

n-channel JFETs designed for . . .



E108 E109 E110

- Analog Switches
- Choppers
- Commutators
- Low Noise Audio Amplifiers

Performance Curves NIP See Section 4

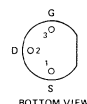
BENEFITS

- Low Insertion Loss
 $R_{DS(on)} < 8 \Omega$ (E108)
- No Offset or Error Voltages Generated by Closed Switch
Purely Resistive
High Isolation Resistance from Driver
- Fast Switching
 $t_{d(on)} + t_r = 5$ ns Typical
- Low Noise
 $\bar{e}_n = 6$ nV/ $\sqrt{\text{Hz}}$ at 10 Hz, Typical (E110)

ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage	-25 V
Gate Current	50 mA
Total Device Dissipation (25°C Free-Air Temperature)	350 mW
Power Derating (to +125°C)	3.5 mW/°C
Storage Temperature Range	-55 to +125°C
Operating Temperature Range	-55 to +125°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

TO-106
See Section 5



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic			E108			E109			E110			Unit	Test Conditions
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
1	S T A T I C	I_{GSS} Gate Reverse Current (Note 1)			-3			-3			-3	nA	$V_{DS} = 0, V_{GS} = -15$ V
2		$V_{GS(off)}$ Gate-Source Cutoff Voltage	-3		-10	-2		-6	-0.5		-4	V	$V_{DS} = 5$ V, $I_D = 1$ μ A
3		BV_{GSS} Gate-Source Breakdown Voltage	-25			-25			-25				$V_{DS} = 0, I_G = -1$ μ A
4	D Y N A M I C	I_{DSS} Saturation Drain Current (Note 2)	80			40			10			mA	$V_{DS} = 15$ V, $V_{GS} = 0$
5		$I_D(off)$ Drain Cutoff Current (Note 1)			3			3			3	nA	$V_{DS} = 5$ V, $V_{GS} = -10$ V
6		$r_{DS(on)}$ Drain-Source ON Resistance			8			12			18	Ω	$V_{DS} \leq 0.1$ V, $V_{GS} = 0$
7	D Y N A M I C	$C_{dg(off)}$ Drain-Gate OFF Capacitance			15			15			15	pF	$V_{DS} = 0, V_{GS} = -10$ V
8		$C_{sg(off)}$ Source-Gate OFF Capacitance			15			15			15	pF	$V_{DS} = 0, V_{GS} = -10$ V
9		$C_{dg(on)} + C_{sg(on)}$ Drain-Gate Plus Source-Gate ON Capacitance			85			85			85	pF	$V_{DS} = V_{GS} = 0$
10	M I C	$t_{d(on)}$ Turn On Delay Time		4			4			4		ns	Switching Time Test Conditions $V_{DD} = 1.5$ V, $E108$ 1.5 V, $E109$ 1.5 V $V_{GS(off)} = -12$ V, $E110$ -7 V, -5 V $R_L = 150 \Omega$, 150Ω , 150Ω
11		t_r Rise Time		1			1			1			
12		$t_{d(off)}$ Turn Off Delay Time		6			6			6			
13		t_f Fall Time		30			30			30			

NOTES:

1. Approximately doubles for every 10°C increase in T_A .
2. Pulse test duration = 300 μ s; duty cycle $\leq 3\%$.

NIP