

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

## MARKING

A6

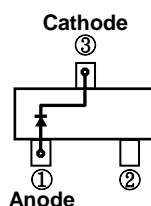
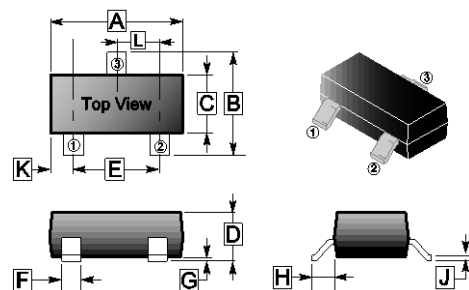
## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

## ORDER INFORMATION

Part Number	Type
BAS16-C	Lead (Pb)-free and Halogen-free

## SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.65	3.10	G	0	0.18
B	2.10	3.00	H	0	0.55 REF.
C	1.10	1.80	J	0.05	0.26
D	0.89	1.40	K	0.60	REF.
E	1.70	2.30	L	0.95	TYP.
F	0.28	0.55			

## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Continuous Reverse Voltage	V <sub>R</sub>	75	V
Peak Forward Current	I <sub>F</sub>	200	mA
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mA
Total Device Dissipation FR-5 Board <sup>1</sup>	P <sub>D</sub>	T <sub>A</sub> =25°C	225
		Derate Above 25°C	1.8
Thermal Resistance, Junction-Ambient	R <sub>θJA</sub>	556	°C/W
Total Device Dissipation Alumina Substrate <sup>2</sup>	P <sub>D</sub>	T <sub>A</sub> =25°C	300
		Derate Above 25°C	2.4
Thermal Resistance, Junction-Ambient	R <sub>θJA</sub>	417	°C/W
Junction, Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C

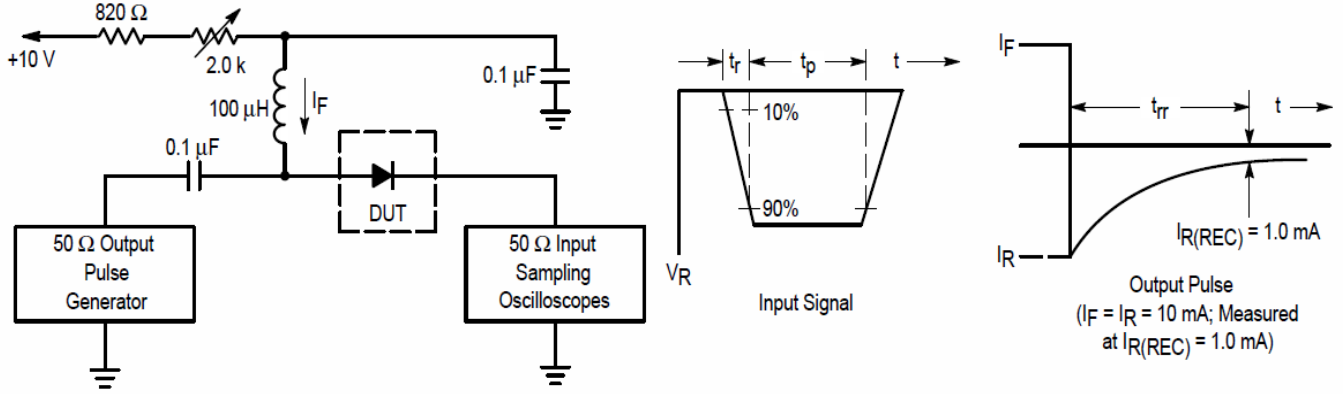
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise specified)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Voltage Leakage Current	I <sub>R</sub>	-	-	1	μA	V <sub>R</sub> =75V
		-	-	50		V <sub>R</sub> =75V, T <sub>J</sub> =150°C
		-	-	30		V <sub>R</sub> =25V, T <sub>J</sub> =150°C
Reverse Breakdown Voltage	V <sub>BR</sub>	75	-	-	V	I <sub>BR</sub> =100μA
Forward Voltage	V <sub>F</sub>	-	-	715	mV	I <sub>F</sub> =1mA
		-	-	855		I <sub>F</sub> =10mA
		-	-	1000		I <sub>F</sub> =50mA
		-	-	1250		I <sub>F</sub> =150mA
Diode Capacitance	C <sub>D</sub>	-	2	-	pF	V <sub>R</sub> =0, f=1MHz
Forward Recovery Voltage	V <sub>FR</sub>	-	-	1.75	V	I <sub>F</sub> =10mA, t <sub>r</sub> =20nS
Reverse Recovery Time	T <sub>RR</sub>	-	6	-	nS	I <sub>F</sub> =I <sub>R</sub> =10mA, R <sub>L</sub> =50Ω
Stored Charge	Q <sub>S</sub>	-	45	-	pC	I <sub>F</sub> =10mA to V <sub>R</sub> =5V, R <sub>L</sub> =500Ω

