

Variable capacitance diode for communications equipment

通信機器用電圧可変容量ダイオード

KV1870R/S

FEATURES

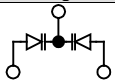
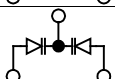
- Very Low Operating Voltage: $V_{OP}=1.0$ to $4.5V$
- Excellent Linearity of The CV Curve
- Extra Large Capacitance Ratio: $A=5.00$ to
- Extra Low Series Resistance: $R_S=0.43\Omega$ (typ.)
- 低電圧動作: $V_{OP}=1.0$ to $4.5V$
- CV特性の優れた直線性
- 極めて大きな容量変化比: $A=5.00\sim$
- 極めて低い直列抵抗: $R_S=0.43\Omega$ (typ.)

CLASSIFICATION

Rank		1	2	3
C	MIN	65.80	68.27	70.74
	MAX	69.25	71.72	74.20

PACKAGE OUTLINE

ORDERING INFORMATION

Part name	Package	Marking	Pin configuration	Ordering information
KV1870R	 SOT23C-3	C7		KV1870RTL...Storage direction: TL(Left type)
KV1870S	 SOT23-3	C7		KV1870STL...Storage direction: TL(Left type)

ABSOLUTE MAXIMUM RATINGS

Parameter	項目	Symbol	記号	Rating	定格	Unit	単位	Remarks	備考
Reverse Voltage	逆方向電圧	V_R		18		V			
Forward Current	順方向電流	I_F		50		mA			
Power Dissipation	許容消費電力	P_D		100		mW			
Storage Temperature Range	保存温度範囲	T_{STG}		-55 to 150		$^{\circ}C$			
Operating Temperature Range	動作温度範囲	T_{OP}		-55 to +85		$^{\circ}C$			

ELECTRICAL CHARACTERISTICS

$T_A=25^{\circ}C$

Parameter 項目	Symbol 記号	Value			Units 単位	Conditions 条件
		MIN	TYP	MAX		
Reverse Voltage 逆方向電圧	V_R	16			V	$I_R=10\mu A$
Reverse Current 逆方向電流	I_R			50.0	nA	$V_R=10V$
Diode Capacitance 容量値	C_1	65.80	70.00	74.20	pF	$V_R=1V, f=1MHz$
	$C_{4.5}$	12.00	13.40	14.80	pF	$V_R=4.5V, f=1MHz$
Series Resistance 直列抵抗	R_S		0.43	0.50	Ω	$V_R=1.5V, f=100MHz$
Capacitance Ratio 容量変化比	A	5.00				C_1/C_5

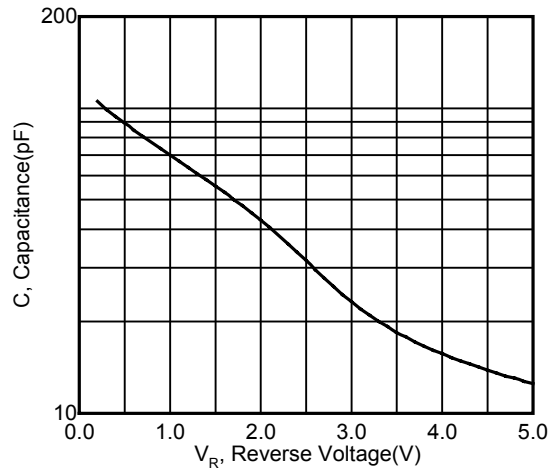
- * Capacitance measured in parallel connections.
容量値は、Back to Back Typeの2つのダイオードの平均値です。
- * Diode Capacitance measured with Agilent 4279A or equivalent instruments (at OSC level $20\pm 5mVrms$)
容量測定器は、Agilent 4279A又は相当品。OSCレベル $20\pm 5mVrms$ 。
- * Resistance meter is Agilent 4291B or equivalent instruments.
直列抵抗測定器は、Agilent 4291B又は相当品。

