

DESCRIPTION

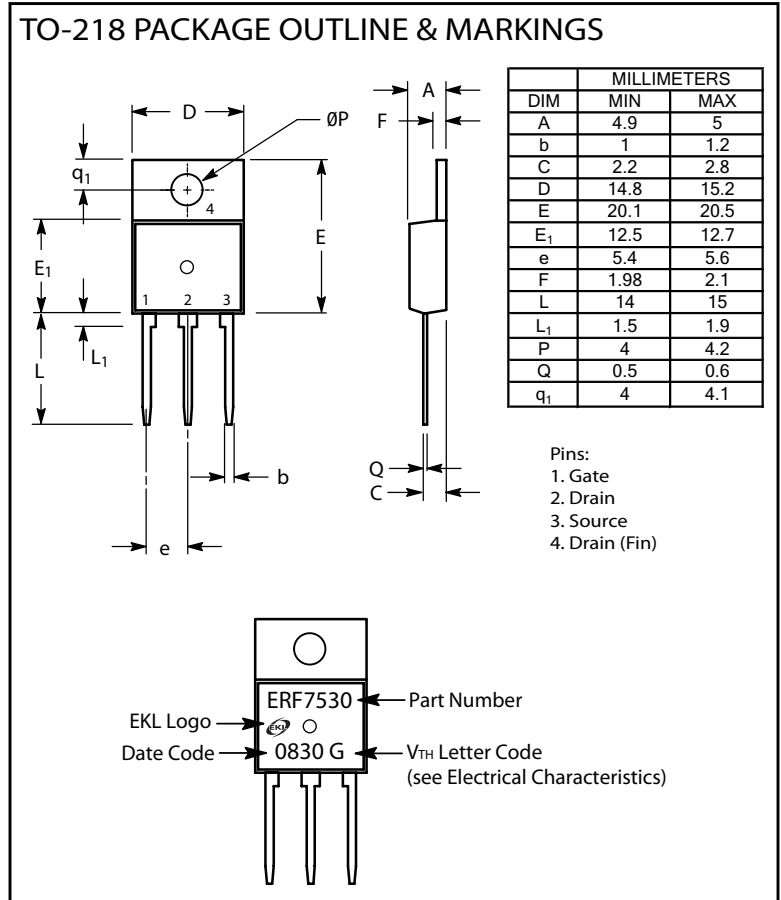
The ERF7530 is a MOSFET transistor developed for RF power amplifier applications in the HF frequency range. High power in a TO-218 package for an excellent 'watt per dollar' value.

FEATURES

- High Power and Economical:
 $P_{out} > 20W$ (75W PEP)
 $G_p > 10dB$ @ 12.5V, $f=30MHz$
- V_{TH} Sorted in 0.2V Steps for Easy Matching of Parts in Push-Pull and Parallel Designs

APPLICATION

Final amplification stages in mobile HF transceivers and amplifiers.



ABSOLUTE MAXIMUM RATINGS

(T_c=25°C UNLESS OTHERWISE SPECIFIED)

SYMBOL	PARAMETER	CONDITIONS	RATINGS	UNIT
V _{DSS}	Drain to source voltage	V _{gs} = 0V	50	V
V _{GSS}	Gate to source voltage	V _{ds} = 0V	+/- 20	V
P _{ch}	Channel dissipation	T _c =25°C	120	W
I _D	Drain current		15	A
T _{ch}	Channel temperature		150	°C
T _{stg}	Storage temperature		-40 to +150	°C
R _{th j-c}	Thermal resistance	junction to case	1.2	°C/W

