BAS40 / 04 / 05 / 06

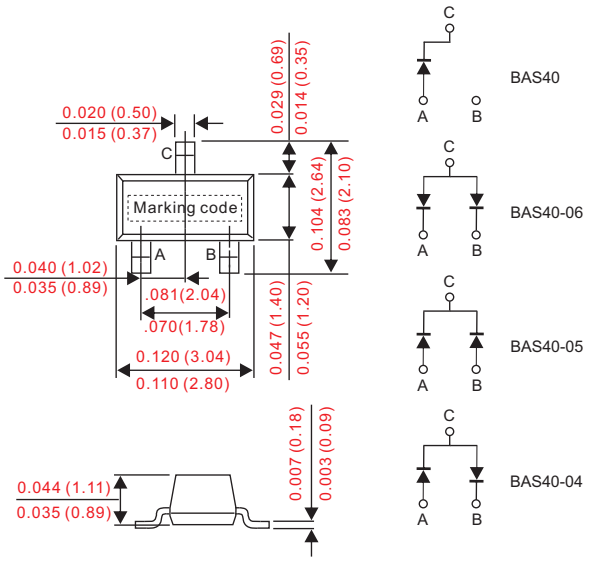
200mA Surface Mount Small Signal Diodes

■ Features

- Low current rectification and high speed switching.
- Small surface mount type.
- Up to 200mA current capability.
- Low forward voltage drop (VF = 1.00V typ. @40mA).
- Silicon epitaxial planar chip, metal silicon junction.
- Suffix "G" indicates Halogen-free part, ex.BAS40G.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228

■ Outline

SOT-23



Dimensions in inches and (millimeters)

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	BAS40	BAS40-04	BAS40-05	BAS40-06	UNIT
Marking code		B1	CB	45	L2	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40				V
Power Dissipation TA = 25°C	P_D	150				mW
Forward Continuous Current	I_F	120				mA
Junction Temperature	T_J	+150				°C
Storage Temperature	T_{STG}	-65 ~ +150				°C
Operating ambient temperature	T_{amb}	-65 ~ +150				°C
Repetitive Peak forward surge current @ t_P≤1s;δ≤0.5	I_{FSM}	120				mA
Non-repetitive peak forward current @ t_P<10ms	I_{FSM}	200				mA
Thermal resistance from junction to ambient	$R_{\theta JA}$	500				K /W

Characteristic		Symbol	MIN.	TYP.	MAX.	UNIT
Forward Voltage	I_F = 1mA I_F = 10mA I_F = 40mA	V_F			0.40 0.56 1.0	V
Diode Capacitance	V_R = 0V, f = 1.0MHz	C_d			5.0	pF
Reverse Current	V_R = 30V V_R = 40V	I_R			1 10	uA

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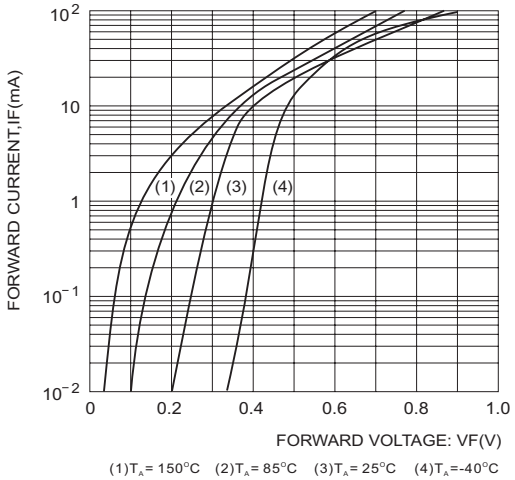
Revision : C

■ Rating and characteristic curves

FIG.1- Forward current as a function of forward voltage; typical values



(1)T_A= 150°C (2)T_A= 85°C (3)T_A= 25°C (4)T_A=-40°C

FIG.2- Reverse current as a function of reverse voltage; typical values

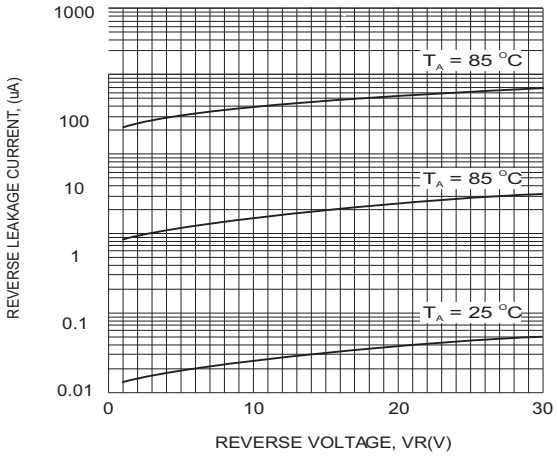


FIG.3- Differential forward resistance as a function of forward current ;typical values.

