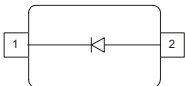


Silicon Variable Capacitance Diode

- For Hyperband TV / VTR tuners, Bd I
- Large capacitance ratio, low series resistance
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



SD199



Type	Package	Configuration	L_S (nH)	Marking
SD199E6327	SOD323	single	1.8	red S

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage-	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

¹⁾Pb-containing package may be available upon special request

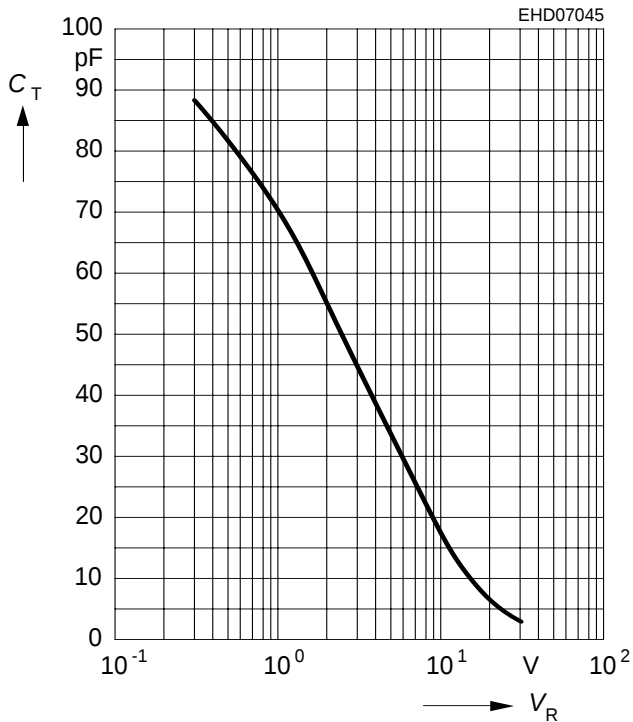
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85$	I_R	- -	- -	10 200	nA
AC Characteristics					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$	C_T	62 47 2.85 2.8	69 54 3.18 3.05	76 62 3.6 3.3	pF
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	C_{T1}/C_{T28}	19.5	22.6	25	-
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	C_{T2}/C_{T25}	15	17	19	
Capacitance matching ¹⁾ $V_R = 1 \dots 28\text{ V}, f = 1\text{ MHz}, 8\text{ diodes sequence}$	$\Delta C_T/C_T$	-	-	2.5	%
Series resistance $V_R = 5\text{ V}, f = 470\text{ MHz}$	r_S	-	1.15	-	Ω

¹⁾For details please refer to Application Note 047.

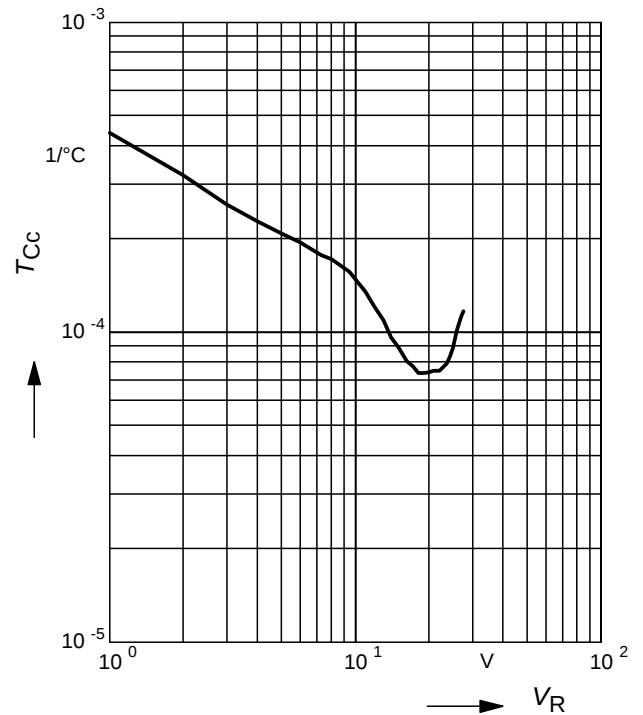
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



