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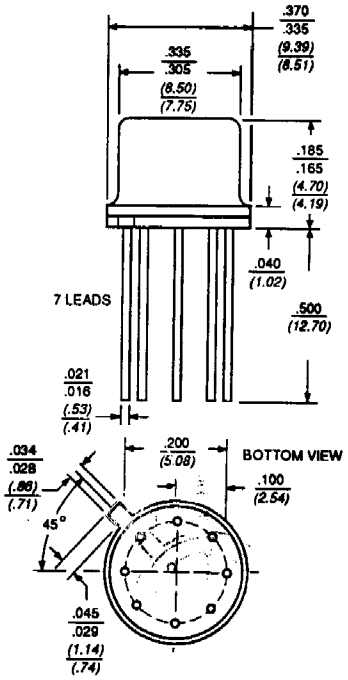
3N165 / 3N166



ABSOLUTE MAXIMUM RATINGS (Note 1)
(T_A = 25°C unless otherwise specified)

Drain-Source or Drain-Gate Voltage (Note 2)
- 3N165 ..... 40V
- 3N166 ..... 30V

Transient Gate-Source Voltage (Note 3) ..... ±125
Gate-Gate Voltage ..... ±80V
Drain Current (Note 2) 50mA
Storage Temperature ..... -65°C to +200°C
Operating Temperature ..... -55°C to +150°C
Lead Temperature (Soldering, 10sec) ..... +300°C
Power Dissipation
- One Side 300mW
- Both Sides 525mW
- Total Derating above 25°C ..... 4.2mW/°C

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS (T_A = 25°C and V_{BS} = 0 unless otherwise specified)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
I_{GSSR}	Gate Reverse Leakage Current		10	pA	V_{GS} = 40V
I_{GSSF}	Gate Forward Leakage Current		-10		V_{GS} = -40V
			-25		T_A = +125°C
I_{DSS}	Drain to Source Leakage Current		-200		V_{DS} = -20V
I_{SDS}	Source to Drain Leakage Current		-400		V_{SD} = -20V, V_{DB} = 0
$I_{D(on)}$	On Drain Current	-5	-30	mA	V_{DS} = -15V, V_{GS} = -10V
$V_{GS(th)}$	Gate Source Threshold Voltage	-2	-5	V	V_{DS} = -15V, I_D = -10µA
$V_{GS(th)}$	Gate Source Threshold Voltage	-2	-5		V_{DS} = V_{GS}, I_D = -10µA
$r_{DS(on)}$	Drain Source ON Resistance		300	ohms	V_{GS} = -20V, I_D = -100µA

ELECTRICAL CHARACTERISTICS (Continued) (T_A = 25°C and V_{BS} = 0 unless otherwise specified)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
g_{fs}	Forward Transconductance	1500	3000	µs	V_{DS} = -15V, I_D = -10mA, f = 1kHz
g_{os}	Output Admittance		300		
C_{iss}	Input Capacitance		3.0	pF	V_{DS} = -15V, I_D = -10mA, f = 1MHz (Note 4)
C_{rss}	Reverse Transfer Capacitance		0.7		
C_{oss}	Output Capacitance		3.0		
$R_E(Y_{fs})$	Common Source Forward Transconductance	1200		µs	V_{DS} = -15V, I_D = -10mA, f = 100MHz (Note 4)

MATCHING CHARACTERISTICS **3N165**

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Y_{fs1} / Y_{fs2}	Forward Transconductance Ratio	0.90	1.0		V_{DS} = -15V, I_D = -500µA, f = 1kHz
V_{GS1-2}	Gate Source Threshold Voltage Differential		100	mV	V_{DS} = -15V, I_D = -500µA
$\frac{\Delta V_{GS1-2}}{\Delta T}$	Gate Source Threshold Voltage Differential Change with Temperature		100	µV/°C	V_{DS} = -15V, I_A = -500µA T_A = -55°C to +25°C

NOTES: 1. See handling precautions.
2. Per transistor.
3. Devices must not be tested at ±125V more than once, nor longer than 300ms.
4. For design reference only, not 100% tested.