

DME800

800 Watts, 50 Volts

Pulsed Avionics 1025 to 1150 MHz

GENERAL DESCRIPTION

The DME800 is a high power COMMON BASE bipolar transistor. It is designed for pulsed DME systems at 1025 to 1150 MHz, with the pulse width and duty required for DME applications. The device has gold thin-film metalization for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @25°C¹ 2500 W

Maximum Voltage and Current

Collector to Base Voltage (BV_{ces}) 65 V

Emitter to Base Voltage (BV_{ebo}) 3 V

Collector Current (I_c) 50 A

Maximum Temperatures

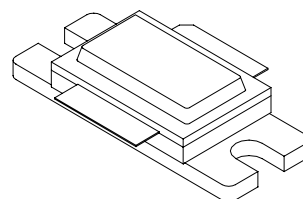
Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

CASE OUTLINE

55ST-1

(Common Base)



ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	Pulse Width = 10 μs, Pin = 100 Watts V _{cc} = 50 Volts F = 1025-1150 MHz Long Term Duty Factor = 1%	800		1000	W
P _g	Power Gain		9.0		10.0	dB
η _c	Collector Efficiency		40			%
R _L	Return Loss		-9			dB
Tr	Rise Time				200	ns
Pd	Pulse Droop				0.7	dB
VSWR	Load Mismatch Tolerance ¹	F = 1025 MHz	3.0:1			

FUNCTIONAL CHARACTERISTICS @ 25°C

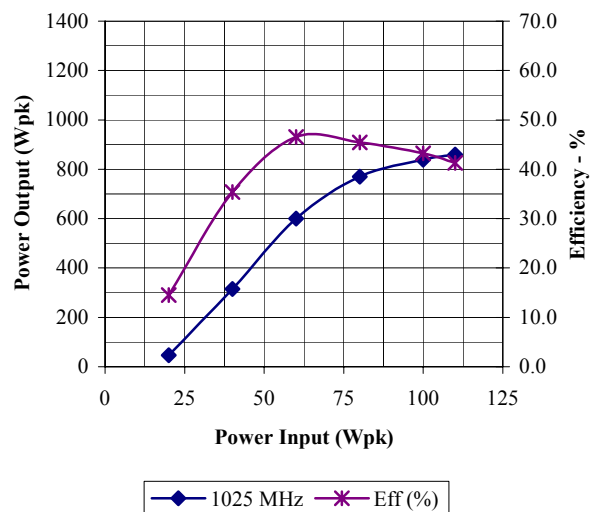
BV _{ebo}	Emitter to Base Breakdown	I _c = 20 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 50 mA	65			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 600mA	20			
θ _{jc} ²	Thermal Resistance			0.04	0.06	°C/W

NOTES: 1. At rated output power and pulse conditions

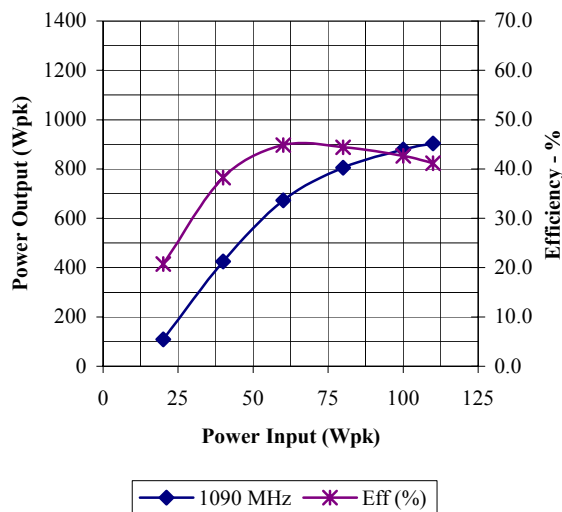
2. At rated pulse conditions

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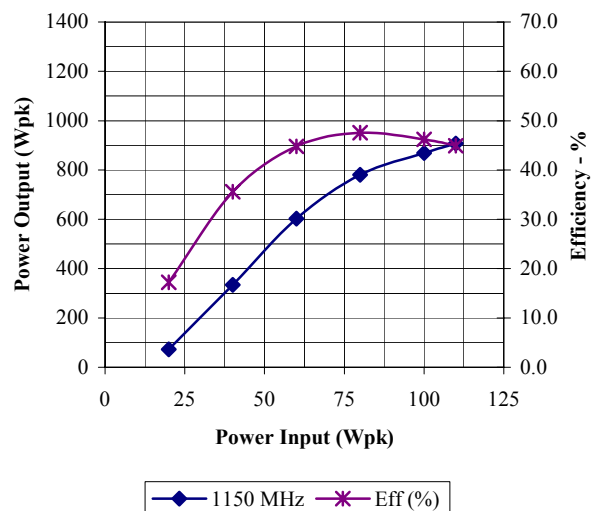
Power Output & Efficiency vs. Power Input
F=1025 MHz

