

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	Device Marking	Repetitive Peak Reverse Voltage V_{RRM}	Continuous Reverse Voltage V_R
BAS19HE3	JP	120V	120V
BAS20HE3	JR	200V	200V
BAS21HE3	JS	250V	250V

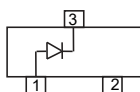
Maximum Ratings @ 25°C Unless Otherwise Specified

Average Rectified Forward Current	$I_{F(AV)}$	225mA	(Note 2)
Forward DC Current	I_{FM}	400mA	$T_A=25^\circ\text{C}$ (Note 2)
Non-Repetitive Peak Forward Surge Current	I_{FSM}	9.0A 0.5A	@ $t=1\mu\text{s}$ @ $t=1\text{s}$
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.

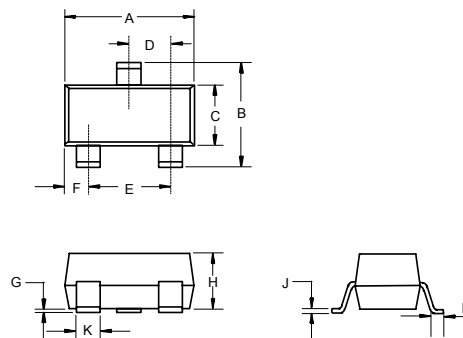
2. Mounted on FR-4 board with recommended pad layout.

Internal Structure



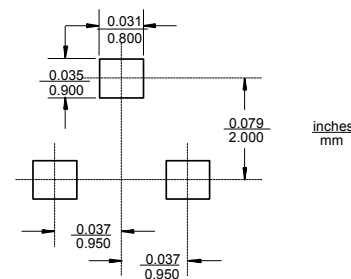
**350mW
Small Signal
Diodes**

SOT-23



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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

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

Curve Characteristics

Fig. 1 - Typical Instantaneous Forward Characteristics

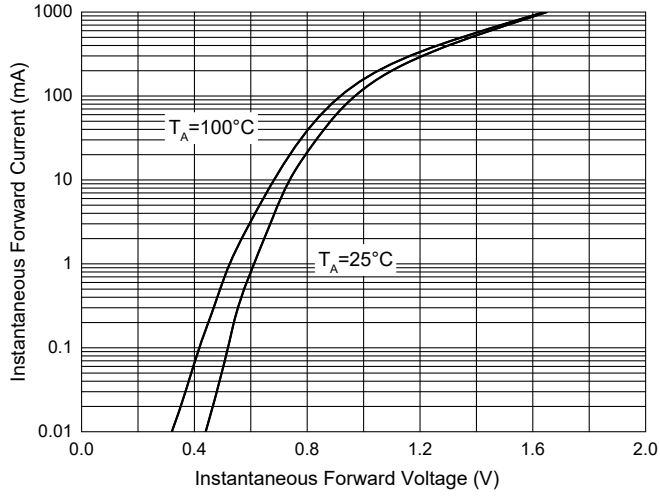


Fig. 2 - Typical Reverse Leakage Characteristics

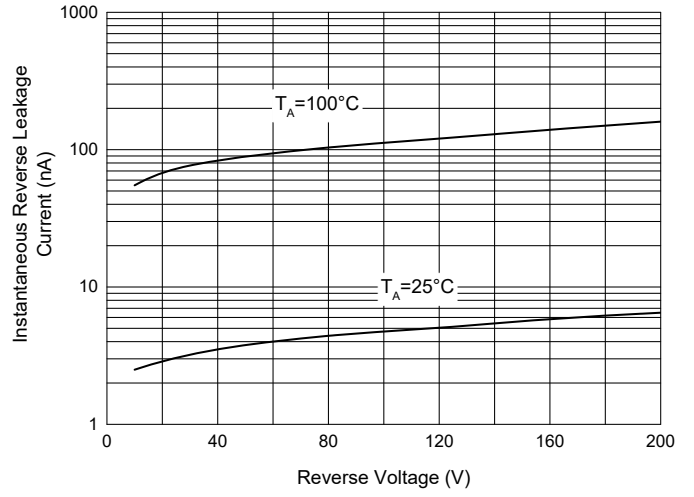


Fig. 3 - Power Derating Curve

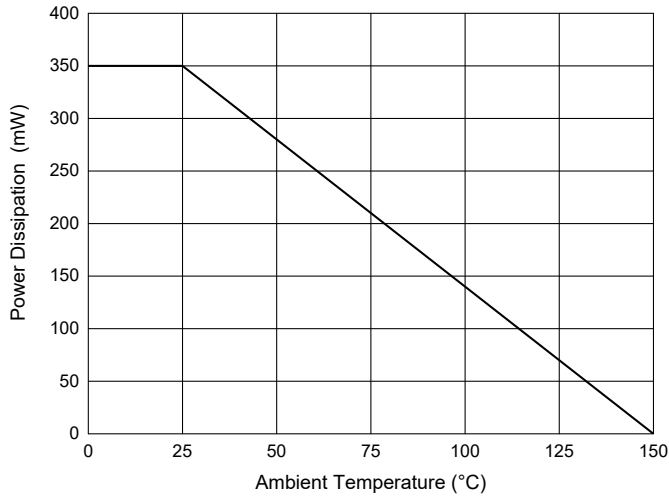
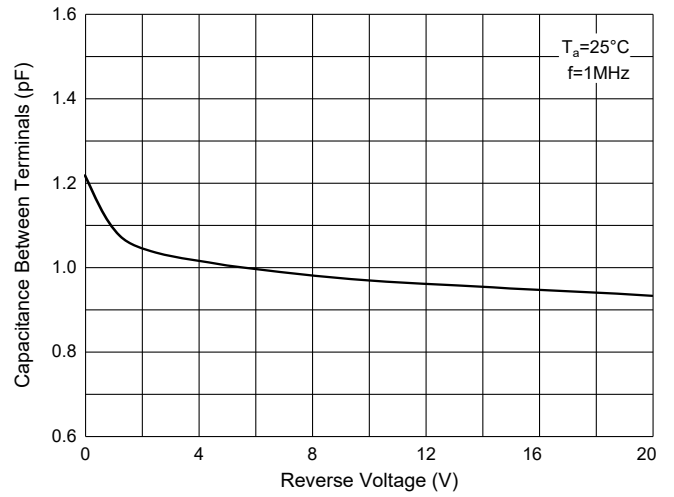


Fig. 4 - Capacitance Characteristics



Ordering Information

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

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages. *Micro Commercial Components Corp.* products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.