

2N5163

N-CHANNEL FIELD EFFECT TRANSISTOR DIFFUSED SILICON PLANAR II TRANSISTOR

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures

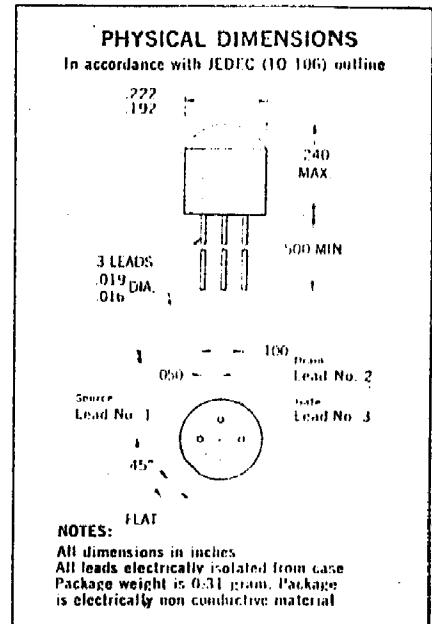
Operating Junction Temperature	125°C
Storage Temperature	-55°C to +125°C
Soldering Temperature (10 second time limit)	260°C

Maximum Power Dissipation

Total Dissipation at 25°C Ambient Temperature (Note 2)	0.2 Watt
--	----------

Maximum Voltages

V _{SG} Source to Gate Voltage	25 Volts
V _{DS} Drain to Source Voltage	25 Volts
V _{DG} Drain to Gate Voltage	25 Volts
I _G Gate Current	50 mA

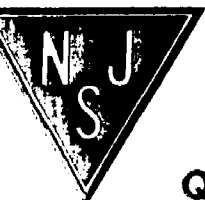


ELECTRICAL CHARACTERISTICS (25°C Free Air Temperature unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Y _{fs}	Forward Transadmittance (f = 1.0 kHz)	2,000	6,000	9,000	μmhos	V _{DS} = 15 V V _{GS} = 0
Re(Y _{fs})	Forward Transconductance (f = 1.0 MHz)	1,800	5,500		μmhos	V _{DS} = 15 V V _{GS} = 0
e _n	Equivalent Input Noise Voltage (f = 1.0 kHz, BW = 150 Hz)		12	50	nV/√Hz	V _{DS} = 15 V I _D = 1.0 mA
NF	Noise Figure (f = 1.0 kHz, R _G = 150 kΩ, BW = 150 Hz)			3.0	dB	V _{DS} = 15 V I _D = 1.0 mA
NF	Noise Figure (f = 1.0 kHz, R _G = 1.0 MΩ, BW = 150 Hz)		<0.1		dB	V _{DS} = 15 V I _D = 1.0 mA
r _{ds(on)}	Drain "On" Resistance (f = 1.0 kHz)		125	500	ohms	V _{GS} = 0 I _D = 0
I _{DSS}	Drain Current	1.0	14	40	mA	V _{DS} = 15 V V _{GS} = 0
V _{GS(off)}	Gate to Source Cutoff Voltage	-0.4	-3.7	-8.0	Volts	V _{DS} = 15 V I _D = 1.0 μA
V _{GS}	Gate to Source Voltage		-3.5	-7.5	Volts	V _{DS} = 15 V I _D = 100 μA
I _{GSS}	Gate Reverse Current		0.1	10	nA	V _{GS} = -15 V V _{DS} = 0
I _{GSS(85°C)}	Gate Reverse Current		0.03	0.6	μA	V _{GS} = -15 V V _{DS} = 0
C _{rss}	Reverse Transfer Capacitance (f = 1.0 MHz)		1.3	3.0	pF	V _{DS} = 15 V V _{GS} = 0
C _{iss}	Input Capacitance (f = 1.0 MHz)		8.7	12	pF	V _{DS} = 15 V V _{GS} = 0
Y _{os}	Output Admittance (f = 1.0 kHz)		60	200	μmhos	V _{DS} = 15 V V _{GS} = 0
BV _{GS}	Gate to Source Breakdown Voltage	-25			Volts	V _{DS} = 0 I _D = 10 μA

NOTES:

- (1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
- (2) These ratings give a maximum junction temperature of 125°C and junction to ambient thermal resistance of 500°C/Watt (derating factor of 2.0 mW/°C).



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors