

VCR2N, VCR4N, VCR7N**N-CHANNEL SILICON VOLTAGE CONTROLLED RESISTOR JFET**

- **SMALL SIGNAL ATTENUATORS**
- **FILTERS**
- **AMPLIFIER GAIN CONTROL**
- **OSCILLATOR AMPLITUDE CONTROL**

Absolute maximum ratings at $T_A = 25^\circ\text{C}$.

Reverse Gate Source & Reverse Gate Drain Voltage	- 15 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/ $^\circ\text{C}$

At 25 $^\circ\text{C}$ free air temperature:**Static Electrical Characteristics**

		VCR2N		VCR4N		Process	
		NJ72		NJ16		Process	
		Min	Max	Min	Max	Unit	Test Conditions

Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 15		- 15		V	$I_G = -1 \mu\text{A}, V_{DS} = 0 \text{ V}$
Gate Reverse Current	I_{GSS}		- 5		- 0.2	nA	$V_{GS} = -15 \text{ V}, V_{DS} = 0 \text{ V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 1	- 3.5	- 3.5	- 7	V	$I_D = 1 \mu\text{A}, V_{DS} = 10 \text{ V}$

Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$	20	60	200	600	Ω	$V_{GS} = 0 \text{ V}, I_D = 0 \text{ A}$	$f = 1 \text{ kHz}$
Drain Gate Capacitance	C_{dg}		7.5		3	pF	$V_{DG} = 10 \text{ V}, I_S = 0 \text{ A}$	$f = 1 \text{ MHz}$
Source Gate Capacitance	C_{sg}		7.5		3	pF	$V_{DG} = 10 \text{ V}, I_D = 0 \text{ A}$	$f = 1 \text{ MHz}$

		VCR7N		Process	
		NJ01		Process	
		Min	Max	Unit	Test Conditions

At 25 $^\circ\text{C}$ free air temperature:**Static Electrical Characteristics**

Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 15		V	$I_G = -1 \mu\text{A}, V_{DS} = 0 \text{ V}$
Gate Reverse Current	I_{GSS}		- 0.1	nA	$V_{GS} = -15 \text{ V}, V_{DS} = 0 \text{ V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 2.5	- 5	V	$I_D = 1 \mu\text{A}, V_{DS} = 10 \text{ V}$

Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$	4000	8000	Ω	$V_{GS} = 0 \text{ V}, I_D = 0 \text{ A}$	$f = 1 \text{ kHz}$
Drain Gate Capacitance	C_{dg}		1.5	pF	$V_{DG} = 10 \text{ V}, I_S = 0 \text{ A}$	$f = 1 \text{ MHz}$
Source Gate Capacitance	C_{sg}		1.5	pF	$V_{DG} = 10 \text{ V}, I_D = 0 \text{ A}$	$f = 1 \text{ MHz}$

VCR2N & VCR4N**TO-18 Package**

See Section H for Outline Dimensions

Pin Configuration

1 Source, 2 Drain, 3 Gate & Case

VCR7N**TO-72 Package**

See Section H for Outline Dimensions

Pin Configuration

1 Source, 2 Drain, 3 Gate & Case

**InterFET**

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