

n-channel JFETs designed for . . .



2N4856A 2N4857A 2N4858A
2N4859A 2N4860A 2N4861A

- Analog Switches
- Commutators
- Choppers
- Integrator Reset Switch

*ABSOLUTE MAXIMUM RATINGS (25°C)

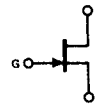
Reverse Gate-Drain or Gate-Source Voltage, 2N4856A-58A	-40 V
Reverse Gate-Drain or Gate-Source Voltage, 2N4859A-61A	-30 V
Gate Current	50 mA
Total Device Dissipation at 25°C Case Temperature (Derate 10 mW/°C)	1.8 W
Storage Temperature Range	-65 to +200°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

Performance Curves NC See Section 5

BENEFITS

- Low Insertion Loss and High Accuracy in Test Systems
 $r_{DS(on)} < 25 \Omega$ (2N4856A, 59A)
- High Off-Isolation
 $I_{D(off)} < 250 \text{ pA}$
- Short Sample and Hold Aperture Time
 $C_{rss} < 4 \text{ pF}$
- High Speed
 $t_{ON} < 8 \text{ ns}$

TO-18
See Section 7



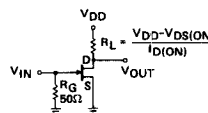
*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic	2N4856A 2N4859A	2N4857A 2N4860A		2N4858A 2N4861A		Unit	Test Conditions		
		Min	Max	Min	Max			Min	Max
1 BV _{GSS} Gate-Source Breakdown Voltage	2N4856A-58A	-40		-40		-40	V	$I_G = -1 \mu\text{A}, V_{DS} = 0$	
2	2N4859A-61A	-30		-30		-30			
5 I _{GSS} Gate Reverse Current	2N4856A-58A		-250		-250		-250	pA	$V_{GS} = -20 \text{ V}, V_{DS} = 0$
			-500		-500		-500	nA	150°C
	2N4859A-61A		-250		-250		-250	pA	$V_{GS} = -15 \text{ V}, V_{DS} = 0$
			-500		-500		-500	nA	150°C
7 I _{D(off)} Drain Cutoff Current			250		250		250	pA	$V_{DS} = 15 \text{ V}, V_{GS} = -10 \text{ V}$
			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 (mA)	$V_{GS} = 0, I_D = ()$
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			10		10		10	pF	$V_{DS} = 0, V_{GS} = -10 \text{ V}$ f = 1 MHz
14 C _{rss} Common-Source Reverse Transfer Capacitance			4		3.5		3.5	pF	
15 t _{d(on)} Turn-ON Delay Time			5 (20) [-10]		6 (10) [-6]		8 (5) [-4]	ns (mA) [V]	$V_{DD} = 10 \text{ V}, V_{GS(on)} = 0, I_{D(on)} = (), V_{GS(off)} = ()$ $R_L = \begin{cases} 464 \Omega, 2N4856A, 59A \\ 953 \Omega, 2N4857A, 60A \\ 1910 \Omega, 2N4858A, 61A \end{cases}$
	16 t _r Rise Time		3 (20) [-10]		4 (10) [-6]		8 (5) [-4]	ns (mA) [V]	
17 t _{off} Turn-OFF Time			20 (20) [-10]		40 (10) [-6]		80 (5) [-4]	ns (mA) [V]	

*JEDEC registered data.

NOTE:

- Pulse test required, pulsewidth = 100 μs , duty cycle $\leq 10\%$.



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

NC

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Siliconix