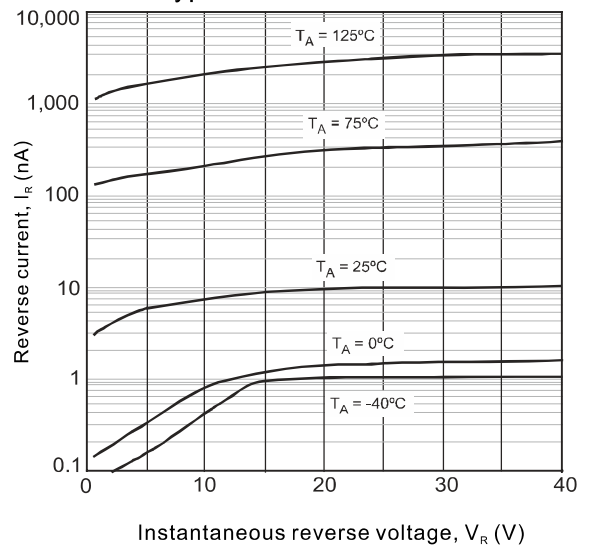
Parameter	Symbol	Test conditions	Min	Max	Unit
Reverse breakdown voltage	V_{BR}	$I_R=10\mu\text{A}$	40		V
Reverse current	I_R	$V_R=30\text{V}$		0.2	μA
Forward voltage	V_F	$I_F=1\text{mA}$		0.38	V
		$I_F=40\text{mA}$		1	
Total capacitance	C_T	$V_R=0\text{V}$, $f=1.0\text{MHz}$		5	pF
Reverse recovery time	t_{rr}	$I_F=I_R=1\text{mA}$, $I_F=10\text{mA}$, $R_L=100\Omega$		5	ns

BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****Rating and characteristic curves**

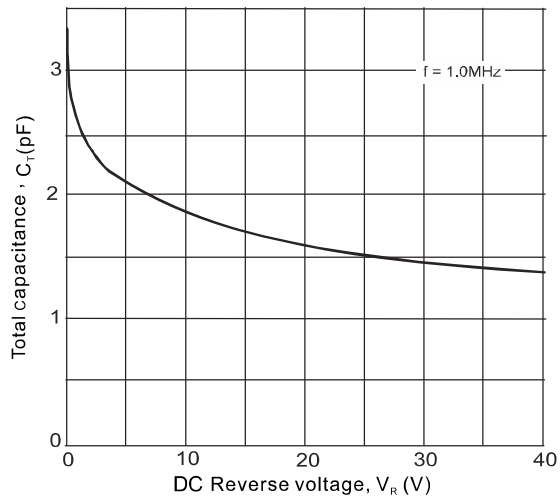
Typical forward characteristics



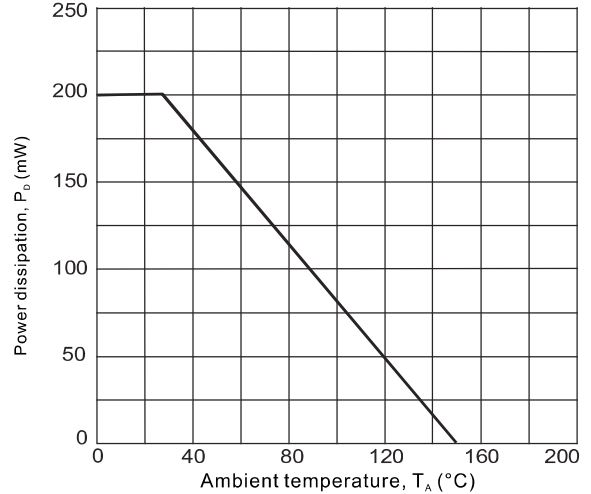
Typical reverse characteristics



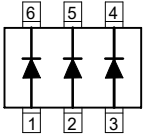
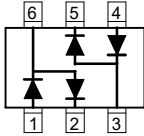
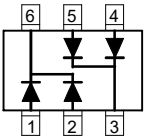
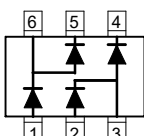
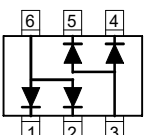
Total capacitance vs. Reverse voltage



Power de-rating curve

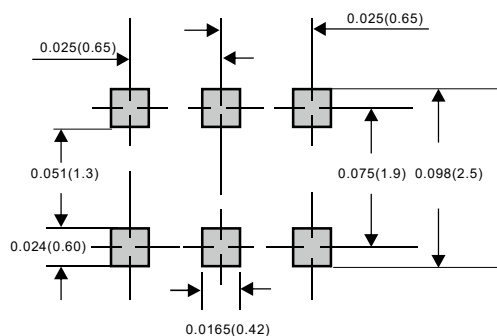


BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****Pinning information & Marking**

