DME 375A

375 WATTS - 50 VOLTS 1025/1150 MHz

AVIONICS

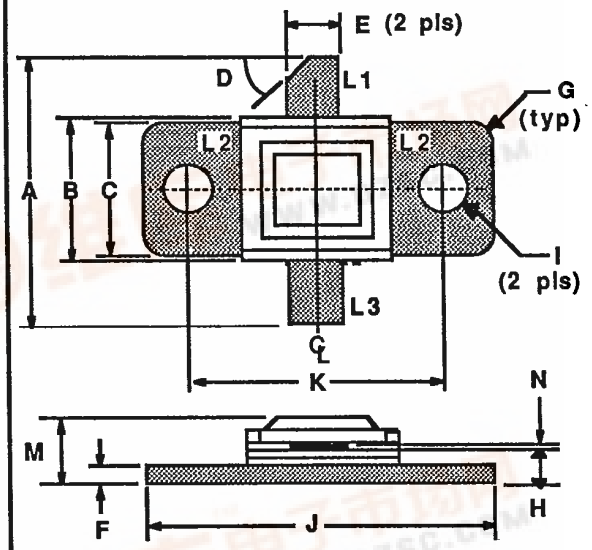
GENERAL DESCRIPTION

This device utilizes the most advanced design and process technologies. These features provide the most consistent and reliable chip and package combination designed, built and tested specifically for use in airborne DME.

- Gold thin-film metallization -- proven highest Mean Time to Failure.
- Surface passivation -- eliminates contamination and extends life.
- Eutectic die attach -- reduces junction temperature and extends MTTF.
- Gold controlled-loop wire bonding -- consistent RF performance.
- Hermetically sealed low thermal-resistance packages -- reduce junction temperature and extend life.

ABSOLUTE MAXIMUM RATINGS

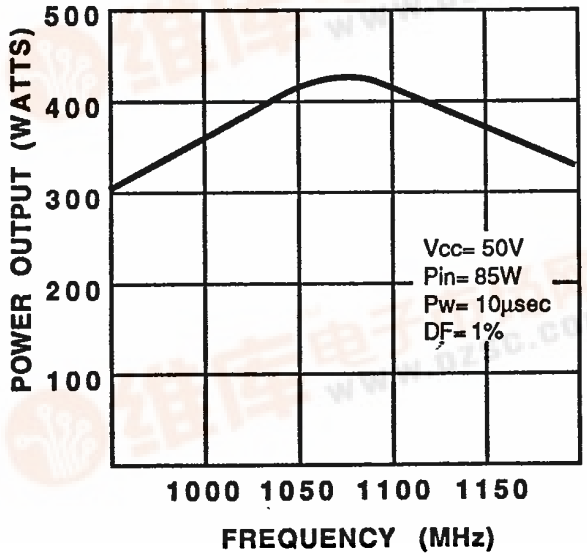
Maximum Power Dissipation @ 25°C Case Temperature		875W
Maximum Voltage and Current		
BVces	Collector to Emitter Voltage	55 V
BVebo	Emitter to Base Voltage	4.0 V
Ic	Collector Current	30 A
Maximum Temperatures		
Storage Temperature		-65 to +200 °C
Operating JunctionTemperature		+200 °C



L1 : c
L2 : b
L3 : e

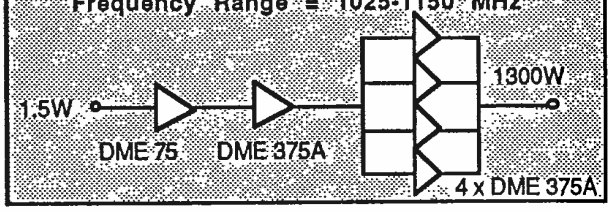
DIM	Millimeter	TOL	Inches	TOL
A	20.32	.76	.800	.030
B	10.16	.13	.400	.005
C	9.78	.13	.385	.005
D	45°	5°	45°	5°
E	3.81	.13	.150	.005
F	1.52	.13	.060	.005
G	1.52 R	.13	.060 R	.005
H	3.05	.13	.120	.005
I	3.30DIA	.13	.130 DIA	.005
J	22.86	.13	.900	.005
K	16.51	.13	.650	.005
M	5.46	REF	.215	REF
N	0.13	.02	.005	.001

