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Manufacturers of World Class Discrete Semiconductors

2N4856A THRU 2N4861A

N-CHANNEL JFET

JEDEC TO-18 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4856A series types are silicon N-Channel field effect transistors designed for switching applications.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

	SYMBOL	2N4856A	2N4859A	2N4857A	2N4860A	2N4858A	2N4861A	UNIT
Drain-Gate Voltage	V_{DG}	40	30					V
Drain-Source Voltage	V_{DS}	40	30					V
Reverse Gate-Source Voltage	V_{GSR}	40	30					V
Gate Current	I_G		50					mA
Power Dissipation	P_D		360					mW
Operating and Storage								
Junction Temperature	T_J, T_{STG}		-65 to +200					$^\circ\text{C}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_{GSS}	$V_{GS}=\frac{1}{2}$ Rated V_{DS}	-	0.25	nA
I_{GSS}	$V_{GS}=\frac{1}{2}$ Rated V_{DS} , $T_A=150^\circ\text{C}$	-	0.50	μA
I_{DSS}	$V_{DS}=15\text{V}$ (2N4856A, 2N4859A)	50	-	mA
I_{DSS}	$V_{DS}=15\text{V}$ (2N4857A, 2N4860A)	20	100	mA
I_{DSS}	$V_{DS}=15\text{V}$ (2N4858A, 2N4861A)	8.0	80	mA
$I_D(\text{OFF})$	$V_{DS}=15\text{V}$, $V_{GS}=10\text{V}$	-	0.25	nA
$I_D(\text{OFF})$	$V_{DS}=15\text{V}$, $V_{GS}=10\text{V}$, $T_A=150^\circ\text{C}$	-	0.50	μA
BV_{GSS}	$I_G=1.0\mu\text{A}$ (2N4856A, 2N4857A, 2N4858A)	40	-	V
BV_{GSS}	$I_G=1.0\mu\text{A}$ (2N4859A, 2N4860A, 2N4861A)	30	-	V
$V_{DS}(\text{ON})$	$I_D=20\text{mA}$ (2N4856A, 2N4859A)	-	0.75	V
$V_{DS}(\text{ON})$	$I_D=10\text{mA}$ (2N4857A, 2N4860A)	-	0.50	V
$V_{DS}(\text{ON})$	$I_D=5.0\text{mA}$ (2N4858A, 2N4861A)	-	0.50	V
$V_{GS}(\text{OFF})$	$V_{DS}=15\text{V}$, $I_D=0.5\text{nA}$ (2N4856A, 2N4859A)	4.0	10	V
$V_{GS}(\text{OFF})$	$V_{DS}=15\text{V}$, $I_D=0.5\text{nA}$ (2N4857A, 2N4860A)	2.0	6.0	V
$V_{GS}(\text{OFF})$	$V_{DS}=15\text{V}$, $I_D=0.5\text{nA}$ (2N4858A, 2N4861A)	0.8	4.0	V
$r_{ds}(\text{ON})$	$V_{GS}=0$, $I_D=0$, $f=1.0\text{kHz}$ (2N4856A, 2N4859A)	-	25	Ω
$r_{ds}(\text{ON})$	$V_{GS}=0$, $I_D=0$, $f=1.0\text{kHz}$ (2N4857A, 2N4860A)	-	40	Ω
$r_{ds}(\text{ON})$	$V_{GS}=0$, $I_D=0$, $f=1.0\text{kHz}$ (2N4858A, 2N4861A)	-	60	Ω
C_{iss}	$V_{GS}=10\text{V}$, $V_{DS}=0$, $f=1.0\text{MHz}$		10	pF
C_{rss}	$V_{GS}=10\text{V}$, $V_{DS}=0$, $f=1.0\text{MHz}$ (2N4856A, 2N4859A)		4.0	pF
C_{rss}	$V_{GS}=10\text{V}$, $V_{DS}=0$, $f=1.0\text{MHz}$ (2N4857A, 2N4858A, 2N4860A, 2N4861A)		3.5	pF
t_{ON}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=10\text{V}$, $I_D(\text{ON})=20\text{mA}$ (2N4856A, 2N4859A)		9.0	ns
t_{ON}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=6.0\text{V}$, $I_D(\text{ON})=10\text{mA}$ (2N4857A, 2N4860A)		10	ns
t_{ON}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=4.0\text{V}$, $I_D(\text{ON})=5.0\text{mA}$ (2N4858A, 2N4861A)		16	ns
t_{OFF}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=10\text{V}$, $I_D(\text{ON})=20\text{mA}$ (2N4856A, 2N4859A)		20	ns
t_{OFF}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=6.0\text{V}$, $I_D(\text{ON})=10\text{mA}$ (2N4857A, 2N4860A)		40	ns
t_{OFF}	$V_{DD}=10\text{V}$, $V_{GS}(\text{ON})=0$, $V_{GS}(\text{OFF})=4.0\text{V}$, $I_D(\text{ON})=5.0\text{mA}$ (2N4858A, 2N4861A)		80	ns