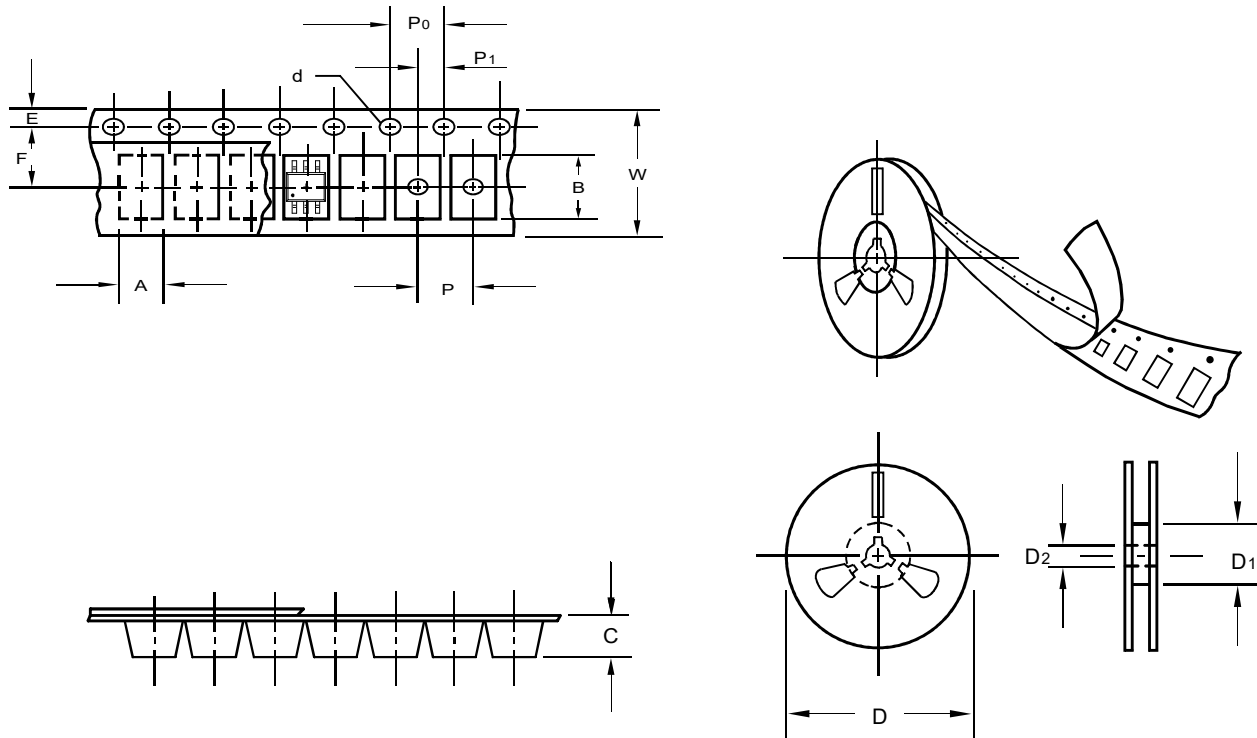
Type number	Marking code	Symbol	Type number	Marking code	Symbol
BAS40TW	K43		BAS40DW-04	K44	
BAS40DW-05	K45		BAS40BRW	K47	
BAS40DW-06	K46				

Suggested solder pad layout

SOT-363



Dimensions in inches and (millimeters)

BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****Packing information**

unit:mm

Item	Symbol	Tolerance	SOT-363
Carrier width	A	0.1	2.25
Carrier length	B	0.1	2.55
Carrier depth	C	0.1	1.20
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Tape width	W	0.3	8.00

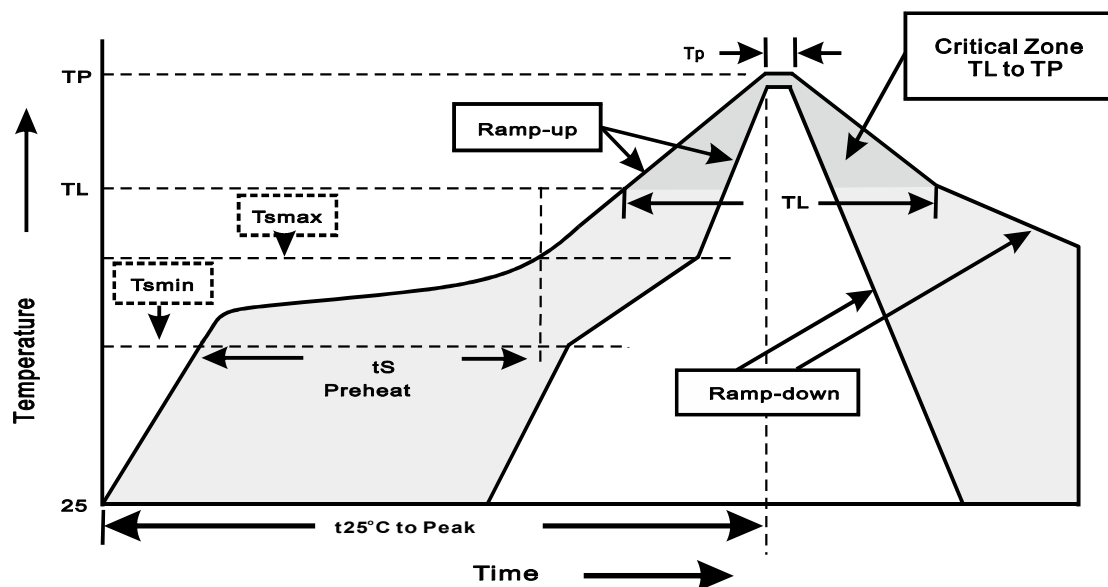
Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****Reel packing**

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	REEL DIA, (m/m)	CARTON (pcs)
SOT-363	7"	3,000	4.0	30,000	178	240,000

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices

**3.Reflow soldering**

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} to T_L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

BAS40BRW/BAS40DW-04**BAS40DW-05/BAS40DW-06/BAS40TW****High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec.	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=125^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A=25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P _{sig} at $T_A=121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	Peak Forward Surge Current at 60Hz for 1cycle	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A=85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031