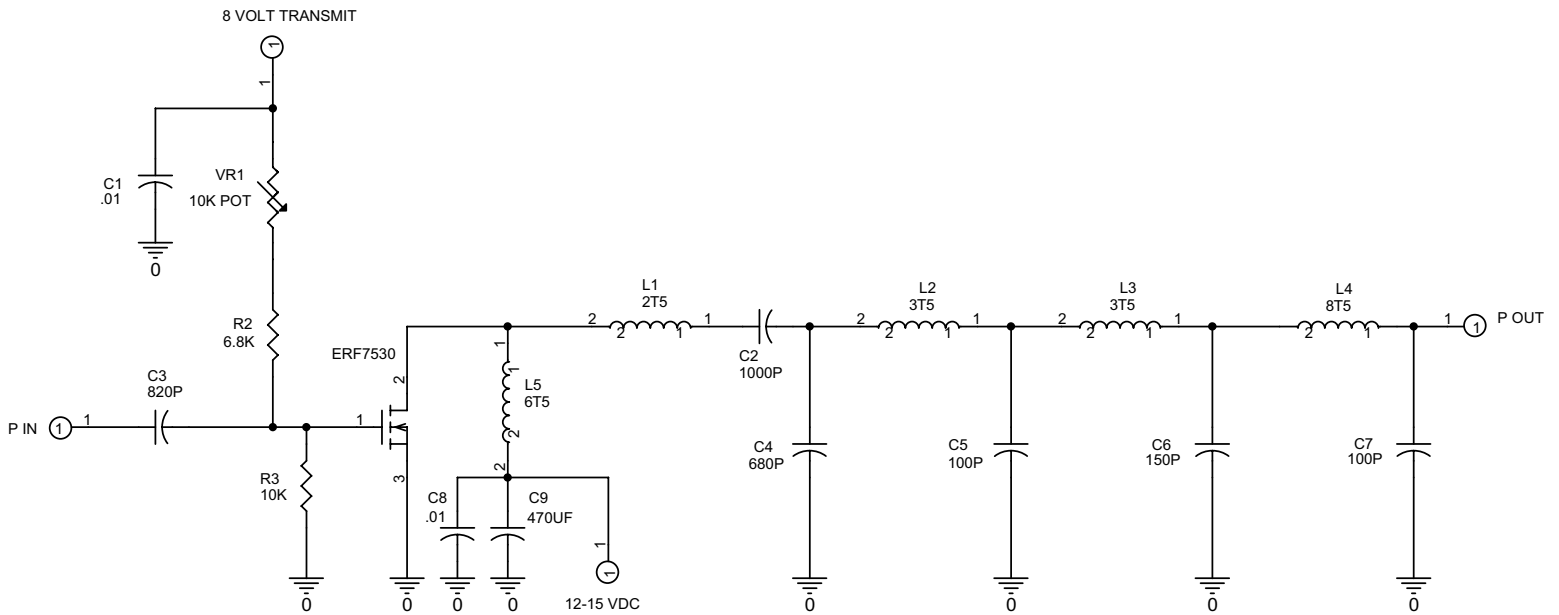
ELECTRICAL CHARACTERISTICS

(T_c=25°C UNLESS OTHERWISE SPECIFIED)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I _{DSS}	Zero gate voltage drain current	V _{DS} = 50V, V _{GS} = 0V	-	-	500	μA
V _{TH}	Gate threshold voltage	V _{DS} = 12V, I _{DS} = 250μA	2	-	4	V
	ERF7530A		2.000	-	2.199	V
	ERF7530B		2.200	-	2.399	V
	ERF7530C		2.400	-	2.599	V
	ERF7530D		2.600	-	2.799	V
	ERF7530E		2.800	-	2.999	V
	ERF7530F		3.000	-	3.199	V
	ERF7530G		3.200	-	3.399	V
	ERF7530H		3.400	-	3.599	V
	ERF7530I		3.600	-	3.799	V
ERF7530J	3.800	-	4.000	V		
P _{out}	Output Power	V _{DD} = 12.5V, P _{in} =7.5W f=30MHz	75	90		W

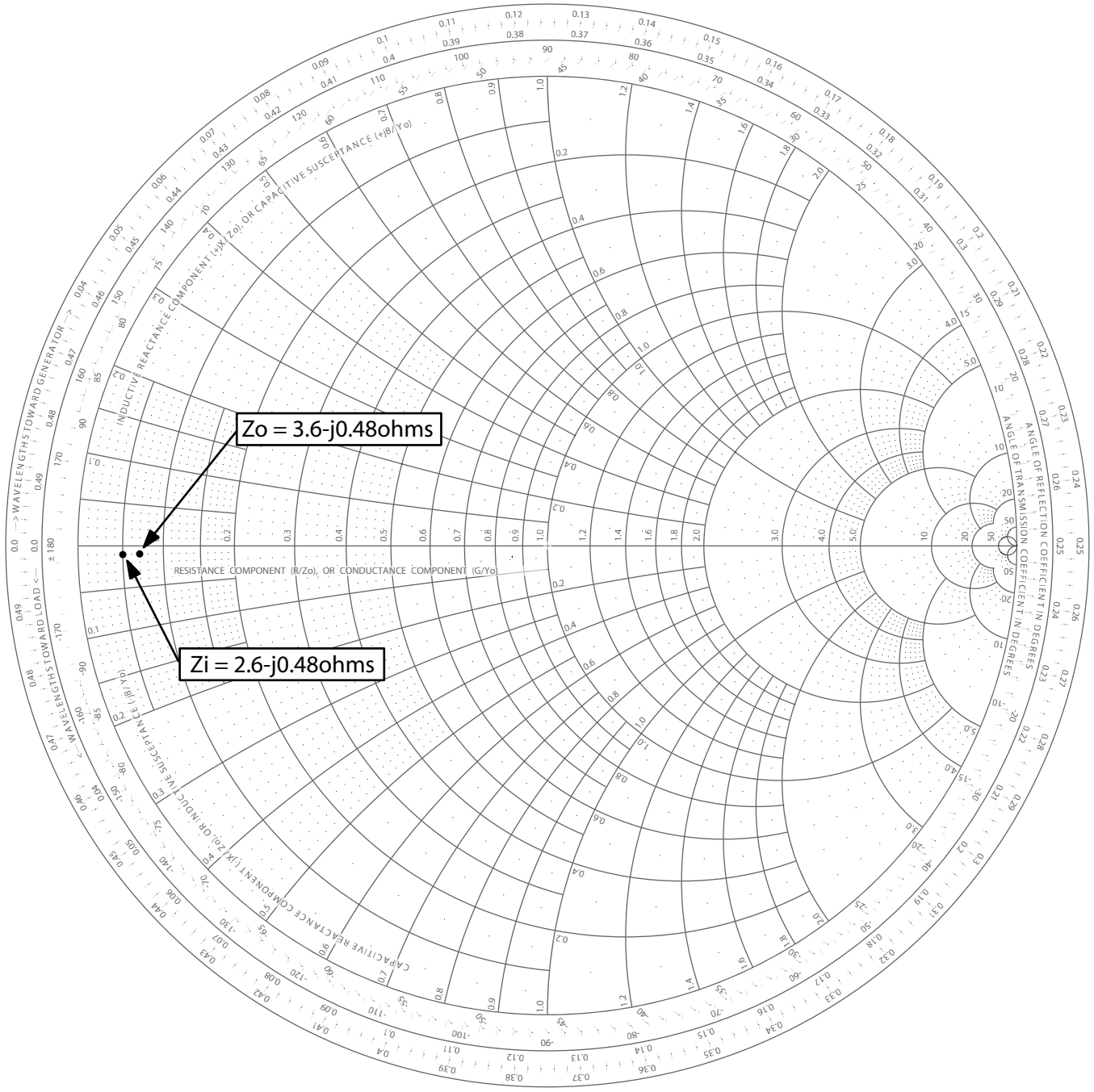
NOTE: Above parameters, specifications, ratings, limits and conditions are subject to change.

