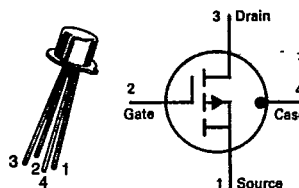


3N155**CASE 20-03, STYLE 2
TO-72 (TO-206AF)****MOSFET
SWITCHING****P-CHANNEL — ENHANCEMENT**

Refer to 3N157 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	± 35	Vdc
Drain-Gate Voltage	V_{DG}	± 50	Vdc
Gate-Source Voltage	V_{GS}	± 50	Vdc
Drain Current	I_D	30	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.0	mW mW/°C
Junction Temperature Range	T_J	-65 to +175	°C
Storage Channel Temperature Range	T_{stg}	-65 to +175	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage ($I_D = -10 \mu\text{A}$, $V_G = V_S = 0$)	$V_{(BR)DSX}$	-35	—	—	Vdc
Zero-Gate-Voltage Drain Current ($V_{DS} = -10 \text{ Vdc}$, $V_{GS} = 0$) ($V_{DS} = -10 \text{ Vdc}$, $V_{GS} = 0$, $T_A = 125^\circ\text{C}$)	I_{DSS}	—	—	-1.0 -1000	nA pA
Gate Reverse Current ($V_{GS} = +50 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = +25 \text{ Vdc}$, $V_{DS} = 0$)	I_{GSS}	—	—	+1000 +10	pA
Resistance Drain Source ($I_D = 0$, $V_{GS} = 0$)	$r_{DS(off)}$	1×10^{10}	—	—	Ohms
Resistance Gate Source Input ($V_{GS} = -25 \text{ Vdc}$)	R_{GS}	—	1×10^{16}	—	Ohms
Gate Forward Leakage Current ($V_{GS} = -50 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = -25 \text{ Vdc}$, $V_{DS} = 0$)	$I_{G(f)}$	—	—	-1000 -10	pA

ON CHARACTERISTICS

Gate Threshold Voltage ($V_{DS} = -10 \text{ Vdc}$, $I_D = -10 \mu\text{A}$)	3N155	$V_{GS(Th)}$	-1.5	—	-3.2	Vdc
Drain-Source On-Voltage ($I_D = -2.0 \text{ mA}$, $V_{GS} = -10 \text{ Vdc}$)		$V_{DS(on)}$	—	—	-1.0	Vdc
Static Drain-Source On Resistance ($I_D = 0 \text{ mA}$, $V_{GS} = -10 \text{ Vdc}$)		$r_{DS(on)}$	—	—	600	Ohms
On-State Drain Current ($V_{DS} = -15 \text{ Vdc}$, $V_{GS} = -10 \text{ Vdc}$)		$I_{D(on)}$	-5.0	—	—	mA

SMALL-SIGNAL CHARACTERISTICS

Drain-Source Resistance ($V_{GS} = -10 \text{ Vdc}$, $I_D = 0$, $f = 1.0 \text{ kHz}$) ($V_{GS} = -15 \text{ Vdc}$, $I_D = 0$, $f = 1.0 \text{ kHz}$)	$r_{ds(on)}$	— —	— —	400 350	Ohms
Forward Transfer Admittance ($V_{DS} = -15 \text{ Vdc}$, $I_D = -2.0 \text{ mA}$, $f = 1.0 \text{ kHz}$)	$ y_{fs} $	1000	—	4000	μmhos
Input Capacitance ($V_{DS} = -15 \text{ Vdc}$, $V_{GS} = -10 \text{ Vdc}$, $f = 140 \text{ kHz}$)	C_{iss}	—	—	5.0	pF
Reverse Transfer Capacitance ($V_{DS} = 0$, $V_{GS} = 0$, $f = 140 \text{ kHz}$)	C_{rss}	—	—	1.3	pF
Drain-Substrate Capacitance ($V_{D(SUB)} = -10 \text{ Vdc}$, $f = 140 \text{ kHz}$)	$C_{d(sub)}$	—	—	4.0	pF

SWITCHING CHARACTERISTICS

Turn-On Delay	$(V_{DD} = -10 \text{ Vdc}$, $I_{D(on)} = -2.0 \text{ mA}$, $V_{GS(on)} = -10 \text{ Vdc}$, $V_{GS(off)} = 0$)	t_d	—	—	45	μs
Rise Time		t_r	—	—	65	ns
Turn-Off Delay		t_s	—	—	60	ns
Fall Time		t_f	—	—	100	ns

MOTOROLA SMALL-SIGNAL TRANSISTORS, FETs AND DIODES