UHF RF Power Transistor

The J-Zero 3055 is designed for UHF broadband applications covering the 450-512MHz frquency band. Designed for land mobile radio systems, it provides excellent gain and is extremely rugged.

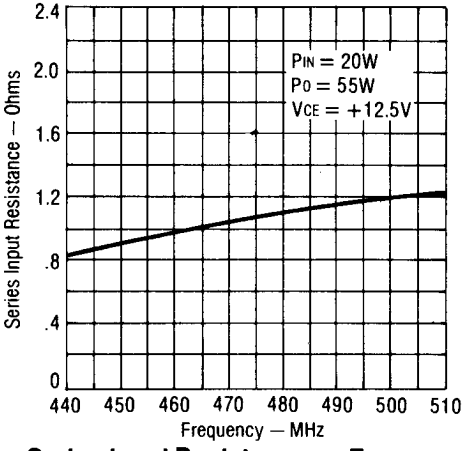
55 Watt
450-512MHz
12.5V

0.5 J-Zero Package

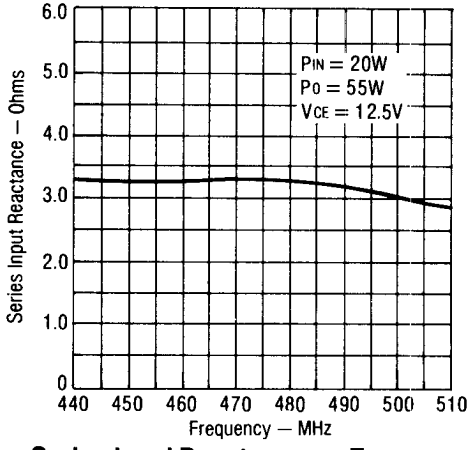
Electrical Characteristics (T_{CASE} = 25°C)

	SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DC TEST	BV_{CBO}	Collector Base Voltage	I_C = 50mA	36			V
	BV_{CEO}	Collector Emitter Voltage	I_C = 50mA	16			V
	I_{CES}	Collector Emitter Leakage	V_{CE} = 12.5V			20	mA
	BV_{EBO}	Emitter Base Voltage	I_E = 5mA, I_C = 0	4			V
	h_{FE}	D.C. Current Gain	V_{CE} = 5V, I_C = 1A	20	70	120	
RF TEST	P_{OUT}	Power Output	V_{CE} = 12.5V, f = 470MHz P_{IN} = 20W	55			W
	VSWR	Collector Load *Phase angle s varied > 360° during 3-second test	V_{CE} = 15.5V, f = 470MHz P_{IN} = 20W	∞:1			
	η	Collector Efficiency	At P_O = 55W		60		%
DPER.	θ_{j-C}	Thermal Resistance	25°C Case		1.75		°C/W
	$T_{J(MAX)}$	Maximum Junction Temperature				200	°C
	T_{STG}	Storage Temperature		-55		150	°C
	$I_{C(MAX)}$	Maximum Collector Current	T_C = 25°C			8	A
	$P_{D(MAX)}$	Total Dissipation	T_C = 25°C			100	W

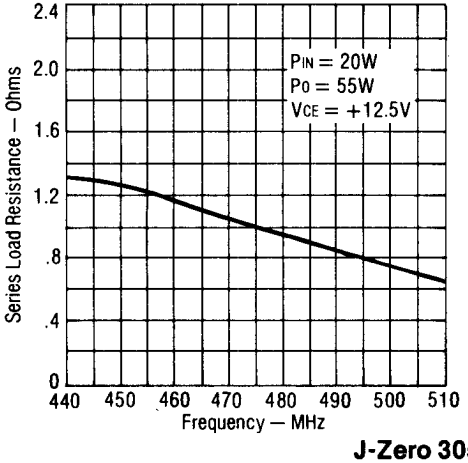
Series Input Resistance vs Frequency



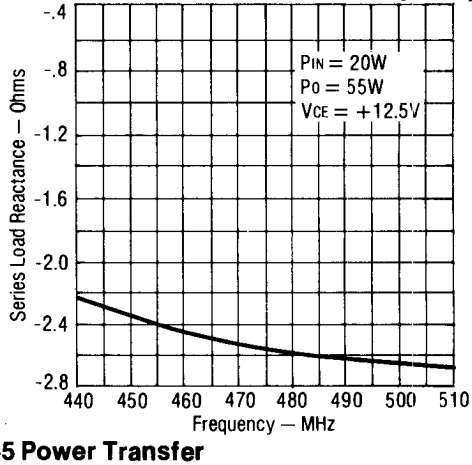
Series Input Reactance vs Frequency



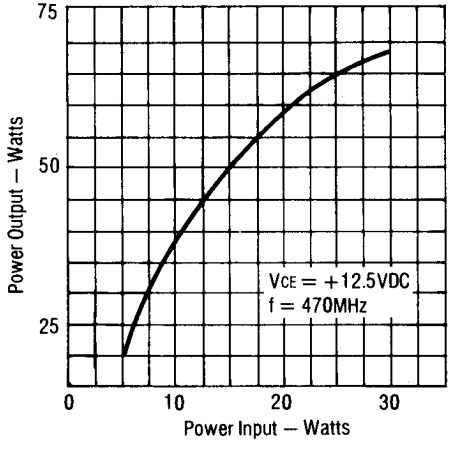
Series Load Resistance vs Frequency



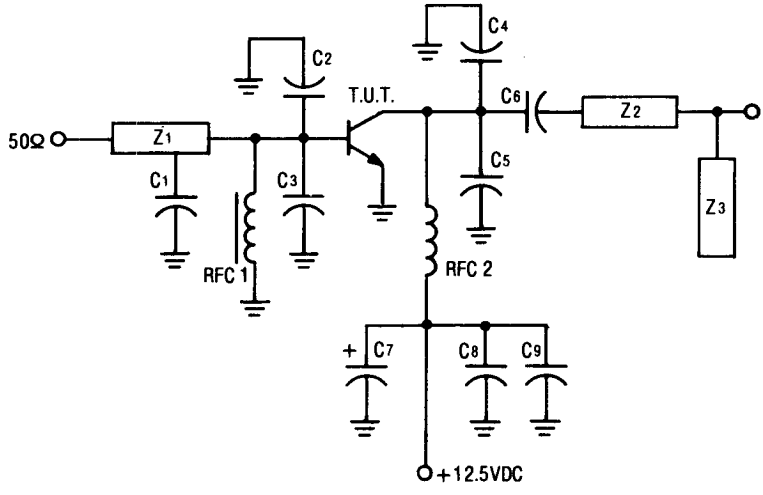
Series Load Reactance vs Frequency



J-Zero 3055 Power Transfer



TEST CIRCUIT



PARTS LIST:

C_1	1-10pf piston trimmer located 1.0" from device end on Z_1.
$C_{2,3,4,5}$	33pf uncased mica capacitor.
C_6	39pf uncased mica capacitor.
C_7	5μf @ 25 volts.
C_8	220pf uncased mica capacitor.
C_9	0.1μfD @ 50 volts disc ceramic.
RFC 1	VK200 choke
RFC 2	5 T. #18 AWG., 1/4" dia., 1/2" long.
Z_1	Microstripline, Z_0 = 45 ohms, W = 0.15", L = 2.05".
Z_2	Microstripline, Z_0 = 22 ohms, W = 0.425", L = 3.2".
Z_3	Microstripline Capacitor, Z_0 = 28 ohms, W = 0.25", L = 0.55".

Board material — 1/16" epoxy-glass.