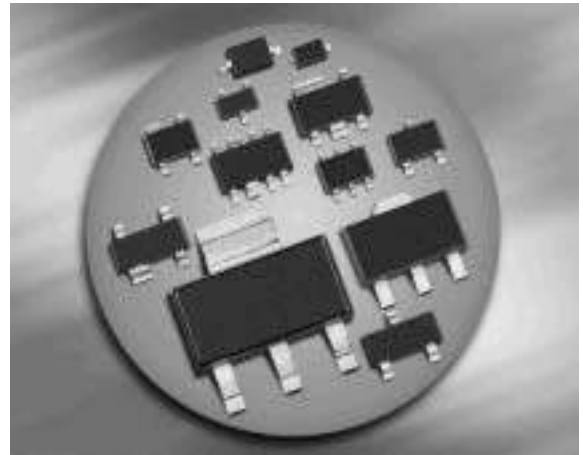
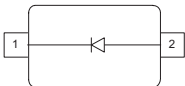


**Silicon Variable Capacitance Diode**

- For Hyperband TV / VTR tuners, Bd I
- Large capacitance ratio, low series resistance
- Pb-free (RoHS compliant) package <sup>1)</sup>
- 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	°C
Storage temperature	$T_{stg}$	-55 ... 150	

<sup>1</sup>Pb-containing package may be available upon special request

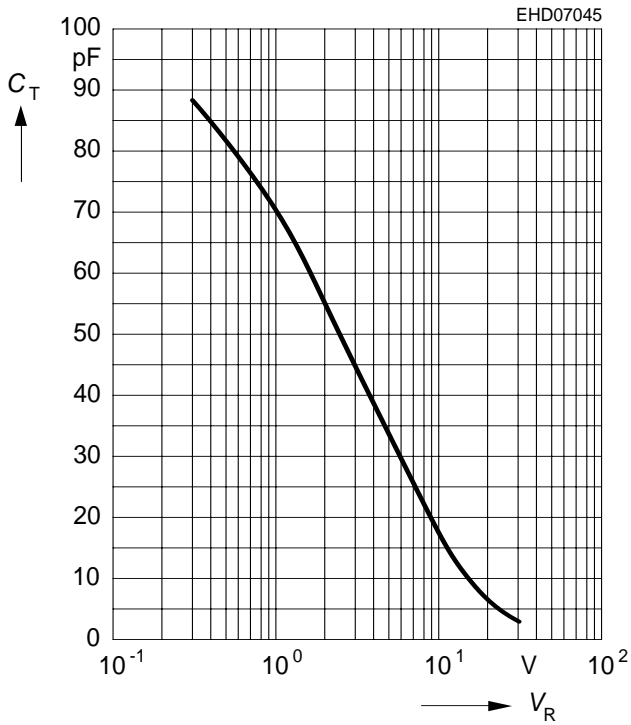
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85$	$I_R$	- -	- -	10 200	nA
<b>AC Characteristics</b>					
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 <sup>1)</sup> $V_R = 1 \dots 28\text{ V}, f = 1\text{ MHz}, 8\text{ diodes sequence}$	$\Delta C_T/C_T$	-	-	2.5	%
Series resistance $V_R = 5\text{ V}, f = 470\text{ MHz}$	$r_S$	-	1.15	-	$\Omega$

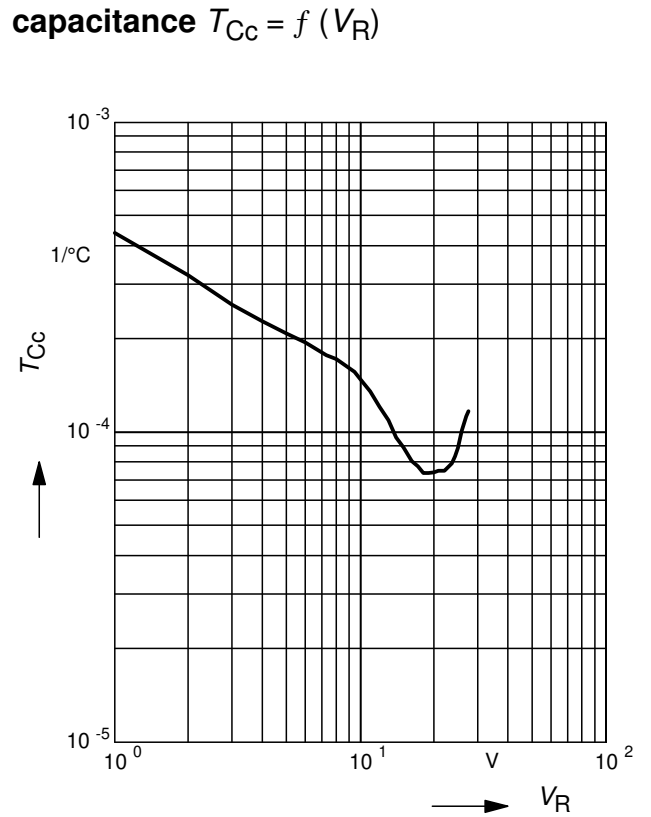
<sup>1</sup>For details please refer to Application Note 047.

