2N3684-2N3687
N-Channel JFET

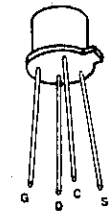
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FEATURES
- **Low Noise**
- **High Input Impedance**
- **Low Capacitance**

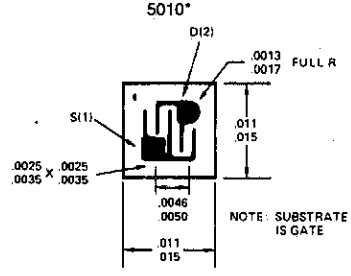
APPLICATIONS
- Low Level Choppers
- Data Switches
- Multiplexers
- Low Noise Amplifiers

PIN CONFIGURATION

TO-72



CHIP TOPOGRAPHY



*DICE WITH 4 MIL BONDING PADS AVAILABLE. CONSULT FACTORY FOR DETAILS.

ORDERING INFORMATION*

TO-72	WAFER	DICE
2N3684	2N3684/W	2N3684/D
2N3685	2N3685/W	2N3685/D
2N3686	2N3686/W	2N3686/D
2N3687	2N3687/W	2N3687/D

*When ordering wafer/dice refer to Appendix B-23.

ABSOLUTE MAXIMUM RATINGS
(T_A = 25°C unless otherwise noted)

Gate-Source or Gate-Drain Voltage ..... -50V
Gate Current ..... 50 mA
Storage Temperature Range ..... -65°C to +200°C
Operating Temperature Range ..... -55°C to +150°C
Lead Temperature (Soldering, 10 sec.) ..... +300°C
Power Dissipation ..... 300 mW
Derate above 25°C ..... 1.7 mW/°C

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER		2N3684		2N3685		2N3686		2N3687		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
BV_{GSS}	Gate to Source Breakdown Voltage	-50		-50		-50		-50		V	V_{DS} = 0, I_G = 1.0 μA
V_P	Pinch-Off Voltage	2.0	5.0	1.0	3.5	0.6	2.0	0.3	1.2		V_{DS} = 20 V, I_D = 0.001 μA
I_{GSS}	Total Gate Leakage Current		-0.1		-0.1		-0.1		-0.1	nA	V_{GS} = -30 V, V_{DS} = 0
	T_A = 150°C		-0.5		-0.5		-0.5		-0.5	μA	
I_{DSS}	Saturation Current, Drain-to-Source	2.5	7.5	1.0	3.0	0.4	1.2	0.1	0.5	mA	V_{GS} = 0, V_{DS} = 20 V
$\|Y_{fs}\|$	Forward Transadmittance	2000	3000	1500	2500	1000	2000	500	1500	μmhos	
G_{os}	Common Source Output Conductance		50		25		10		5	μmhos	V_{DS} = 20 V, V_{GS} = 0, f = 1 kHz
C_{iss}	Common Source Input Capacitance		4.0		4.0		4.0		4.0	pF	
C_{rss}	Common Source Short Circuit Reverse Transfer Capacitance		1.2		1.2		1.2		1.2	pF	
$r_{DS(on)}$	On Resistance		600		800		1200		2400	Ohms	V_{DS} = 0, V_{GS} = 0
NF	Noise Figure		0.5		0.5		0.5		0.5	dB	f = 100 Hz, R_G = 10 MΩ NBW = 6 Hz, V_{DS} = 10V V_{GS} = 0V