(TYPICAL) POWER OUTPUT



TYPICAL AMPLIFIER LINE UP

Vcc = 50Volts
Frequency Range = 1025-1150 MHz



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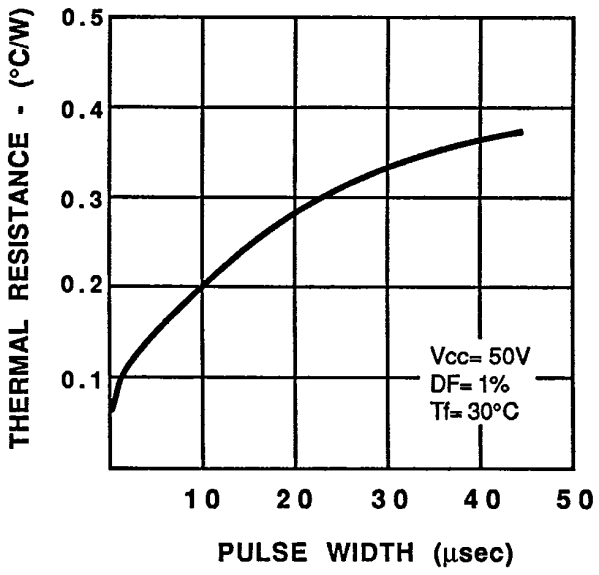
ELECTRICAL CHARACTERISTICS[1]

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Pout	Power Output	f= 1025 to 1150 MHz Vcc= 50 Volts Pw = 10μsec Df = 1%	375			Watts
Pin	Power Input				85	Watts
P_g [2]	Power Gain			6.5		dB
η_c [2]	Collector Efficiency			40		%
VSWR[2]	Load Mismatch Tolerance				∞:1	
BVebo	Breakdown Voltage (Emitter to Base)	Ic= 0A, Ie=20mA	4.0			Volts
BVces	Breakdown Voltage (Collector to Emitter)	Vbe= 0A, Ic= 25mA	55			Volts
h_{FE}	DC-Current Gain	Vc= 5V, Ic= 300mA	10			
θ_{jc}	Thermal Resistance				0.2	°C/W

