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°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/°C

At 25°C free air temperature: Static Electrical Characteristics		VCR2N NJ72 Min	VCR2N NJ72 Max	VCR4N NJ16 Min	VCR4N NJ16 Max	Process Unit	Process Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 15		– 15		V	I_G = – 1 µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}		– 5		– 0.2	nA	V_{GS} = – 15V, V_{DS} = ØV	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 1	– 3.5	– 3.5	– 7	V	I_D = – 1 µA, V_{DS} = 10V	
Dynamic Electrical Characteristics								
Drain Source ON Resistance	$r_{ds(on)}$	20	60	200	600	Ω	V_{GS} = ØV, I_D = ØA	f = 1 kHz
Drain Gate Capacitance	C_{dg}		7.5		3	pF	V_{DG} = 10V, I_S = ØA	f = 1 MHz
Source Gate Capacitance	C_{sg}		7.5		3	pF	V_{DG} = 10V, I_D = ØA	f = 1 MHz

At 25°C free air temperature: Static Electrical Characteristics		VCR7N NJ01 Min	VCR7N NJ01 Max	Process Unit	Process Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 15		V	I_G = – 1 µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}		– 0.1	nA	V_{GS} = – 15V, V_{DS} = ØV	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 2.5	– 5	V	I_D = – 1 µA, V_{DS} = 10V	
Dynamic Electrical Characteristics						
Drain Source ON Resistance	$r_{ds(on)}$	4000	8000	Ω	V_{GS} = ØV, I_D = ØA	f = 1 kHz
Drain Gate Capacitance	C_{dg}		1.5	pF	V_{DG} = 10V, I_S = ØA	f = 1 MHz
Source Gate Capacitance	C_{sg}		1.5	pF	V_{DG} = 10V, I_D = ØA	f = 1 MHz

VCR2N & VCR4N
TO-18 Package
See Section G for Outline Dimensions
Pin Configuration
1 Source, 2 Drain, 3 Gate & Case

VCR7N
TO-72 Package
See Section G for Outline Dimensions
Pin Configuration
1 Source, 2 Drain, 3 Gate, 4 Case

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