U350

Hybrid Quad Silicon Junction Field-Effect Transistor Array

- Analog Multiplier
- VHF Double-Balanced Mixer

Absolute maximum ratings at T_A = 25°C.

Reverse Gate Source & Reverse Gate Drain Voltage	– 25 V
Gate Current	25 mA
Continuous Device Power Dissipation	400 mW
Power Derating	3.2 mW/°C

At 25°C free air temperature:		U350			Four Matched Process NJ72L		
Static Electrical Characteristics		**Min**	**Typ**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 25			V	I_G = – 1 µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}			– 1	nA	V_{GS} = – 15V, V_{DS} = ØV	
				– 1	µA	V_{GS} = – 15V, V_{DS} = ØV	T_A = 125°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 2		– 6	V	V_{DS} = 10V, I_D = 1 nA	
Gate Source Forward Voltage	$V_{GS(F)}$			1	V	V_{DS} = ØV, I_G = 1 mA	
Drain Saturation Current (Pulsed)	I_{DSS}	24		60	mA	V_{DS} = 15V, V_{GS} = ØV	
Dynamic Electrical Characteristics							
Drain Source ON Resistance	$r_{ds(on)}$		50	90	Ω	V_{GS} = ØV, I_D = mA	f = 1 kHz
Common Source Forward Transconductance	g_{fs}	10		18	mS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Common Source Output Conductance	g_{os}			150	µS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Drain Gate Capacitance	C_{dgo}			2.5	pF	V_{GD} = – 10V, I_S = ØV	f = 1 MHz
Gate Source Capacitance	C_{sgo}			5	pF	V_{GS} = – 10V, I_D = ØV	f = 1 MHz
(Conversion Gain)	G_c		4		dB	V_{DS} = 20V, V_{GS} = 1/2 $V_{GS(OFF)}$ R_D = 1,700 Ω	f = 100 MHz
Noise Figure	NF		7		dB	V_{DS} = 20V, V_{GS} = 1/2 $V_{GS(OFF)}$ R_D = 1,700 Ω	f = 100 MHz
Saturation Drain Current Ratio	I_{DSS} / I_{DSS}	0.9		1		V_{DS} = 15V, V_{DS} = ØV	
Gate Source Cutoff Voltage Ratio	$V_{GS(OFF)}$ / $V_{GS(OFF)}$	0.9		1		V_{DS} = 15V, I_D = 1 nA	
Common Source Forward Transconductance	g_{fs} / g_{fs}	0.9		1		V_{DS} = 15V, I_D = 10 mA	f = 1 kHz
Differential Output Conductance	Y_{os} / Y_{os}	0.9		1		V_{DS} = 15V, I_D = 10 mA	f = 1 kHz

TO-78 Package
Dimensions in Inches (mm)

Pin Configuration
1 Gate 1 & 3, 2 Drain 1 & 4,
3 Source 1 & 2, 4 Ground & Case,
5 Source 3 & 4, 6 Drain 2 & 3,
7 Gate 2 & 4, 8 Omitted

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