

# N-Channel JFET

2N4856 2N4856A  
2N4857 2N4857A  
2N4858 2N4858A

**S** SOLID STATE INC.

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## Common Uses

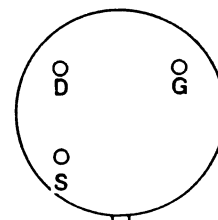
Analog switches  
Choppers  
Commutators

## Absolute Maximum Ratings (25 °C)

Gate-source ..... - 40 V  
Gate-drain ..... - 40 V  
Drain-source ..... ± 40 V  
Gate current ..... 10 mA  
Device dissipation  
(at or below 25 °C free air temperature) ..... 300 mW  
Storage range ..... - 65 ° to + 200 °C

## Features

Low on resistance  
High off resistance  
High speed switch



TO18

Bottom View

## Electrical Characteristics (25 °C unless specified)

DC

Characteristic	Symbol	Test Conditions	2N4856 2N4856A		2N4857 2N4857A		2N4858 2N4858A		Units
			Min	Max	Min	Max	Min	Max	
1. Gate reverse current	$I_{GSS}$	$V_{DS} = 0, V_{GS} = -20 V$		-0.25		-0.25		-0.25	nA
2.			$T_A = 150 °C$		-0.5		-0.5		-0.5
3. Gate-channel breakdown voltage	$BV_{GSS}$	$V_{DS} = 0, I_G = -1 \mu A$	-40		-40		-40		V
4. Gate-source cut off voltage	$V_{GS} (off)$	$V_{DS} = 15 V, I_D = 0.5 nA$	-4	-10	-2	-6	0.8	4	
5. Drain-source on voltage	$V_{DS} (on)$	$V_{GS} = 0$	$I_D = 20 mA$						
6.			$I_D = 10 mA$				0.50		
7.			$I_D = 5 mA$						0.50
8. Saturation drain current (Note 1)	$I_{DSS}$	$V_{DS} = 15 V, V_{GS} = 0$	50		20	100	8	80	mA
9. Drain cut off current	$I_D (off)$	$V_{DS} = 15 V, V_{GS} = -10 V$		0.25		0.25		0.25	nA
10.			$T_A = 150 °C$		0.50		0.50		0.50

AC

Characteristic	Symbol	Test Conditions	2N4856, 7, 8		2N4856A, 7A, 8A		2N4856, 7, 8		2N4856A, 7A, 8A		Units
			Min	Max	Min	Max	Min	Max			
11. Input capacitance	$C_{iss}$	$V_{DS} = 0, V_{GS} = -10 V$	$f = 1 MHz$			18		18		18	pF
12.			$f = 1 MHz$			10		10		10	
13. Feedback capacitance	$C_{rss}$		$f = 1 MHz$			8		8		8	
14.			$f = 1 MHz$			4		3.5		3.5	
15. Drain-source on resistance	$r_{ds} (on)$	$V_{DS} = 0, I_D = 0$		25		40		60	ohms		

Switching

Characteristic	Symbol	Test Conditions	Min	Max	Min	Max	Min	Max	Units
16. Turn-on delay time	$t_d (on)$	$V_{DD} = 10 V, V_{GS} (on) = 0$		5		6		8	ns
17. Rise time	$t_r$	$I_D (on) \quad V_{GS} (off) \quad R_L$		3		4		8	
18. Turn-off time	$t (off)$			20		40		80	

Notes: 1. Pulse test required, pulse width = 300 $\mu s$ , duty cycle  $\leq$  3%.

# N-Channel JFET

FOR

Analog switches  
Chopper  
Commutators

PACKAGES:

TO18

2N4856-61  
2N4856A-61A

## Typical Characteristics (25°C unless otherwise noted)

