p-channel JFETs *designed for . . .*

- **Analog Switches**
- **Commutators**
- **Choppers**

Siliconix

Performance Curves PSA/PSB/PSC See Section 4

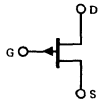
BENEFITS

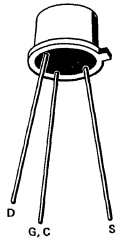
- Low Insertion Loss
  $r_{DS(on)} < 85\ \Omega$ (U304)
- High Off-Isolation
  $I_{D(off)} < 500$ pA

ABSOLUTE MAXIMUM RATINGS (25°C)

Reverse Gate-Drain or Gate-Source Voltage (Note 1) . . 30 V
Gate Current . . . . . 50 mA
Total Device Dissipation, Free-Air
(Derate 2.8 mW/°C) . . . . . 350 mW
Storage Temperature Range . . . . . -65 to +200°C
Lead Temperature
(1/16" from case for 60 seconds) . . . . . 300°C

TO-18
See Section 6





ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

		Characteristic		U304 Min	U304 Max	U305 Min	U305 Max	U306 Min	U306 Max	Unit	Test Conditions	
1	STATIC	I_{GSS}	Gate Reverse Current		500		500		500	pA	V_{GS} = 20 V, V_{DS} = 0	
2					1.0		1.0		1.0	µA		125°C
3		BV_{GSS}	Gate-Source Breakdown Voltage	30		30		30		V	I_G = 1 µA, V_{DS} = 0	
4		$V_{GS(off)}$	Gate-Source Cutoff Voltage	5	10	3	6	1	4		V_{DS} = -15 V, I_D = -1 µA	
5		$V_{DS(on)}$	Drain-Source ON Voltage		-1.3		-0.8		-0.6		V_{GS} = 0, I_D = -15 mA (U304), I_D = -7 mA (U305), I_D = -3 mA (U306)	
6		I_{DSS}	Saturation Drain Current (Note 2)	-30	-90	-15	-60	-5	-25	mA	V_{DS} = -15 V, V_{GS} = 0	
7		$I_{D(off)}$	Drain Cutoff Current		-500		-500		-500	pA	V_{DS} = -15 V, V_{GS} = 12 V (U304), V_{GS} = 7 V (U305), V_{GS} = 5 V (U306)	
8					-1.0		-1.0		-1.0	µA		125°C
9		$r_{DS(on)}$	Static Drain-Source ON Resistance		85		110		175	Ω	V_{GS} = 0 V, I_D = -1 mA	
10	DYN	$r_{ds(on)}$	Drain-Source ON Resistance		85		110		175	Ω	V_{GS} = 0 V, I_D = 0	f = 1 kHz
11		C_{iss}	Common-Source Input Capacitance		27		27		27	pF	V_{DS} = -15 V, V_{GS} = 0	
12		C_{rss}	Common-Source Reverse Transfer Capacitance		7		7		7		V_{DS} = 0, V_{GS} = 12 V (U304) V_{GS} = 7 V (U305), V_{GS} = 5 V (U306)	f = 1 MHz
13	SWITCH	$t_{d(on)}$	Turn-ON Delay Time		20		25		25	ns		
14		t_r	Rise Time		15		25		35			
15		$t_{d(off)}$	Turn-OFF Delay Time		10		15		20			
16		t_f	Fall Time		25		40		60			

	U304	U305	U306
V_{DD}	-10 V	-6 V	-6 V
$V_{GS(off)}$	12 V	7 V	5 V
R_L	580 Ω	743 Ω	1800 Ω
$V_{GS(on)}$	0	0	0
$I_{D(on)}$	-15 mA	-7 mA	-3 mA

NOTES:
1. Due to symmetrical geometry these units may be operated with source and drain leads interchanged.
2. Pulse test pulsewidth = 300 µs, duty cycle ≤ 3%.

PSA/PSB/PSC