

N-CHANNEL J-FET

Qualified per MIL-PRF-19500 / 428

Devices

2N4416A

Qualified Level

JAN
JANTX
JANTXV

ABSOLUTE MAXIMUM RATINGS

Parameters / Test Conditions	Symbol	2N4416A	Unit
Gate-Source Voltage	V_{GS}	-35	Vdc
Drain-Source Voltage	V_{DS}	35	Vdc
Drain-Gate Voltage	V_{DG}	35	Vdc
Gate Current	I_G	10	mAdc
Power Dissipation $T_A = +25^{\circ}\text{C}$ ⁽¹⁾	P_T	300	mWdc
Operating Junction & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	$^{\circ}\text{C}$

(1) Derate linearly 1.7 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$.



TO-72*
(TO-206AF)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = +25^{\circ}\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Units
Gate-Source Breakdown Voltage $V_{DS} = 0, I_G = 1.0 \mu\text{Adc}$	$V_{(BR)GSS}$	-35		Vdc
Gate Reverse Current $V_{DS} = 0, V_{GS} = 20 \text{ Vdc}$	I_{GSS}		-0.1	ηAdc
Drain Current $V_{DS} = 15 \text{ Vdc}$	I_{DSS}	5	15	mAdc
Gate-Source Voltage $V_{DS} = 15 \text{ Vdc}, I_D = 0.5 \text{ mAdc}$	V_{GS}	-1	-5.5	Vdc
Gate-Source Cutoff Voltage $V_{DS} = 15 \text{ Vdc}, I_D = 1.0 \eta\text{Adc}$	$V_{GS(off)}$	-2.5	-6.0	Vdc
Gate-Source Forward Voltage $V_{DS} = 0 \text{ Vdc}, I_G = 1.0 \text{ mAdc}$	V_{GSF}		1	Vdc

2N4416A JAN SERIES

ELECTRICAL CHARACTERISTICS ($T_A = +25^{\circ}\text{C}$ unless otherwise noted) (con't)

Parameters / Test Conditions	Symbol	Min.	Max.	Units
Magnitude of Small-Signal Common Source, Short-Circuit Forward Transfer Admittance ⁽²⁾ $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 1.0 \text{ kHz}$	$ y_{fs} ^2$	4.5	7.5	ms
Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{iss}		4.0	pF
Small-Signal, Common-Source Short-Circuit Reverse Transfer Capacitance $V_{DS} = 15 \text{ Vdc}, V_{GS} = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{rss}		0.8	pF
Small-Signal, Common-Source Short-Circuit Output Capacitance $V_{DS} = 15 \text{ Vdc}, V_{GS} = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{oss}		2.0	pF

(2) Pulse Width = 100ms; Duty Cycle = 10%