Notes:

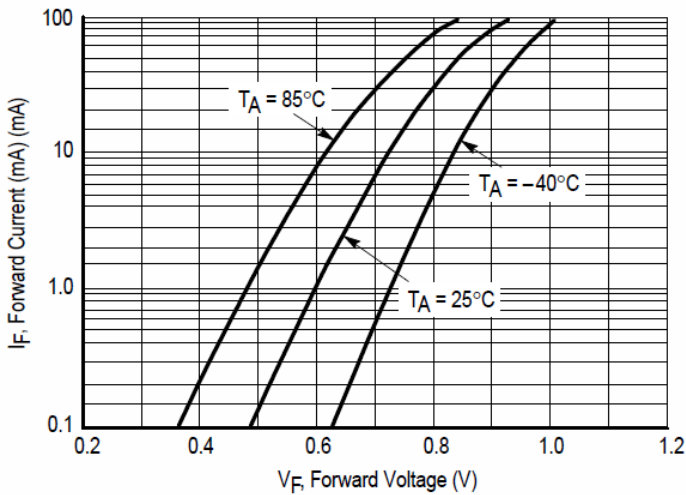
1. FR-5=1X0.75X0.062in.
2. Alumina=0.4X0.3X0.024in. 99.5% alumina.

**RATINGS AND CHARACTERISTIC CURVES**

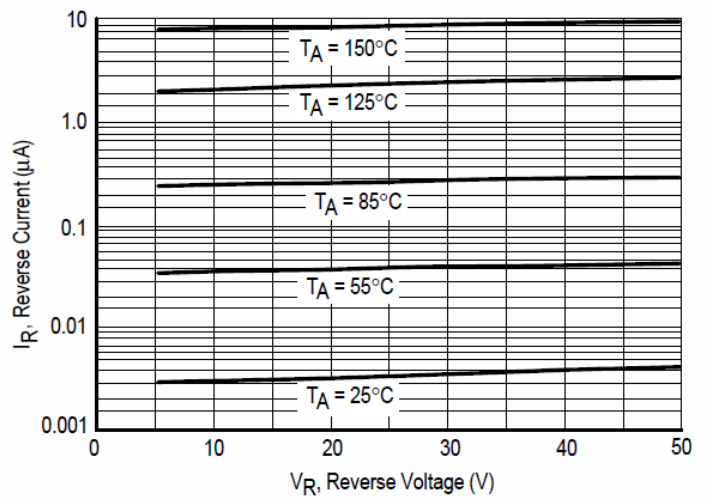


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10 mA.  
3.  $t_p \gg t_{rr}$

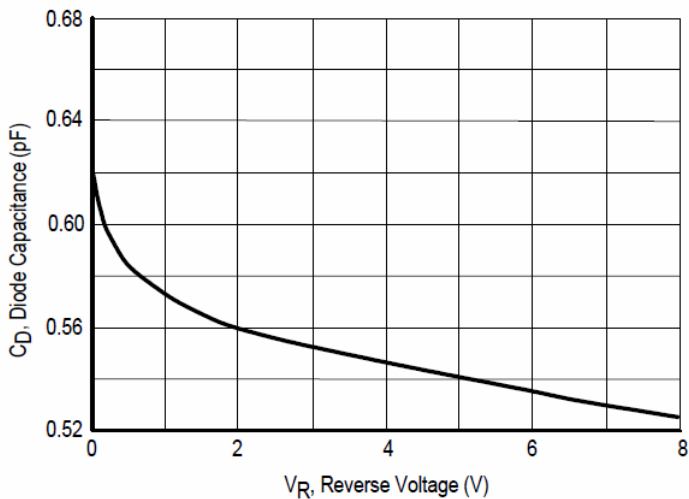
**Figure 1. Recovery Time Equivalent Test Circuit**



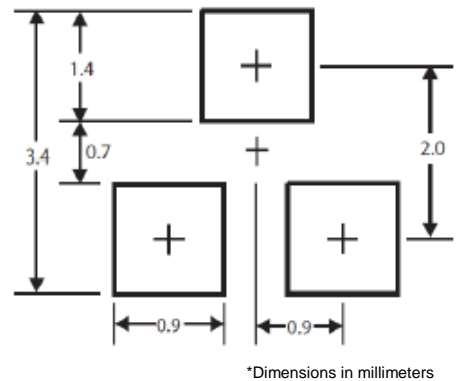
**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Capacitance**



**Figure 5. Mounting Pad Layout**