TYPICAL CHARACTERISTICS

Capacitance versus Reverse Voltage

逆方向電圧対容量

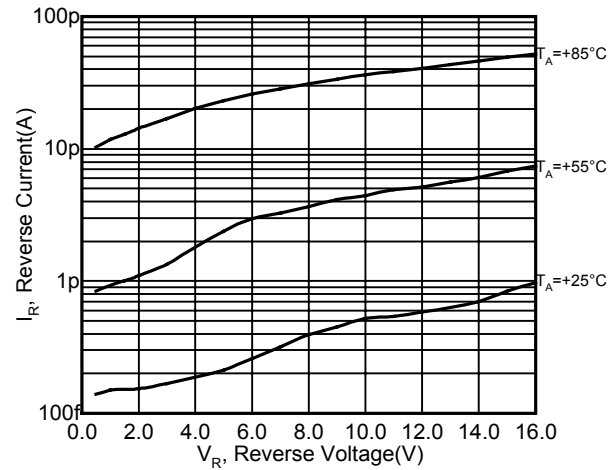
$f=1\text{MHz}$, $T_A=25^\circ\text{C}$



Reverse Current versus Reverse Voltage

逆方向電圧対逆電流

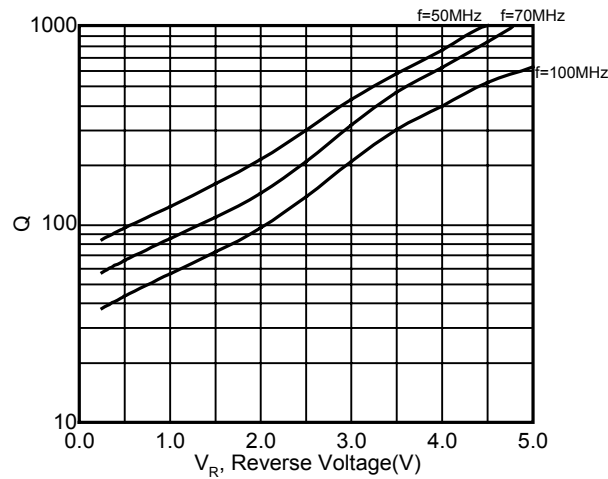
$T_A=+25 / +55 / +85^\circ\text{C}$



Q versus Reverse Voltage

逆方向電圧対Q

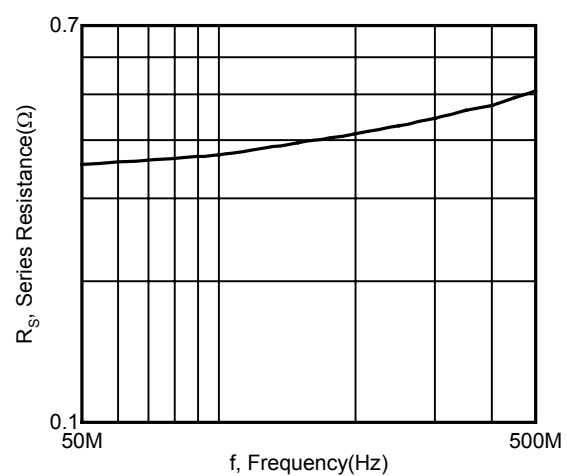
$T_A=25^\circ\text{C}$



Series Resistance versus Frequency

周波数対直列抵抗

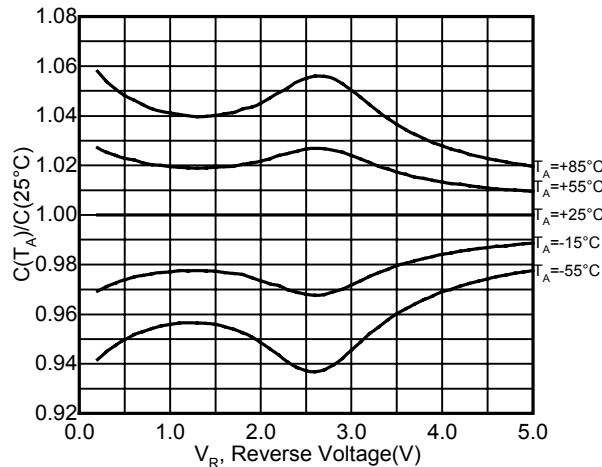
$V_R=1.5\text{V}$, $T_A=25^\circ\text{C}$



$C(T_A)/C(25^\circ\text{C})$ versus Reverse Voltage

逆方向電圧対 $C(T_A)/C(25^\circ\text{C})$

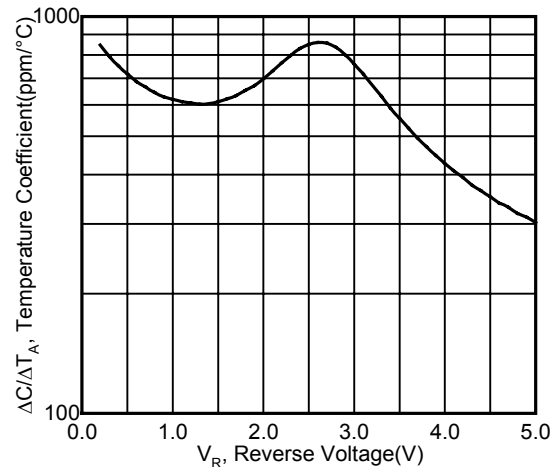
$f=1\text{MHz}$, $T_A=-55$ to $+85^\circ\text{C}$



Capacitance Temperature Coefficient versus Reverse Voltage

逆方向電圧対温度係数

$f=1\text{MHz}$, $T_A=25^\circ\text{C}$



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