ROHS Compliance, The RF MOSFET Line, Enhancement Mode

HG Semiconductors

VRF141

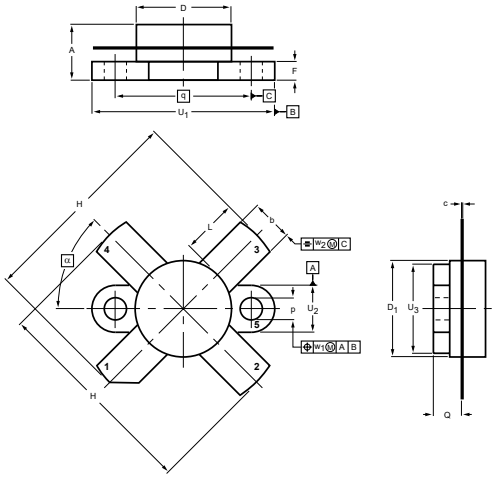
Silicon MOS N-CHANNEL RF POWER TRANSISTOR

DESCRIPTION

Silicon N-channel enhancement mode vertical D-MOS transistor is designed for broadband HF and VHF. The part makes possible solid state transmitters for FM broadcast or TV channelfrequency bands.

FEATURES

- Output Power: 150 W
- Power Gain: 13 dB Typ@175M, 28V
  22 dB Typ@30M, 28V
- Efficiency: 40% Typ@30M, 28V



1.Drain
2.Source
3.Gate
4.Source
5.FIN

DIMENSIONS

NOTE: ALL ELECTRODES ARE ISOLATED FROM FLANCE.

UNIT	A	b	c	D	D_1	F	H	L	p	Q	q	U_1	U_2	U_3	w_1	w_2	α
mm	7.27 6.17	5.82 5.56	0.16 0.10	12.86 12.59	12.83 12.57	2.67 2.41	28.45 25.52	7.93 6.32	3.30 3.05	4.45 3.91	18.42	24.90 24.63	6.48 6.22	12.32 12.06	0.51	1.02	45°
inches	0.286 0.243	0.229 0.219	0.006 0.004	0.506 0.496	0.505 0.495	0.105 0.095	1.120 1.005	0.312 0.249	0.130 0.120	0.175 0.154	0.725	0.98 0.97	0.255 0.245	0.485 0.475	0.02	0.04	

MAXIMUM RATINGS

CHARACTERISTICS	SYMBOL	RATINGS	UNITS
Drain–Source Voltage	V_{DSS}	65	V
Drain–Gate Voltage	V_{DGR}	65	V
Gate–Source Voltage	V_{GS}	±40	V
Drain Current — Continuous	I_D	16	A
Total Device Dissipation	P_D	300	W
Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=100mA,V_{GS}=0	65	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V,V_{DS}=28V	-	-	5	mAdc
Gate–Source Leakage Current	I_{GSS}	V_{GS}=20V,V_{DS}=0V	-	-	1	uAdc
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = 10 V, I_D = 100mA	1.0	3.0	5.0	V
Forward Transconductance	gfs	V_{DS} = 10 V, I_D = 5A	5	7	-	mhos
Input Capacitance	Ciss	V_{DS} = 28 V,V_{GS} = 0 V, f = 1.0 MHz	-	450	-	pF
Output Capacitance	Coss		-	320	-	pF
Reverse Transfer Capacitance	Crss		-	35	-	pF
Common Source Power Gain	G_{PS}	V_{DD}=28V,P_{OUT}=150W, f=30; 30.001MHz,I_{DQ} = 250 mA	16.0	20.0	-	dB
Drain Efficiency	η_D		40.0	45.0	-	%
Common Source Power Gain	G_{PS}	V_{DD}=28V,P_{OUT}=150W, f=175MHz,I_{DQ} = 250mA	-	10.0	-	dB
Intermodulation Distortion	IMD3	V_{DD} = 28 V, Pout = 150 W (PEP),f1 = 30 MHz, f2 = 30.001 MHz, I_{DQ} = 250 mA	-	-30	-	dB

Note : Above parameters , ratings , limits and conditions are subject to change.