

n-channel JFETs designed for . . .



Performance Curves NC
See Section 5

BENEFITS

- Low Insertion Loss
High Accuracy in Test Systems
 $R_{ON} < 30 \Omega$ (2N4091)
- High Off-Isolation
 $I_{D(off)} < 200 \text{ pA}$
- High Speed
 $t_{rise} < 10 \text{ ns}$ (2N4091)
- Short Sample and Hold Aperture Time
 $C_{rss} < 5 \text{ pF}$

***ABSOLUTE MAXIMUM RATINGS (25°C)**

Reverse Gate-Drain or Gate-Source Voltage -40 V
 Gate Current 10 mA
 Total Device Dissipation at 25°C Case Temperature
 (Derate 10 mW/°C) 1.8 W
 Storage Temperature Range -55 to +200°C
 Lead Temperature
 (1/16" from case for 60 seconds) 300°C

TO-18
See Section 7



***ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)**

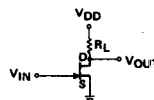
Characteristic	2N4091		2N4092		2N4093		Unit	Test Conditions			
	Min	Max	Min	Max	Min	Max					
1 BV _{GSS} Gate-Source Breakdown Voltage	-40		-40		-40		V	$I_G = -1 \mu\text{A}, V_{DS} = 0$			
2 I _{DGO} Drain Reverse Current		200		200		200	pA	$V_{GS} = -20 \text{ V}, I_S = 0$			
3		400		400		400	nA			150°C	
4 I _{D(off)} Drain Cutoff Current						200	pA	$V_{DS} = 20 \text{ V}$	$V_{GS} = -6 \text{ V}$		
	5					400	nA			150°C	
	6				200					pA	$V_{GS} = -8 \text{ V}$
	7				400					nA	150°C
	8		200							pA	$V_{GS} = -12 \text{ V}$
9		400					nA	150°C			
10 V _{GS(off)} Gate-Source Cutoff Voltage	-5	-10	-2	-7	-1	-5	V	$V_{DS} = 20 \text{ V}, I_D = 1 \text{ nA}$			
11 I _{DSS} Saturation Drain Current (Note 1)	30		15		8		mA	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			
12 V _{DS(on)} Drain-Source ON Voltage				0.2		0.2	V	$V_{GS} = 0$	$I_D = 2.5 \text{ mA}$		
									$I_D = 4 \text{ mA}$		
		0.2							$I_D = 6.6 \text{ mA}$		
13 r _{DS(on)} Static Drain-Source ON Resistance		30		50		80	Ω	$V_{GS} = 0, I_D = 1 \text{ mA}$			
14 r _{ds(on)} Drain-Source ON Resistance		30		50		80	Ω	$V_{GS} = 0, I_D = 0$ f = 1 kHz			
15 C _{iss} Common-Source Input Capacitance		16		16		16	pF	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			
16 C _{rss} Common-Source Reverse Transfer Capacitance		5		5		5		$V_{DS} = 0, V_{GS} = -20 \text{ V}$ f = 1 MHz			
17 t _{d(on)} Turn-ON Delay Time		15		15		20	ns	$V_{DD} = 3 \text{ V}, V_{GS(on)} = 0$			
	18 t _r Rise Time		10		20			40	$I_{D(on)}$	$V_{GS(off)}$	
									2N4091 6.6 mA -12 V 425 Ω	R _L	
19 t _{off} Turn-OFF Time		40		60		80	2N4092 4 -8 700				
							2N4093 2.5 -6 1120				

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*JEDEC registered data.

NOTE:

1. Pulswidth = 300 μs, duty cycle < 3%.



INPUT PULSE
 RISE TIME < 1 ns
 FALL TIME < 1 ns
 PULSE WIDTH 1 μs
 PULSE DUTY CYCLE < 10%
 PULSE GENERATOR IMPEDANCE 50Ω

NC SAMPLING SCOPE
 RISE TIME 0.4 ns
 INPUT RESISTANCE 10 MΩ
 INPUT CAPACITANCE 1.7 pF