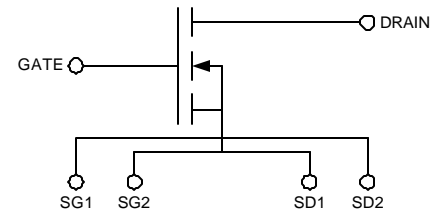


N-Channel Enhancement Mode Linear 175MHz RF MOSFET
 Low Capacitance Z-MOS™ MOSFET Process
 Optimized for Linear Operation
 Ideal for Class AB & C, Broadcast & Communications Applications

$V_{DSS} = 125 \text{ V}$
 $I_{D25} = 15 \text{ A}$
 $R_{DS(on)} = 0.3 \text{ W}$
 $P_{DC} = \text{TBD W}$

PRELIMINARY

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	125	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	125	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_c = 25^\circ\text{C}$	15	A
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	60	A
I_{AR}	$T_c = 25^\circ\text{C}$	16	A
E_{AR}	$T_c = 25^\circ\text{C}$	TBD	mJ
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 300 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 0.2 \Omega$	5	V/ns
	$I_S = 0$	>200	V/ns
P_{DC}			W
P_{DHS}	$T_c = 25^\circ\text{C}$, Derate $6.0 \text{ W}/^\circ\text{C}$ above 25°C	TBD	W
P_{DAMB}	$T_c = 25^\circ\text{C}$	6.0	W



Features

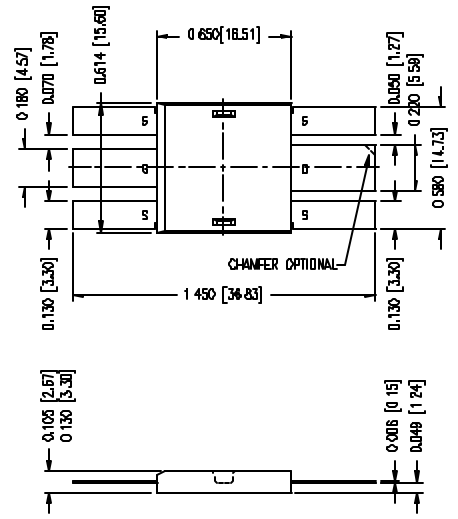
- Isolated Substrate
 - high isolation voltage (>2500V)
 - excellent thermal transfer
 - Increased temperature and power cycling capability
- IXYS RF Low Capacitance Z-MOS Process
- Very low insertion inductance (<2nH)
- No beryllium oxide (BeO) or other hazardous materials

Advantages

- High Performance RF Package
- Easy to mount—no insulators needed

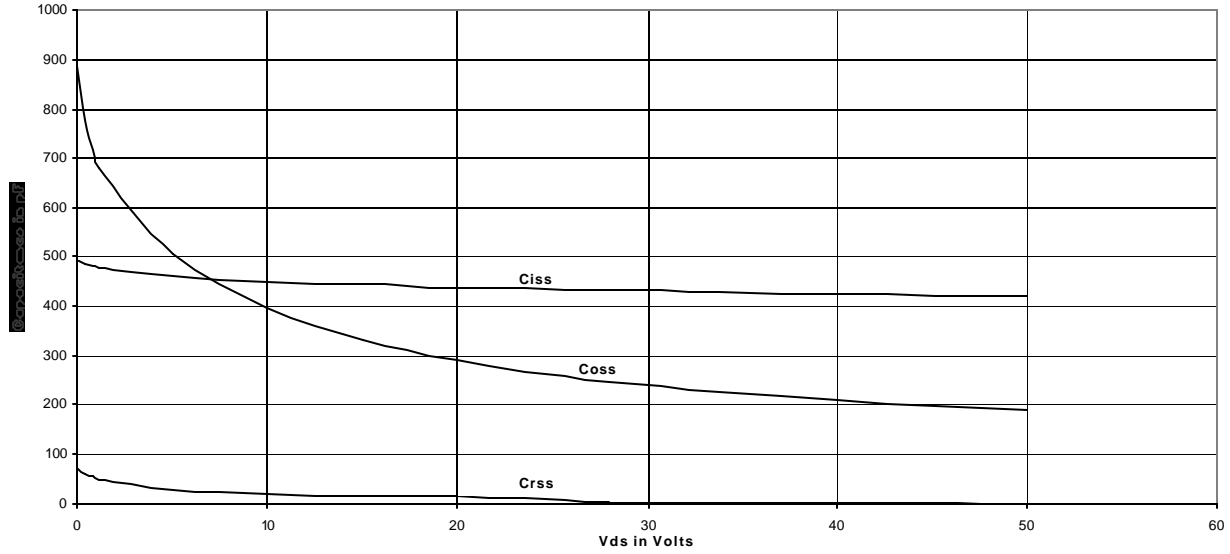
		min.	typ.	max.	
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_b = 4 \text{ ma}$	125			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_b = 250 \mu\text{A}$	3.5		6.5	V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			± 1	μA
I_{DSS}	$V_{DS} = 50$ $T_J = 25^\circ\text{C}$			5	μA
$R_{DS(on)}$	$V_{GS} = 15 \text{ V}$, $I_b = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2\%$		0.30		Ω
g_{fs}	$V_{DS} = 15 \text{ V}$, $I_b = 0.5 I_{D25}$, pulse test		5.4		S
T_J		-55		+175	$^\circ\text{C}$
T_{JM}				+175	$^\circ\text{C}$
T_{stg}		-55		+175	$^\circ\text{C}$
T_L	1.6mm(0.063 in) from case for 10 s		300		$^\circ\text{C}$
Weight			4		g

