

2N4856-2N4861 2N4856-2N4858 JAN, JTX, JTXV* N-Channel JFET

FEATURES

- $r_{DS(on)} < 25\Omega$ (2N4856, 2N4859)
- $I_{D(off)} < 250$ pA
- Switches ± 10 V Signals with ± 15 V Supplies (2N4858, 2N4861)

ABSOLUTE MAXIMUM RATINGS

@25°C (unless otherwise noted)

Maximum Temperatures

Storage Temperature TO18	-65°C to +200°C
Operating Junction Temperature TO18	+200°C
Lead Temperature (Soldering, 10 sec time limit)	+300°C

Maximum Power Dissipation

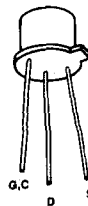
Device Dissipation @ Free Air Temperature	1.8w
Linear Derating TO18	10mW/°C

Maximum Voltages & Current

	2N4856-58	2N4859-61
V_{GS} Gate to Source Voltage	-40 V	-30V
V_{GD} Gate to Drain Voltage	-40 V	-30 V
I_G Gate Current	50 mA	50 mA

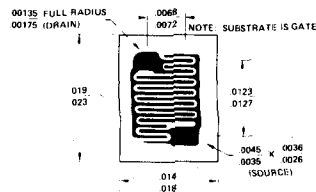
PIN CONFIGURATION

TO-18



CHIP TOPOGRAPHY

5001B



ORDERING INFORMATION

TO-18	WAFER	DICE
2N4856 *	2N4856/W	2N4856/D
2N4857 *	2N4857/W	2N4857/D
2N4858 *	2N4858/W	2N4858/D
2N4859	2N4859/W	2N4859/D
2N4860	2N4860/W	2N4860/D
2N4861	2N4861/W	2N4861/D

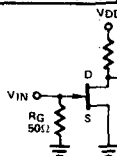
*add JAN, JTX, JTXV, to basic part number to specify these devices.

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

CHARACTERISTIC		2N4856,59		2N4857,60		2N4858,61		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
BV_{GSS}	Gate-Source Breakdown Voltage	2N4856-58	-40	-40	-40			V	$I_G = 1 \mu A, V_{DS} = 0$
		2N4859-61	-30	-30	-30				
I_{GSS}	Gate Reverse Current	2N4856-58	-250	-250	-250			pA	$V_{GS} = -20 V, V_{DS} = 0$
		2N4859-61	-500	-500	-500			nA	$V_{GS} = -15 V, V_{DS} = 0$ 150°C
$I_{D(off)}$	Drain Cutoff Current		250	250	250			pA	$V_{DS} = 15 V, V_{GS} = -10 V$
			500	500	500			nA	150°C
$V_{GS(off)}$	Gate-Source Cutoff Voltage	-4	-10	-2	-6	-0.8	-4	V	$V_{DS} = 15 V, I_D = 0.5 nA$
I_{DSS}	Saturation Drain Current (Note 1)	50		20	100	8	80	mA	$V_{DS} = 15 V, V_{GS} = 0$
$V_{DS(on)}$	Drain-Source ON Voltage		0.75 (20)		0.50 (10)		0.50 (5)	V (mA)	$V_{GS} = 0, I_D = ()$
$r_{DS(on)}$	Drain-Source ON Resistance		25		40		60	ohm	$V_{GS} = 0, I_D = 0$
C_{iss}	Common-Source Input Capacitance		18		18		18	pF	$V_{DS} = 0, V_{GS} = -10 V$ f = 1 kHz
C_{rss}	Common-Source Reverse Transfer Capacitance		8		8		8		f = 1 MHz
t_d	Turn-ON Delay Time		6 (20) [-10]		6 (10) [-6]		10 (5) [-4]	ns (mA) [V]	$V_{DD} = 10 V, R_L = 464 \Omega$ 2N4856,59 953 Ω 2N4857,60 1910 Ω 2N4858,61
t_r	Rise Time		3 (20) [-10]		4 (10) [-6]		10 (5) [-4]	ns (mA) [V]	$V_{GS(on)} = 0$
t_{off}	Turn-OFF Time		25 (20) [-10]		50 (10) [-6]		100 (5) [-4]	ns (mA) [V]	$I_{D(on)} = ()$ $V_{GS(off)} = ()$

NOTE:

1. 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 $\leq 10\%$

SAMPLING SCOPE

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