3N155
3N156

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°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

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (I_D = −10 μAdc, V_G = V_S = 0)	$V_{(BR)DSX}$	−35	—	—	Vdc
Zero-Gate-Voltage Drain Current (V_{DS} = −10 Vdc, V_{GS} = 0) (V_{DS} = −10 Vdc, V_{GS} = 0, T_A = 125°C)	I_{DSS}	— —	— —	−1.0 −1000	nAdc
Gate Reverse Current (V_{GS} = +50 Vdc, V_{DS} = 0) (V_{GS} = +25 Vdc, V_{DS} = 0)	I_{GSS}	— —	— —	+1000 +10	pAdc
Resistance Drain Source (I_D = 0, V_{GS} = 0)	$r_{DS(off)}$	$1 \times 10^{+10}$	—	—	Ohms
Resistance Gate Source Input (V_{GS} = −25 Vdc)	R_{GS}	—	$1 \times 10^{+16}$	—	Ohms
Gate Forward Leakage Current (V_{GS} = −50 Vdc, V_{DS} = 0) (V_{GS} = −25 Vdc, V_{DS} = 0)	$I_{G(f)}$	— —	— —	−1000 −10	pAdc
ON CHARACTERISTICS					
Gate Threshold Voltage (V_{DS} = −10 Vdc, I_D = −10 μAdc)	$V_{GS(Th)}$	−1.5	—	−3.2	Vdc
Drain-Source On-Voltage (I_D = −2.0 mAdc, V_{GS} = −10 Vdc)	$V_{DS(on)}$	—	—	−1.0	Vdc
Static Drain-Source On Resistance (I_D = 0 mAdc, V_{GS} = −10 Vdc)	$r_{DS(on)}$	—	—	600	Ohms
On-State Drain Current (V_{DS} = −15 Vdc, V_{GS} = −10 Vdc)	$I_{D(on)}$	−5.0	—	—	mAdc
SMALL-SIGNAL CHARACTERISTICS					
Drain-Source Resistance (V_{GS} = −10 Vdc, I_D = 0, f = 1.0 kHz) (V_{GS} = −15 Vdc, I_D = 0, f = 1.0 kHz)	$r_{ds(on)}$	— —	— —	400 350	Ohms
Forward Transfer Admittance (V_{DS} = −15 Vdc, I_D = −2.0 mAdc, f = 1.0 kHz)	$\|Y_{fs}\|$	1000	—	4000	μmhos
Input Capacitance (V_{DS} = −15 Vdc, V_{GS} = −10 Vdc, f = 140 kHz)	C_{iss}	—	—	5.0	pF
Reverse Transfer Capacitance (V_{DS} = 0, V_{GS} = 0, f = 140 kHz)	C_{rss}	—	—	1.3	pF
Drain-Substrate Capacitance ($V_{D(SUB)}$ = −10 Vdc, f = 140 kHz)	$C_{d(sub)}$	4.0	—	—	pF
SWITCHING CHARACTERISTICS					
Turn-On Delay	t_d	—	—	45	μs
Rise Time	t_r	—	—	65	ns
Turn-Off Delay	t_s	—	—	60	ns
Fall Time	t_f	—	—	100	ns

(V_{DD} = −10 Vdc, $I_{D(on)}$ = −2.0 mAdc, $V_{GS(on)}$ = −10 Vdc, $V_{GS(off)}$ = 0)