

N-Channel JFET

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

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Common Uses

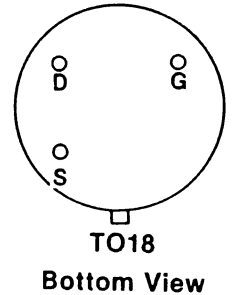
Analog switches
Choppers
Commutators

Features

Low on resistance
High off resistance
High speed switch

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



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	μA
3. Gate-channel break-down 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. Drain-source on voltage			$I_D = 10 mA$				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	μA

AC

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

Switching

					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	2N4856, 6A	$I_D (on)$	$V_{GS (off)}$		3		4		8	
		2N4857, 7A	20 mA	-10 V							
		2N4858, 8A	10 mA	-6 V							
18. Turn-off time	$t (off)$		5 mA	-4 V		20		40		80	

Notes: 1. Pulse test required, pulse width = 300μs, duty cycle < 3%.

N-Channel JFET

FOR

Analog switches
Chopper
Commutators

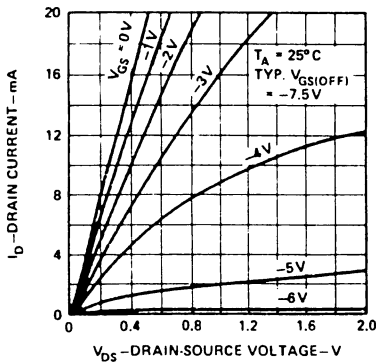
PACKAGES:

TO18

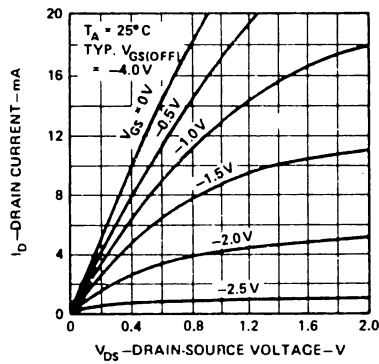
2N4856-61
2N4856A-61A

Typical Characteristics (25°C unless otherwise noted)

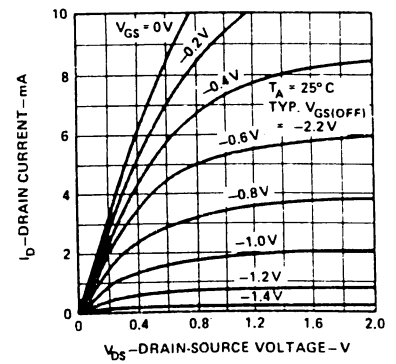
COMMON DRAIN - SOURCE CHARACTERISTICS



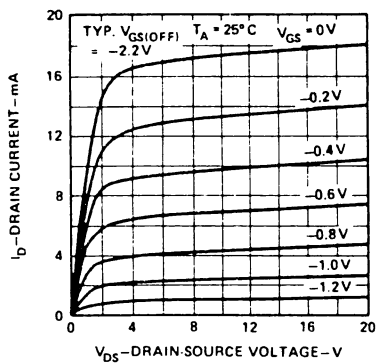
COMMON DRAIN - SOURCE CHARACTERISTICS



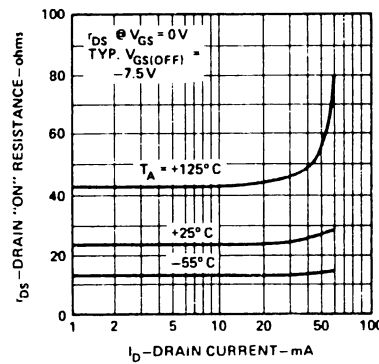
COMMON DRAIN - SOURCE CHARACTERISTICS



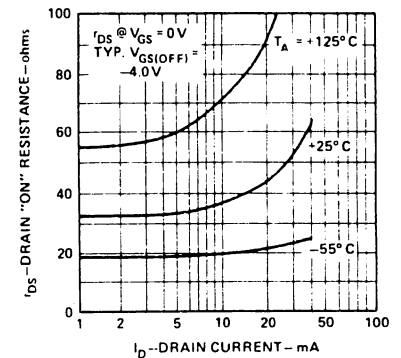
COMMON DRAIN - SOURCE CHARACTERISTICS



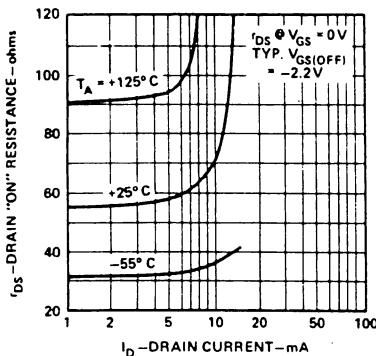
DRAIN - SOURCE "ON" RESISTANCE VS. DRAIN CURRENT



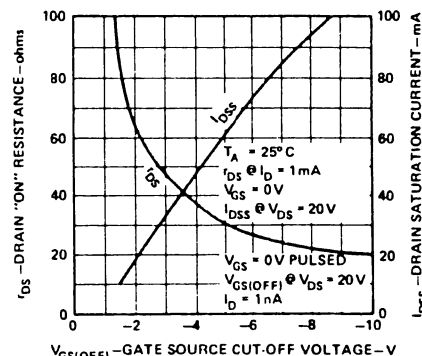
DRAIN - SOURCE "ON" RESISTANCE VS. DRAIN CURRENT



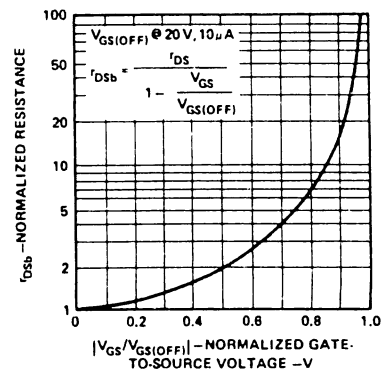
DRAIN - SOURCE "ON" RESISTANCE VS. DRAIN CURRENT



"ON" RESISTANCE/DRAIN CURRENT VS. CUT-OFF VOLTAGE



NORMALIZED DRAIN - SOURCE RESISTANCE VS. GATE - SOURCE VOLTAGE



Packaging Information

TO-18
(3 PIN)

