

n-channel JFETs designed for . . .



Performance Curves NC
See Section 5

- Analog Switches
- Commutators
- Choppers
- Integrator Reset Switch

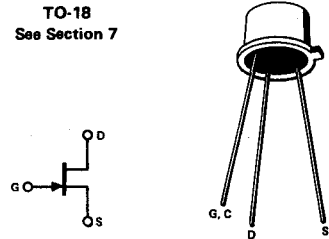
BENEFITS

- Low Insertion Loss and High Accuracy in Test Systems
 $t_{DS(on)} < 25 \Omega$ (2N4856, 59)
- High Off-Isolation
 $I_{D(off)} < 250 \text{ pA}$
- High Speed
 $t_{ON} < 9 \text{ ns}$
- Fully Qualified
JAN, JANTX and JANTXV Available

***ABSOLUTE MAXIMUM RATINGS (25°C)**

Reverse Gate-Drain or Gate-Source Voltage, 2N4856-58	-40 V
Reverse Gate-Drain or Gate-Source Voltage, 2N4859-61	-30 V
Gate Current	50 mA
Total Device Dissipation at 25°C Case Temperature (Derate 10 mW/°C)	1.8 W
Storage Temperature Range	-65 to +200°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

TO-18
See Section 7

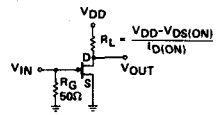


***ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)**

Characteristic	2N4856		2N4857		2N4858		Unit	Test Conditions	
	Min	Max	Min	Max	Min	Max			
1 BV _{GSS} Gate-Source Breakdown Voltage	2N4856-58	-40	2N4857	-40	2N4858	-40	V	$I_G = -1 \mu\text{A}, V_{DS} = 0$	
2	2N4859-61	-30	2N4860	-30	2N4861	-30			
3	I _{GSS} Gate Reverse Current	2N4856-58	-250	-250	-250	-250	pA	$V_{GS} = -20 \text{ V}, V_{DS} = 0$	
4			-500	-500	-500	-500	nA		150°C
5		2N4859-61	-250	-250	-250	-250	pA	$V_{GS} = -15 \text{ V}, V_{DS} = 0$	
6			-500	-500	-500	-500	nA		150°C
7	I _{D(off)} Drain Cutoff Current		250	250	250	250	pA	$V_{DS} = 15 \text{ V}, V_{GS} = -10 \text{ V}$	
8			500	500	500	500	nA		150°C
9	V _{GS(off)} Gate-Source Cutoff Voltage	-4	-10	-2	-6	-0.8	-4	V	$V_{DS} = 15 \text{ V}, I_D = 0.5 \text{ nA}$
10	I _{DSS} Saturation Drain Current (Note 1)	50		20	100	8	80	mA	$V_{DS} = 15 \text{ V}, V_{GS} = 0$
11	V _{DS(on)} Drain-Source ON Voltage		0.75 (20)	0.50 (10)		0.50 (5)		V	$V_{GS} = 0, I_D = ()$
12	r _{ds(on)} Drain-Source ON Resistance		25	40		60		Ω	$V_{GS} = 0, I_D = 0$ f = 1 kHz
13	C _{iss} Common-Source Input Capacitance		18	18		18		pF	$V_{DS} = 0, V_{GS} = -10 \text{ V}$ f = 1 MHz
14	C _{rss} Common-Source Reverse Transfer Capacitance		8	8		8			
15	t _{d(on)} Turn-ON Delay Time		6 (20) [-10]	6 (10) [-6]		10 (5) [-4]		ns (mA) [V]	$V_{DD} = 10 \text{ V}, V_{GS(on)} = 0, I_{D(on)} = (), V_{GS(off)} = []$ $R_L = \begin{cases} 464 \Omega, 2N4856, 59 \\ 953 \Omega, 2N4857, 60 \\ 1910 \Omega, 2N4858, 61 \end{cases}$
16	t _r Rise Time		3 (20) [-10]	4 (10) [-6]		10 (5) [-4]		ns (mA) [V]	
17	t _{off} Turn-OFF Time		25 (20) [-10]	50 (10) [-6]		100 (5) [-4]		ns (mA) [V]	

*JEDEC registered data.

NOTE:
1. Pulse test required, pulsewidth = 100 μs , duty cycle < 10%.



NC

INPUT PULSE
RISE TIME 0.25 ns
FALL TIME 0.75 ns
PULSE WIDTH 100 ns
PULSE DUTY CYCLE < 10%

SAMPLING SCOPE
RISE TIME 0.75 ns
INPUT RESISTANCE 1 M
INPUT CAPACITANCE 2.5 pF