

J108, J109

N-Channel Silicon Junction Field-Effect Transistor

- Choppers
- Commutators
- Analog Switches

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

Reverse Gate Source & Reverse Gate Drain Voltage	- 25 V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	360 mW
Power Derating	3.27 mW/°C

At 25°C free air temperature:

Static Electrical Characteristics

		J108		J109		Unit	Process NJ450	
		Min	Max	Min	Max		Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 25		- 25		V	$I_G = - 1 \mu\text{A}, V_{DS} = \emptyset\text{V}$	
Gate Reverse Current	I_{GSS}		- 3		- 3	nA	$V_{GS} = - 15\text{V}, V_{DS} = \emptyset\text{V}$	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 3	- 10	- 2	- 6	V	$V_{DS} = 5\text{V}, I_D = 1 \mu\text{A}$	
Drain Saturation Current (Pulsed)	I_{DSS}	80		40		mA	$V_{DS} = 15\text{V}, V_{GS} = \emptyset\text{V}$	
Drain Cutoff Current	$I_{D(OFF)}$		3		3	nA	$V_{DS} = 5\text{V}, V_{GS} = - 10\text{V}$	

Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$		8		12	Ω	$V_{GS} = \emptyset, V_{DS} < = 0.1\text{V}$	$f = 1 \text{ kHz}$
Drain Gate Capacitance	C_{gd}		15		15	pF	$V_{DS} = \emptyset\text{V}, V_{GS} = - 10\text{V}$	$f = 1 \text{ MHz}$
Source Gate Capacitance	C_{gs}		15		15	pF	$V_{DS} = \emptyset\text{V}, V_{GS} = - 10\text{V}$	$f = 1 \text{ MHz}$
Drain Gate + Source Gate Capacitance	$C_{gd} + C_{gs}$		85		85	pF	$V_{DS} = V_{GS} = \emptyset\text{V}$	$f = 1 \text{ MHz}$

Switching Characteristics

		Typ		Unit				
		Typ	Typ		J108	J109		
Turn ON Delay Time	$t_{d(on)}$	3	3	ns	V_{DD}	1.5	1.5	V
Rise Time	t_r	1	1	ns	$V_{GS(OFF)}$	- 12	- 7	V
Turn OFF Delay Time	$t_{d(off)}$	4	4	ns	R_L	150	150	Ω
Fall Time	t_f	18	18	ns				

TO-226AA Package

Dimensions in Inches (mm)

Pin Configuration

1 Drain, 2 Source, 3 Gate

Surface Mount

SMPJ108, SMPJ109