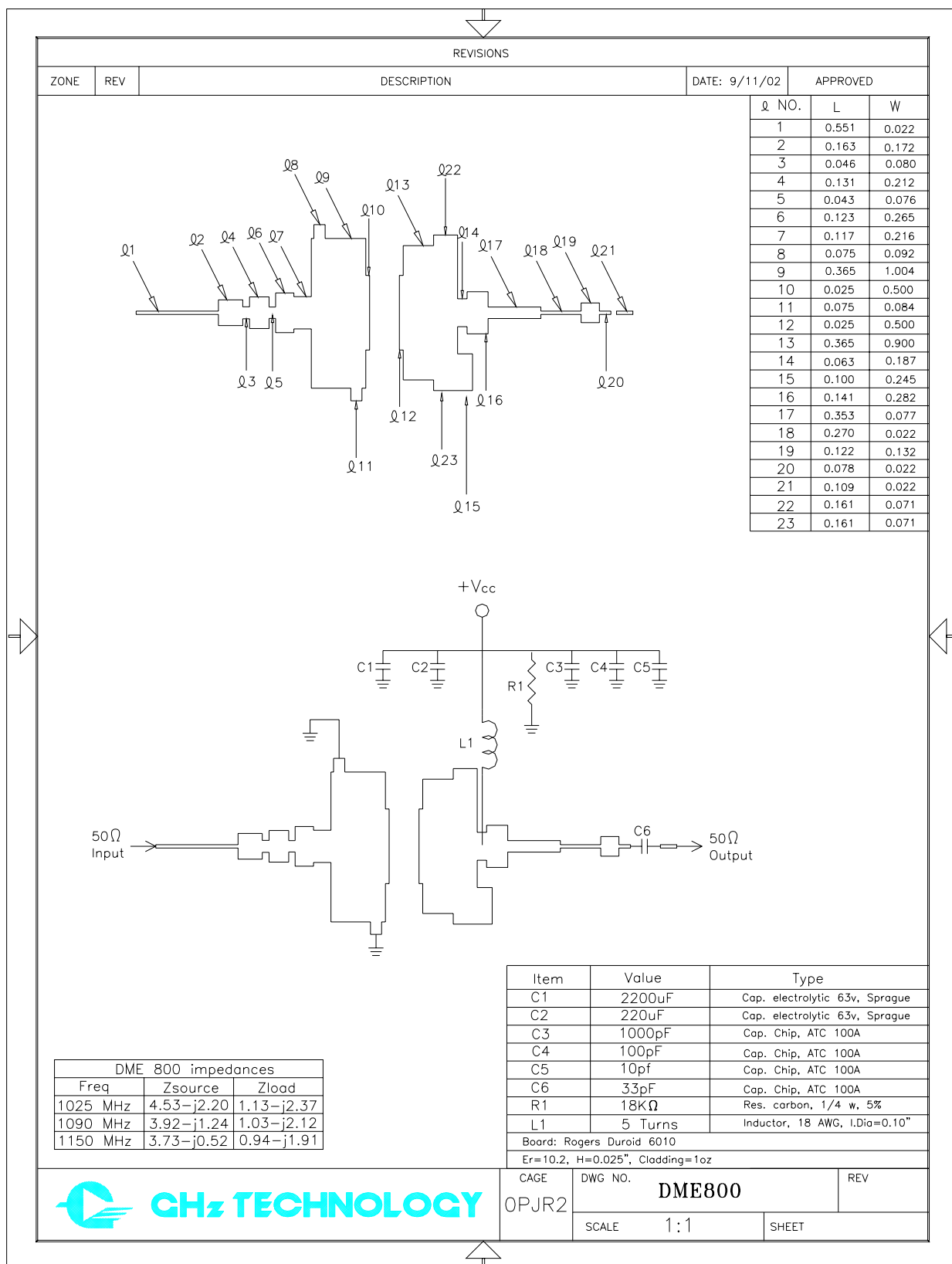


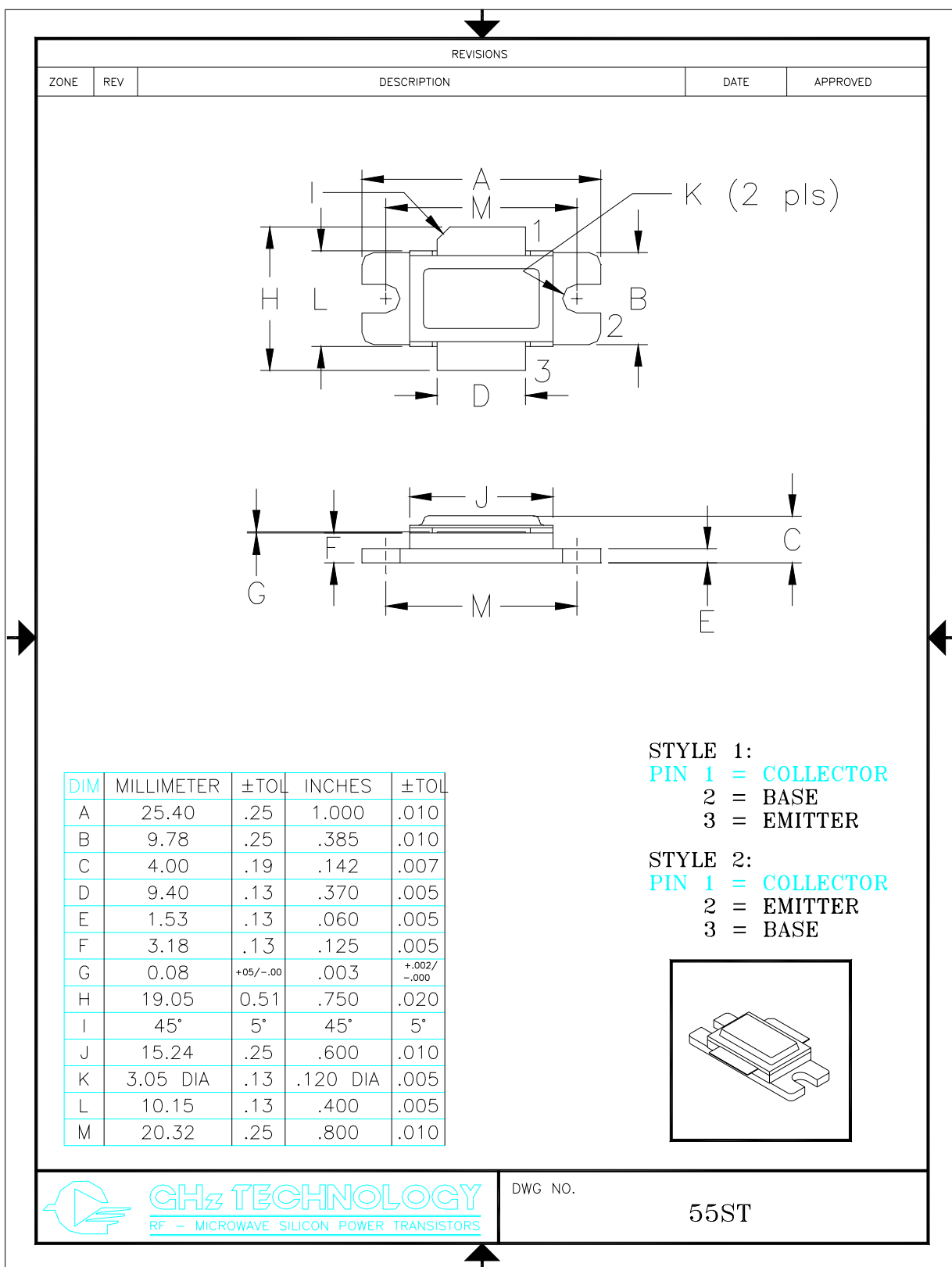
Power Output & Efficiency vs. Power Input
F=1090 MHz



Power Output & Efficiency vs. Power Input
F = 1150 MHz







GHz TECHNOLOGY
 RF - MICROWAVE SILICON POWER TRANSISTORS

DWG NO.

55ST