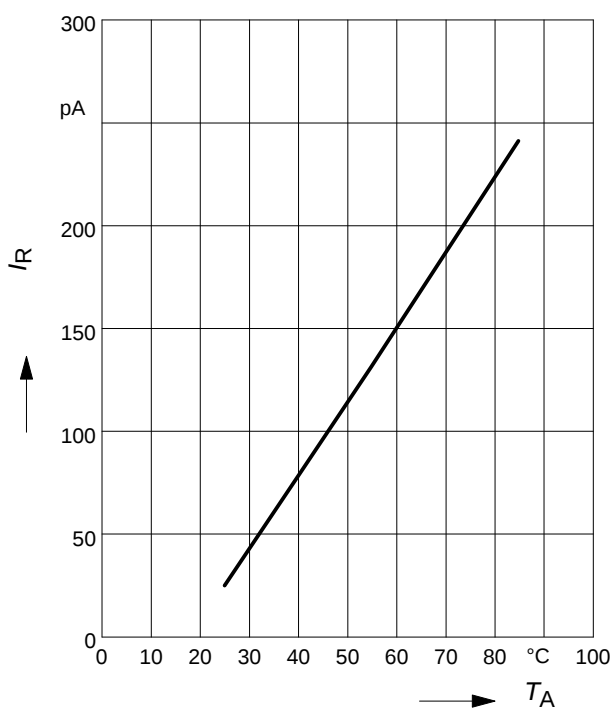
Temperature coefficient of the diode

capacitance $T_{Cc} = f(V_R)$



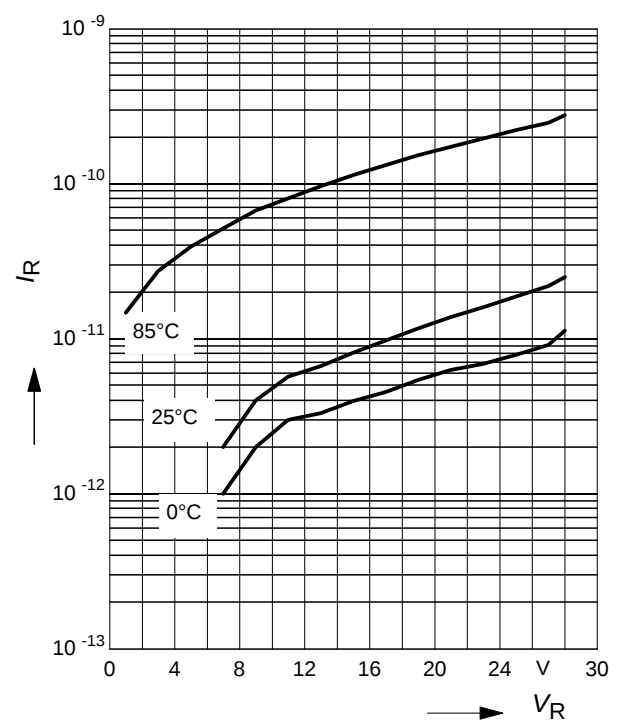
Reverse current $I_R = f(T_A)$

$V_R = 28\text{ V}$

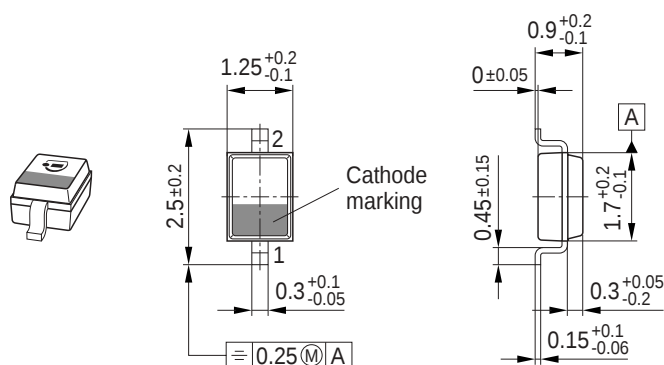


Reverse current $I_R = f(V_R)$

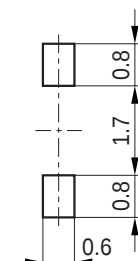
$T_A = \text{Parameter}$



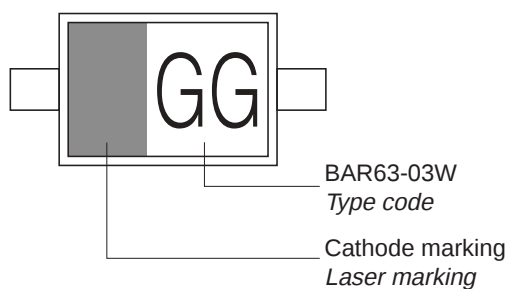
Package Outline



Foot Print

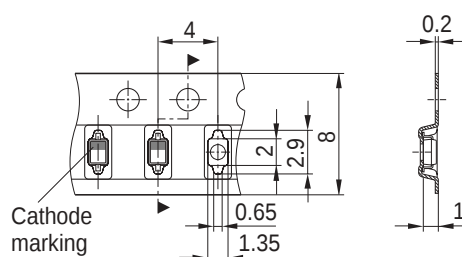


Marking Layout (Example)



Standard Packing

Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
 Reel $\varnothing 330$ mm = 10.000 Pieces/Reel



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