

APPLICATIONS

- Analog Switches
- Commutators
- Choppers

FEATURES

- ON Resistance <85 ohms (U304)
- $I_{D(off)}$ <500 pA
- Switches directly from T²L Logic (U306)

ABSOLUTE MAXIMUM RATINGS (25° C)

Reverse Gate-Drain or Gate-Source Voltage (Note 1)	... 30V
Gate Current	... 50 mA
Total Device Dissipation, Free-Air (Derate 2.8 mW/°C)	... 350 mW
Storage Temperature Range	... -65 to +150° C
Lead Temperature (1/16" from case for 60 seconds)	... 300° C

ELECTRICAL CHARACTERISTICS

TEST CONDITIONS: 25° C unless otherwise noted.

PIN CONFIGURATION
TO-18

CHIP TOPOGRAPHY

ORDERING INFORMATION

TO-18	WAFER	DICE
U304	U304/W	U304/D
U305	U305/W	U305/D
U306	U306/W	U306/D

Characteristic	U304		U305		U306		Unit	Test Conditions
	Min	Max	Min	Max	Min	Max		
1 I_{GSS} Gate Reverse Current		500		500		500	pA	$V_{GS} = 20V, V_{DS} = 0$
3 BV_{GSS} Gate-Source Breakdown Voltage	30		30		30		μA	$I_G = 1 \mu A, V_{DS} = 0$
4 $V_{GS(off)}$ Gate-Source Cutoff Voltage	5	10	3	6	1	4	V	$V_{DS} = -15V, I_D = -1 \mu A$
5 $V_{DS(on)}$ Drain-Source ON Voltage		-1.3		-3.8		-0.6		$V_{GS} = 0, I_D = -15mA (U304),$ $I_D = -7mA (U305),$ $I_D = -3mA (U306)$
6 I_{DSS} Saturation Drain Current (Note 2)	-30	-90	-15	-60	-5	-25	mA	$V_{DS} = -15V, V_{GS} = 0$
7 $I_{D(off)}$ Drain Cutoff Current		-500		-500		-500	pA	$V_{DS} = -15V, V_{GS} = 12V (U304),$ $V_{GS} = 7V (U305),$ $V_{GS} = 5V (U306)$
8 $r_{DS(on)}$ Static Drain-Source ON Resistance		85		110		175	Ω	$V_{GS} = 0V, I_D = -1mA$
9 $r_{DS(on)}$ Drain-Source ON Resistance		85		110		175	Ω	$V_{GS} = 0V, I_D = 0$
10 C_{iss} Common-Source Input Capacitance		27		27		27	pF	$V_{DS} = -15V, V_{GS} = 0$
11 C_{rss} Common-Source Reverse Transfer Capacitance		7		7		7	pF	$V_{DS} = 0, V_{GS} = 12V (U304)$
2 C_{rss} Common-Source Reverse Transfer Capacitance		7		7		7	pF	$V_{GS} = 7V (U305),$ $V_{GS} = 5V (U306)$
3 $t_{d(on)}$ Turn-ON Delay Time		20		25		25		U304 U305 U306
4 t_r Rise Time		15		25		35		$V_{DD} -10V -6V -6V$
5 $t_{d(off)}$ Turn-OFF Delay Time		10		15		20		$V_{GS(off)} 12V 7V 5V$
6 t_f Fall Time		25		40		60		$R_L 580\Omega 743\Omega 1800\Omega$
								$V_{GS(on)} 0 0 0$
								$I_{D(on)} -15mA -7mA -3mA$

NOTES:

Due to symmetrical geometry these units may be operated with source and drain leads interchanged.
Pulse test pulsewidth = 300 μ s, duty cycle \leq 3%.