Symbol	Test Conditions	Characteristic Values		
		(T _j = 25°C unless otherwise specified)		
		min.	typ.	max.
C _{iss}			425	pF
C _{oss}	V _{GS} = 0 V, V _{DS} = 40V, f = 1 MHz		211	pF
C _{rss}			2	pF
C _{stray}	Back Metal to any Pin		21	pF
T _{d(on)}			4	ns
T _{on}	V _{GS} = 15 V, V _{DS} = 0.8 V _{DSS} I _b = 0.5 I _{BM}		3	ns
T _{d(off)}	R _G = 1 Ω (External)		4	ns
T _{off}			5	ns

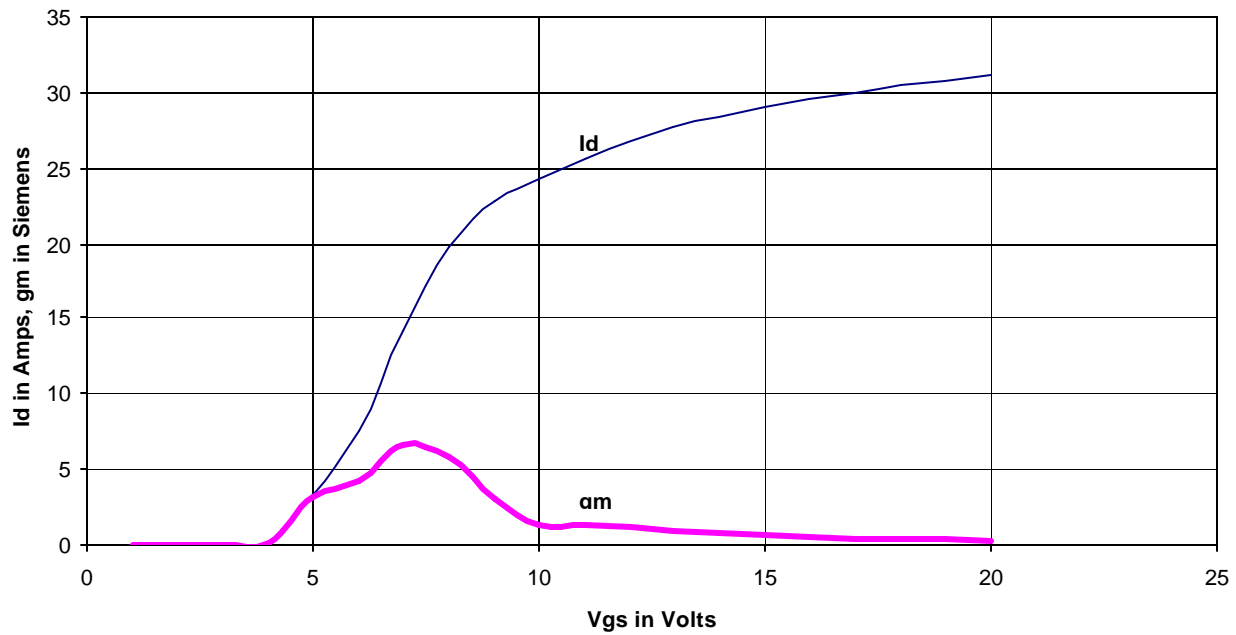


VHF COMMUNICATIONS		min.	typ.	max.
Gps	VDD= 50V, Pout=200W, f=175MHz		12.7	db
Drain Efficiency	VDD= 50V, Pout=200W, f=175MHz	50	60	
Load Mismatch	VDD= 150V, Pout=300W, f=175MHz			5:1

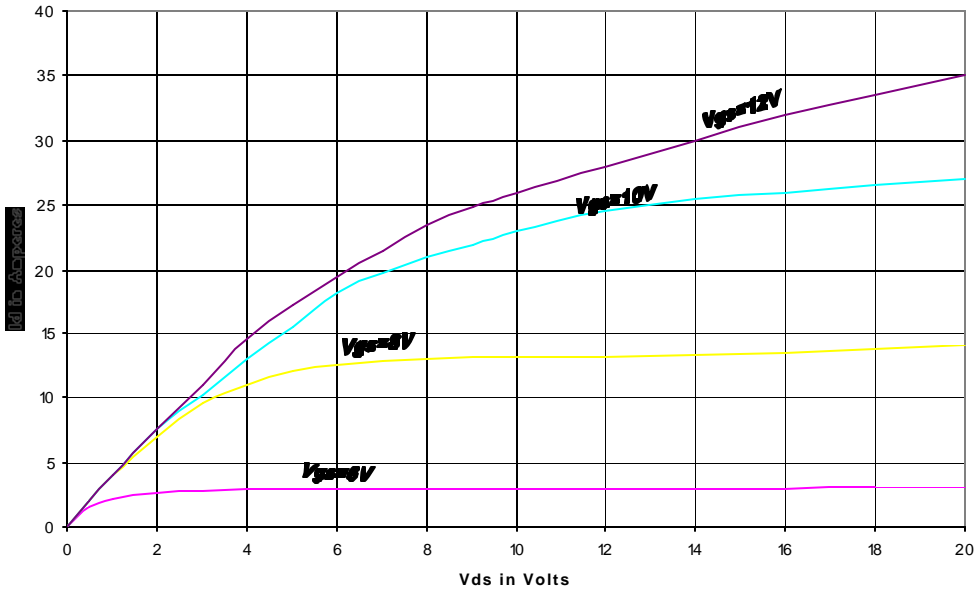
Capacitance vs. Voltage



I_d & g_m verses V_{gs}



Vds Verses Id as a function of Vgs



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An IXYS Company
 2401 Research Blvd., Suite 108
 Fort Collins, CO USA 80526
 970-493-1901 Fax: 970-493-1903
 Email: deiinfo@directedenergy.com
 Web: <http://www.directedenergy.com>