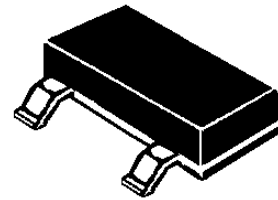


# BAS40 and BAS70

**SCHOTTKYarray™ SERIES**


## DESCRIPTION

Various configurations of Schottky barrier's diodes in SOT-23 packages are provided for general-purpose use in high-speed switching, mixers and detector applications. They may also be used for signal terminations at the board level. This helps maintain signal integrity and counteract the transmission-line effects with (PC) board traces by clamping over/and undershoot from signal reflections with the schottky-low-threshold voltages. This type of termination also does not depend on matching the transmission line characteristic impedance, making it particularly useful where line impedance is unknown or a variable. This method of termination can control distortions of clock, data, address, and control lines as well as provides a stabilizing effect on signal jitter. It can also significantly reduce power consumption compared to standard resistor- based termination methods.

## FEATURES

- Protects from line to  $V_{CC}$  and line to ground
- Clamps within one forward diode threshold voltage
- Low forward voltage and reverse recovery characteristics
- Bidirectional-low-forward available with "-04" suffix (Figure 2)
- SOT-23 Surface Mount packaging for small foot print

## MAXIMUM RATINGS

- Operating Temperatures:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Storage Temperature:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Power dissipation at  $T_{\text{amb}} = 25^{\circ}\text{C}$  is 200 mW
- Forward Continuous Current at  $T_{\text{amb}} = 25^{\circ}\text{C}$  is 200 mA
- Surge Forward Current At  $t_p < 1$  s,  $T_{\text{amb}} = 25^{\circ}\text{C}$  is 600 mA

## PACKAGING

- Tape & Reel EIA Standard 481
- 7 inch reel 3,000 pieces
- 13 inch reel 10,000 pieces

## MECHANICAL

- Molded SOT-23 Surface Mount
- Weight: .008 grams (approximate)
- Body Marked with device number

## ELECTRICAL CHARACTERISTICS PER DIODE @ $25^{\circ}\text{C}$ Unless otherwise specified

DEVICE TYPE	DEVICE MARKING	FIGURE	Repetitive Peak Reverse Voltage	Reverse Breakdown Voltage Tested with 10 $\mu$ A Pulse	Leakage Current Pulse test $t_p < 300\mu\text{s}$ @		Forward Voltage Pulse Test $t_p < 300\mu\text{s}$ at $I_F = 1$ mA at $I_F = 40$ mA			Reverse Recovery Time from $I_F = 10$ mA through $I_R = 10\text{mA}$ to $I_R = 1\text{mA}$	Thermal Resistance Junction to Ambient Air	Capacitance At $V_R = 0\text{V}$ $F = 1$ MHz $C_{\text{tot}}$
			$V_{\text{RRM}}$ (VOLTS)	$V_{\text{BR}/\text{IR}}$ (VOLTS)	$I_R$ (nA)		$V_F$ (mV)			$t_r$ (ns)	$R_{\text{thJA}}$ (K/W)	pF
			TYP	MIN	TYP	MAX	$I_F = 1\text{mA}$	$I_F = 15\text{mA}$	$I_F = 40\text{mA}$	MAX	MAX	MAX
BAS40	43	1	40	40	20	100	380		1000	5	430	5
BAS40-04	44	2	40	40	20	100	380		1000	5	430	5
BAS40-05	45	3	40	40	20	100	380		1000	5	430	5
BAS40-06	46	4	40	40	20	100	380		1000	5	430	5
BAS70	73	1	70	70	20	100	410	1000		5	430	2
BAS70-04	74	2	70	70	20	100	410	1000		5	430	2
BAS70-05	75	3	70	70	20	100	410	1000		5	430	2
BAS70-06	76	4	70	70	20	100	410	1000		5	430	2

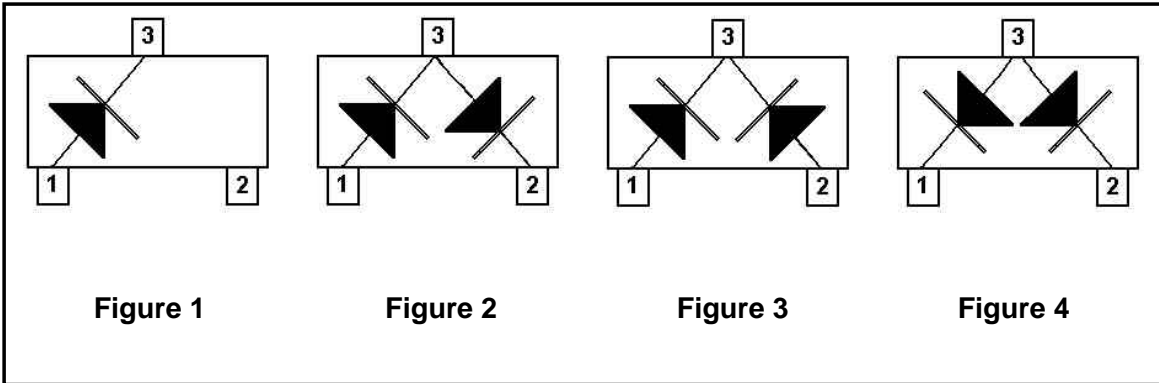


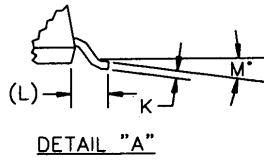
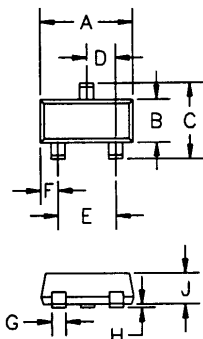
Figure 1

Figure 2

Figure 3

Figure 4

**PACKAGE OUTLINE**



DIM*	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.119	2.8	3.04	-
B	.047	.055	1.20	1.40	-
C	.083	.104	2.10	2.64	-
D	.035	.040	0.88	1.02	-
E	.070	.081	1.78	2.05	-
F	.017	.024	.44	.60	-
G	.014	.020	.37	.51	-
H	.0005	.004	.013	0.10	-
J	.034	.040	.87	1.02	-
K	.003	.007	.085	.180	-
L	-	.022	-	0.55	REF
M	0	8*	0	8*	-

**PAD DIMENSIONS**

