

Features

- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- High Conductance
- Fast Switching Speed
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance : 357°C/W Junction to Ambient(Note 2)

MCC Part Number	Repetitive Peak Reverse Voltage V_{RRM}	RMS Reverse Voltage $V_{R(RMS)}$	DC Blocking Voltage V_R
BAS19HE3	120V	85V	120V
BAS20HE3	200V	141V	200V
BAS21HE3	250V	177V	250V

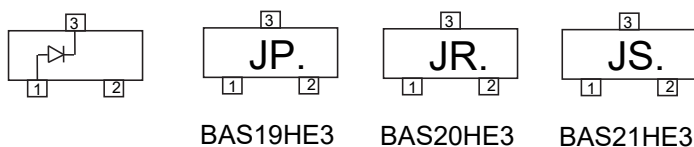
Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Rectified Forward Current	$I_{F(AV)}$	225mA	(Note 2)
Non-Repetitive Peak Forward Surge Current	I_{FSM}	9.0A 0.5A	@ t=1us @ t=1s
Repetitive Peak Forward Current	I_{FRM}	625mA	
Power Dissipation	P_{TOT}	350mW	$T_A=25^\circ\text{C}$

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

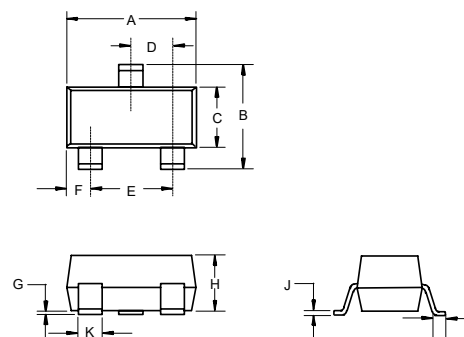
2. Mounted on FR-4 board with recommended pad layout.

Internal Structure and Marking Code



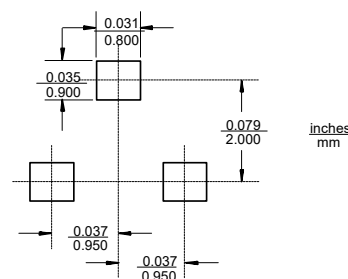
350mW Small Signal Diodes

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.014	0.020	0.35	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

BAS19HE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V_{BR}	$I_R=100\mu A$	120			V
Forward Voltage	V_F	$I_F=100mA$			1	V
		$I_F=200mA$			1.25	V
Reverse Current	I_R	$V_R=V_{Rmax}$			100	nA
		$V_R=V_{Rmax}, T_J=150^\circ C$			100	μA
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$			5	pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=30mA,$ $I_{rr}=0.1 \times I_R, R_L=100\Omega$			50	ns

BAS20HE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V_{BR}	$I_R=100\mu A$	200			V
Forward Voltage	V_F	$I_F=100mA$			1	V
		$I_F=200mA$			1.25	V
Reverse Current	I_R	$V_R=V_{Rmax}$			100	nA
		$V_R=V_{Rmax}, T_J=150^\circ C$			100	μA
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$			5	pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=30mA,$ $I_{rr}=0.1 \times I_R, R_L=100\Omega$			50	ns

BAS21HE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V_{BR}	$I_R=100\mu A$	250			V
Forward Voltage	V_F	$I_F=100mA$			1	V
		$I_F=200mA$			1.25	V
Reverse Current	I_R	$V_R=V_{Rmax}$			100	nA
		$V_R=V_{Rmax}, T_J=150^\circ C$			100	μA
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$			5	pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=30mA,$ $I_{rr}=0.1 \times I_R, R_L=100\Omega$			50	ns