TEST CIRCUIT (f=30MHz)



INPUT / OUTPUT IMPEDANCE VS. FREQUENCY CHARACTERISTICS

f = 30MHz, Vds = 12V, Id = 0.5A



S-PARAMETER DATA (@Vdd=12.5V, Id=500mA)

FREQ. (MHz)	S11		S21		S12		S22	
	(mag)	(angle)	(mag)	(angle)	(mag)	(angle)	(mag)	(angle)
10	0.8558	-178.5206	3.3926	82.5906	0.0398	51.656	0.8172	-175.4808
15.4	0.85	-178.7039	2.2221	79.1456	0.0548	60.8473	0.8168	-176.0968
20.8	0.8459	-179.1359	1.6698	75.5818	0.0709	64.7333	0.8153	-176.3149
25.3	0.8432	-179.2576	1.3846	72.891	0.0847	66.8258	0.8161	-176.1127
30.7	0.8562	-178.4354	1.159	70.4095	0.0973	69.9854	0.8221	-176.1409
35.2	0.8598	-178.7634	1.0264	68.2264	0.1122	71.2546	0.8229	-175.7806
40.6	0.8592	-178.9764	0.9111	65.442	0.1277	71.5434	0.8267	-175.6365
45.1	0.8571	-179.0534	0.8292	63.2822	0.1413	71.9191	0.828	-175.3323
50.5	0.8562	-179.4405	0.7613	60.7759	0.1578	72.0172	0.8303	-175.1716
55	0.8571	-179.5267	0.7101	58.9704	0.1704	71.8344	0.8323	-174.9387
60.4	0.8489	179.8435	0.6594	56.8556	0.1862	71.3587	0.8363	-174.5682
65.8	0.8417	179.0236	0.6152	54.9493	0.1986	70.8188	0.8402	-174.5976
70.3	0.7568	-179.6396	0.5583	54.6786	0.2016	71.9517	0.8414	-174.7352
75.7	0.8516	-177.5559	0.5666	54.5807	0.2288	72.0652	0.8384	-174.448
80.2	0.8537	-177.8571	0.5512	53.8863	0.243	72.1885	0.8373	-174.3858
85.6	0.8769	-179.4935	0.543	51.824	0.2631	70.3354	0.8375	-173.64
90.1	0.8678	178.5492	0.5062	49.5482	0.2651	68.4448	0.8467	-173.3934
95.5	0.8467	176.5781	0.4957	50.3177	0.2782	69.5116	0.8468	-173.7852
100	0.8267	177.0862	0.4816	50.6054	0.2869	69.9825	0.8468	-173.7515

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WARNING

Semiconductor failure may cause personal injury, fire and/or property damage. Do not exceed the maximum rating conditions of this device in any design. As with all plastic molded devices, exceeding the maximum ratings of the device may cause the package to fail which may lead to an explosion and/or fire. Take all precautions and consider all safety issues when designing your circuits.

EKL Components
PO Box 1997
Gig Harbor WA 98335

Tel: 425-818-5142
Fax: 425-484-2400
Email: info@EKLComponents.com

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