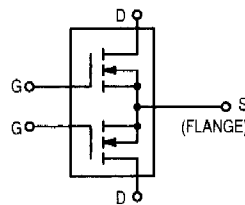
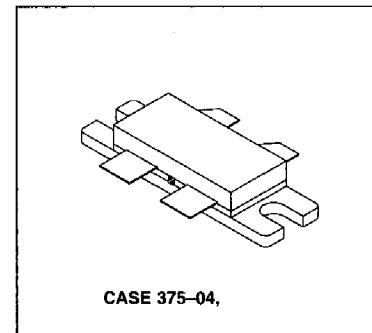
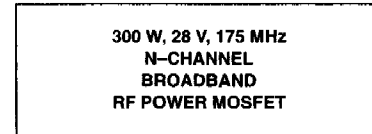


**The RF MOSFET Line**  
**RF Power Field-Effect Transistor**  
**N-Channel Enhancement-Mode MOSFET**

Designed for broadband commercial and military applications at frequencies to 175 MHz. The high power, high gain and broadband performance of this device makes possible solid state transmitters for FM broadcast or TV channel frequency bands.

- Guaranteed Performance at 175 MHz, 28 V:  
 Output Power — 300 W  
 Gain — 12 dB (14 dB Typ)  
 Efficiency — 50%
- Low Thermal Resistance — 0.35°C/W
- Ruggedness Tested at Rated Output Power
- Nitride Passivated Die for Enhanced Reliability



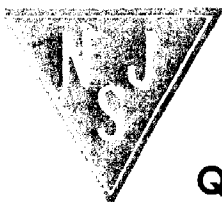
**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	65	Vdc
Drain-Gate Voltage	$V_{DGO}$	65	Vdc
Gate-Source Voltage	$V_{GS}$	±40	Vdc
Drain Current — Continuous	$I_D$	32	Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	$P_D$	500 2.85	Watts W/°C
Storage Temperature Range	$T_{stg}$	-65 to +150	°C
Operating Junction Temperature	$T_J$	200	°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.35	°C/W

NOTE — **CAUTION** — MOS devices are susceptible to damage from electrostatic charge. Reasonable precautions in handling and packaging MOS devices should be observed.



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

Characteristic	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS (1)**

Drain-Source Breakdown Voltage ( $V_{GS} = 0, I_D = 100 \text{ mA}$ )	$V_{(BR)DSS}$	65	—	—	Vdc
Zero Gate Voltage Drain Current ( $V_{DS} = 28 \text{ V}, V_{GS} = 0$ )	$I_{DSS}$	—	—	5.0	mAdc
Gate-Body Leakage Current ( $V_{GS} = 20 \text{ V}, V_{DS} = 0$ )	$I_{GSS}$	—	—	1.0	$\mu\text{Adc}$

**ON CHARACTERISTICS (1)**

Gate Threshold Voltage ( $V_{DS} = 10 \text{ V}, I_D = 100 \text{ mA}$ )	$V_{GS(th)}$	1.0	3.0	5.0	Vdc
Drain-Source On-Voltage ( $V_{GS} = 10 \text{ V}, I_D = 10 \text{ A}$ )	$V_{DS(on)}$	0.1	0.9	1.5	Vdc
Forward Transconductance ( $V_{DS} = 10 \text{ V}, I_D = 5.0 \text{ A}$ )	$g_{fs}$	5.0	7.0	—	mhos

**DYNAMIC CHARACTERISTICS (1)**

Input Capacitance ( $V_{DS} = 28 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$ )	$C_{iss}$	—	350	—	pF
Output Capacitance ( $V_{DS} = 28 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$ )	$C_{oss}$	—	420	—	pF
Reverse Transfer Capacitance ( $V_{DS} = 28 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$ )	$C_{rss}$	—	35	—	pF

**FUNCTIONAL TESTS (2)**

Common Source Amplifier Power Gain ( $V_{DD} = 28 \text{ V}, P_{out} = 300 \text{ W}, I_{DQ} = 500 \text{ mA}, f = 175 \text{ MHz}$ )	$G_{ps}$	12	14	—	dB
Drain Efficiency ( $V_{DD} = 28 \text{ V}, P_{out} = 300 \text{ W}, f = 175 \text{ MHz}, I_D (\text{Max}) = 21.4 \text{ A}$ )	$\eta$	45	55	—	%
Load Mismatch ( $V_{DD} = 28 \text{ V}, P_{out} = 300 \text{ W}, I_{DQ} = 500 \text{ mA}, f = 175 \text{ MHz}, \text{VSWR } 5:1 \text{ at all Phase Angles}$ )	$\psi$	No Degradation in Output Power			

NOTES:

1. Each side measured separately.
2. Measured in push-pull configuration.