**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

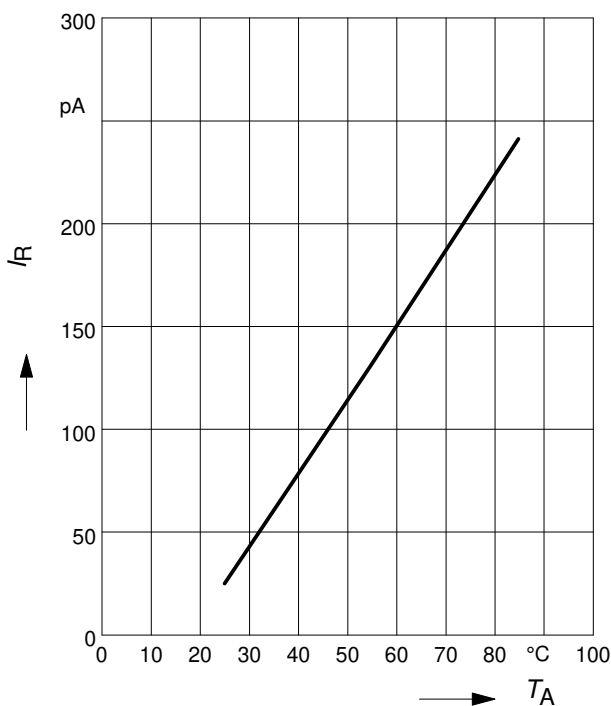


**Temperature coefficient of the diode capacitance  $T_{Cc} = f(V_R)$**



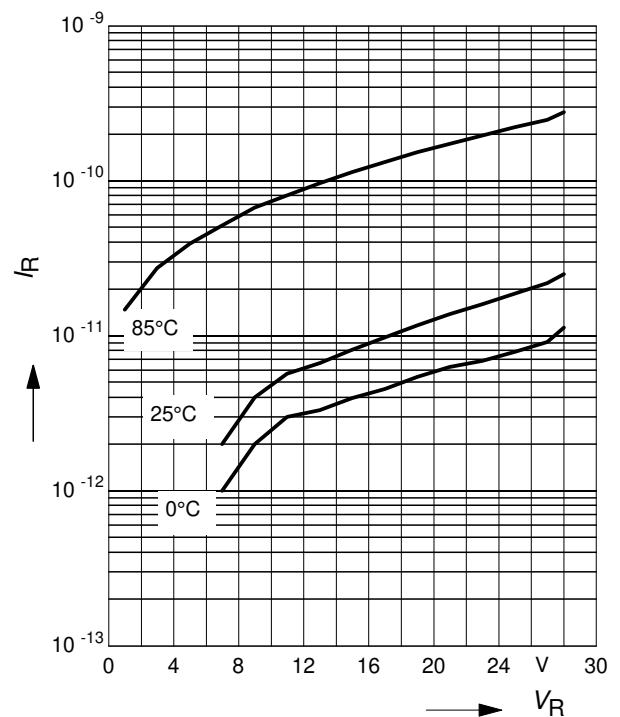
**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{ V}$

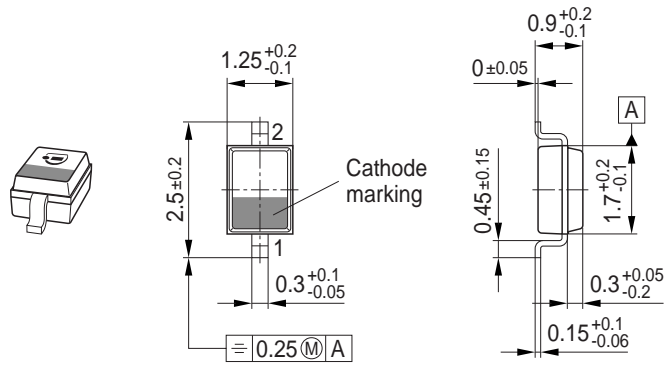


**Reverse current  $I_R = f(V_R)$**

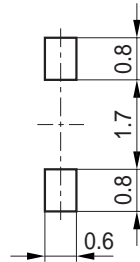
$T_A = \text{Parameter}$



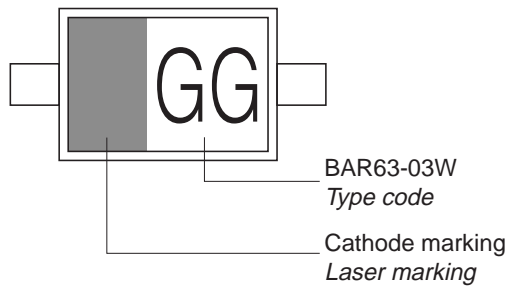
Package Outline



Foot Print

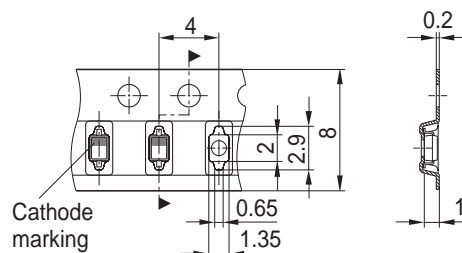


Marking Layout (Example)



Standard Packing

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



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