



BB178

Preliminary

DIODE

VHF VARIABLE CAPACITANCE DIODE

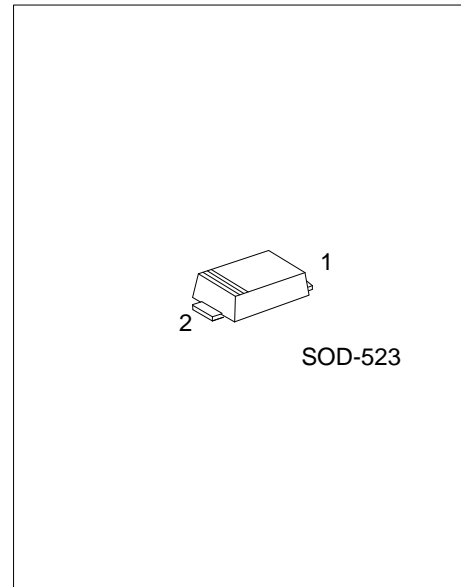
DESCRIPTION

The UTC **BB178** is a planar technology variable capacitance diode providing the designers excellent matching performance, ultra-low series resistance and great linearity.

The UTC **BB178** is suitable for VCO (Voltage Controlled Oscillators) and Electronic tuning in VHF (Very High Frequency) tuners.

FEATURES

- * Excellent matching to 2% DMA
- * Ultra low series resistance.
- * Great linearity
- * C28: 2.6 pF; ratio: 15



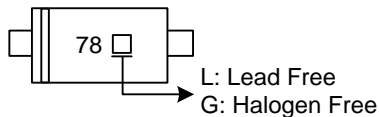
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
BB178L-CC2-R	BB178G-CC2-R	SOD-523	A	K	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

<p>BB178G-CC2-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) CC2 : SOD-523</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Peak Reverse Voltage	In series with a 10 kΩ resistor	V_{RM}	35	V
Continuous Reverse Voltage		V_R	32	V
Continuous Forward Current		I_F	20	mA
Operating Junction Temperature		T_J	-40 ~ +125	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$ unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Current	I_R	$V_R=30\text{V}$			10	nA
		$V_R=30\text{V}, T_J=85^\circ\text{C}$			200	nA
Diode Series Resistance	r_s	$f=100\text{MHz}, V_R$ is the value at which $C_d=30\text{pF}$		0.65	0.8	Ω
Diode Capacitance	C_d	$V_R=1\text{V}, f=1\text{MHz}$	34.65		42.35	pF
		$V_R=28\text{V}, f=1\text{MHz}$	2.361		2.754	pF
Capacitance Ratio	$\frac{C_d(1\text{V})}{C_d(2\text{V})}$	$f=1\text{MHz}$		1.3		
Capacitance Ratio	$\frac{C_d(1\text{V})}{C_d(28\text{V})}$	$f=1\text{MHz}$	13.5			
Capacitance Ratio	$\frac{C_d(25\text{V})}{C_d(28\text{V})}$	$f=1\text{MHz}$		1.08		
Capacitance Matching	$\frac{\Delta C_d}{C_d}$	$V_R=1\sim 28\text{V}$, in a sequence of 15 diodes (gliding)			2	%

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