Note 1: Tc = +25°C unless otherwise specified
Note 2: At rated power output

THERMAL RESISTANCE VS PULSE WIDTH



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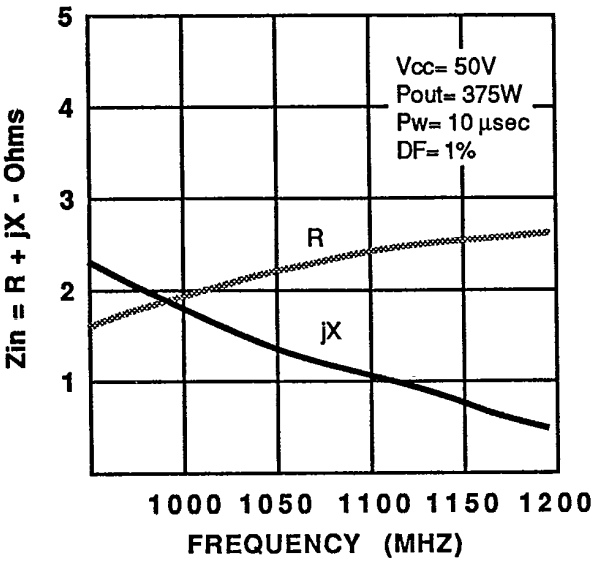
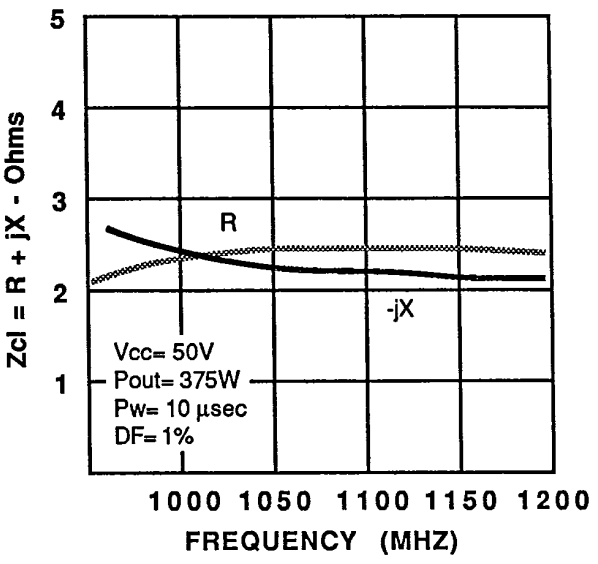
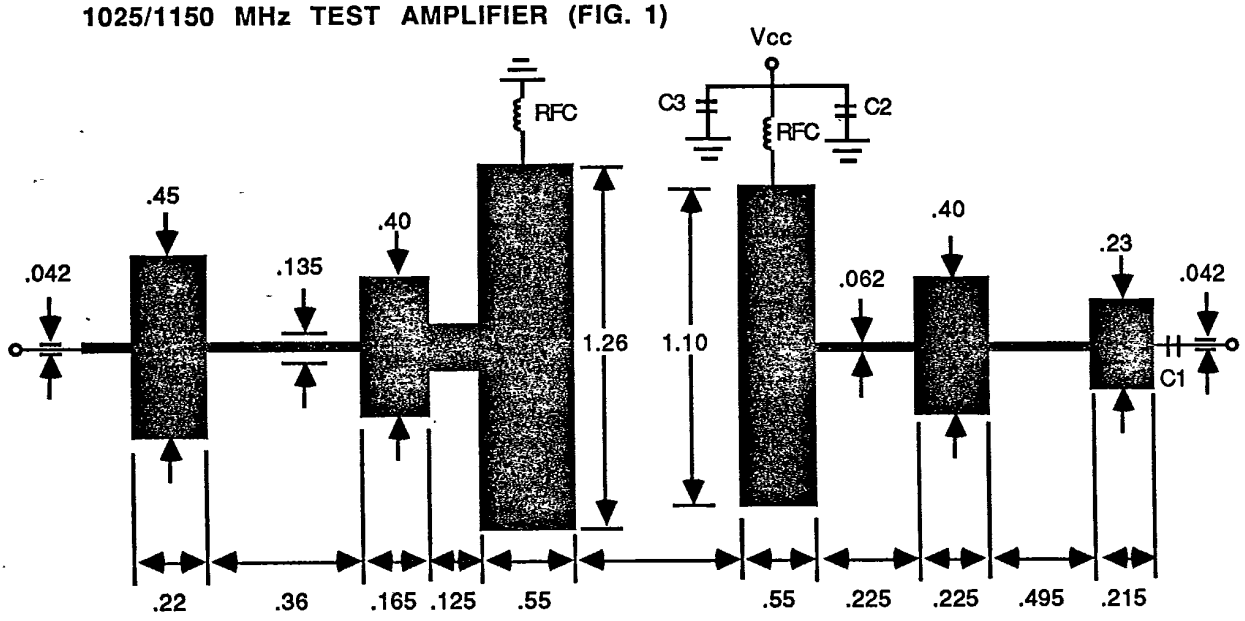
SERIES INPUT IMPEDANCE VS FREQUENCY (TYPICAL)



SERIES LOAD IMPEDANCE VS FREQUENCY (TYPICAL)



1025/1150 MHz TEST AMPLIFIER (FIG. 1)



PCB = .020 TFE, 2 oz., Type "GT"
C1, 2 = 82pf Chip
C3 = 250 MFD