Curve Characteristics

Fig. 1 - Typical Instantaneous Forward Characteristics

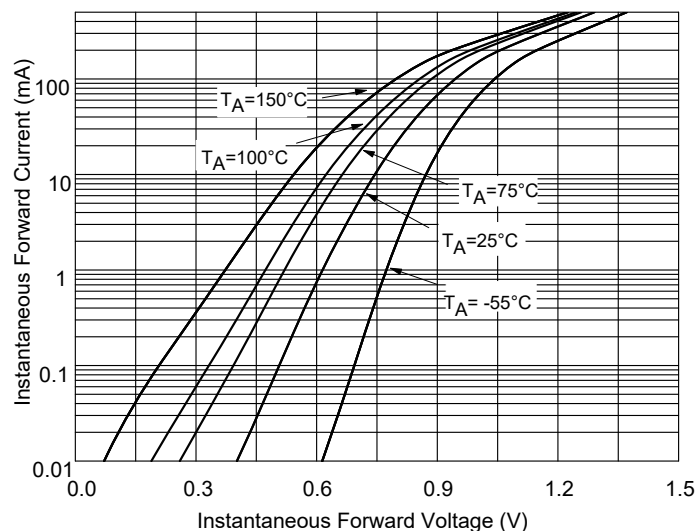


Fig. 2 - Typical Reverse Leakage Characteristics

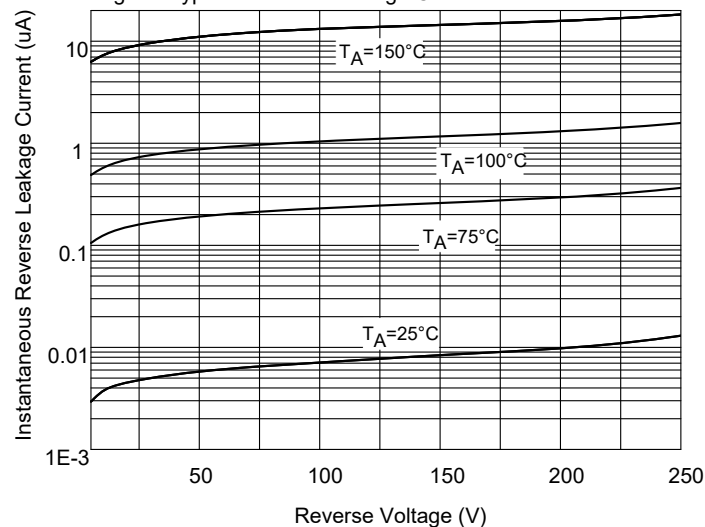


Fig. 3 - Capacitance Characteristics

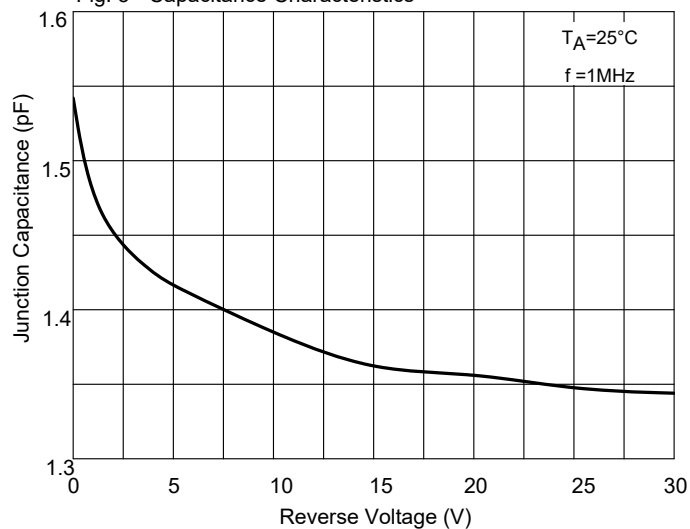
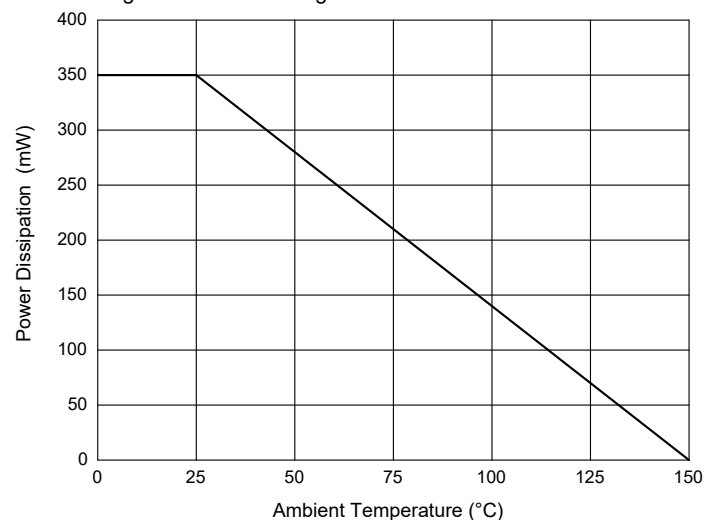


Fig. 4 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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