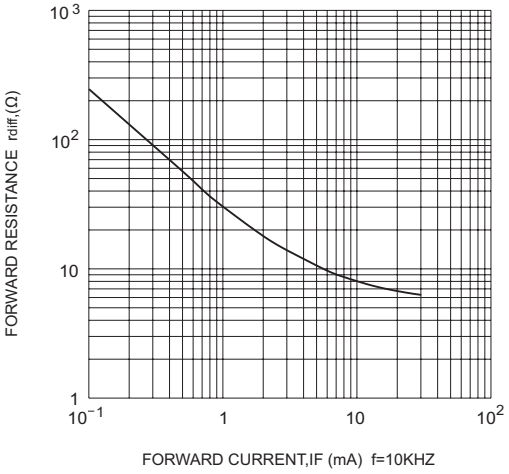
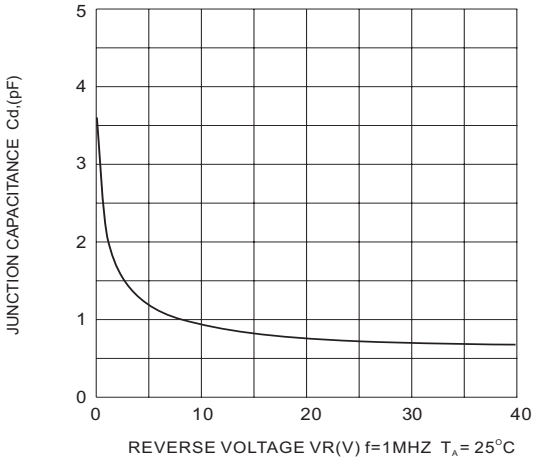
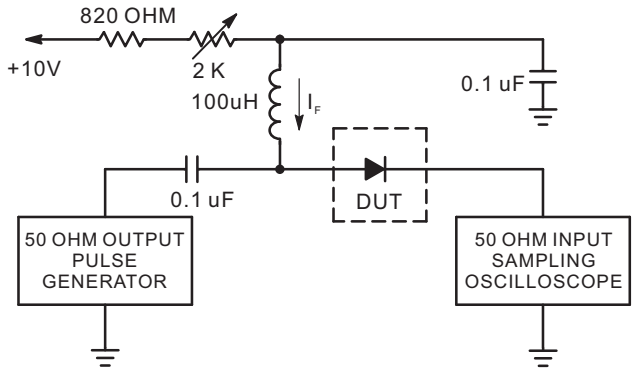
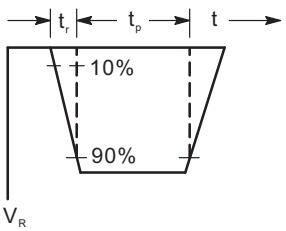
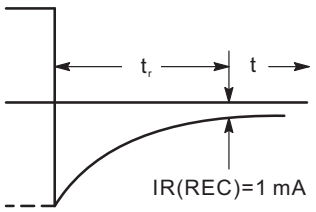


FIG.4 -Diode capacitance as a function of reverse voltage ;typical values.









OUTPUT PULSE
(IF=IR=10mA;measured at iR(REC)=1mA)

Notes : 1. A2.0 Kohm variable resistor adjusted for a forward Current (IF) of 10mA.
2. Input pulse is adjusted so IR(peak) is equal to 10 mA.
3. tp >> trr.

Recovery Time Equivalent Test Circuit

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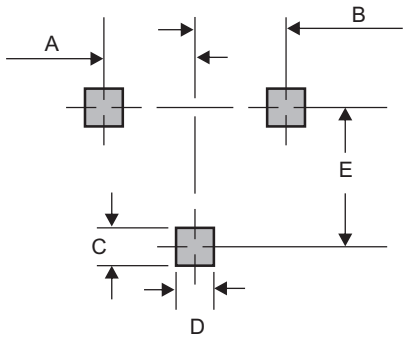
■ SOT-23 foot print



A	B	C	D	E
0.037 (0.95)	0.037 (0.95)	0.035 (0.90)	0.031 (0.80)	0.079 (2.00)

Dimensions in inches and (millimeters)

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