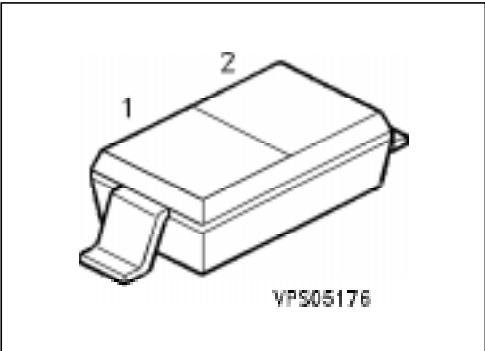


Silicon Variable Capacitance Diode

BB 515

- For UHF and VHF TV/VTR tuners
- Large capacitance ratio
- Low series resistance



Type	Ordering Code (tape and reel)	Pin Configuration			Marking	Package
		1		2		
BB 515	Q62702-B607	C		A	white S	SOD-123

Maximum Ratings

Parameter	Symbol	Values	Unit
Reverse voltage	V_R	30	V
Reverse voltage ($R \geq 5 \text{ k}\Omega$)	V_{RM}	35	
Forward current, $T_A \leq 60 \text{ }^\circ\text{C}$	I_F	20	mA
Operating temperature range	T_{op}	$- 55 \dots + 150$	$^\circ\text{C}$
Storage temperature range	T_{stg}	$- 55 \dots + 150$	

Thermal Resistance

Junction - ambient	$R_{th \text{ JA}}$	≤ 450	K/W
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Electrical Characteristics

at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$	I_R	— —	— —	10 200	nA
Diode capacitance, $f = 1\text{ MHz}$ $V_R = 1\text{ V}$ $V_R = 28\text{ V}$	C_T	17.5 1.9	18.7 2.1	20 2.3	pF
Capacitance ratio $V_R = 1\text{ V}, 28\text{ V}; f = 1\text{ MHz}$	$\frac{C_{T1}}{C_{T28}}$	8.2	8.9	9.8	—
Capacitance matching $V_R = 1\text{ V} \dots 28\text{ V}; f = 1\text{ MHz}$	$\frac{\Delta C_T}{C_T}$	—	—	2.5	%
Series resistance $C_T = 9\text{ pF}, f = 470\text{ MHz}$	r_s	—	0.5	—	Ω
Series inductance	L_s	—	2	—	nH

Diode capacitance $C_T = f(V_R)$

$f = 1\text{ MHz}$

