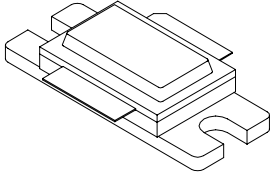


MDS800

800 Watts, 50 Volts
Pulsed Avionics at 1090 MHz

<p>GENERAL DESCRIPTION</p> <p>The MDS800 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems at 1090 MHz, with the pulse width and duty required for MODE-S applications. The device has gold thin-film metalization and emitter ballasting for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p>CASE OUTLINE 55ST-1 (Common Base)</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @ 25°C¹ 1458 W</p> <p>Maximum Voltage and Current Collector to Base Voltage (BV_{ces}) 60 V Emitter to Base Voltage (BV_{ebo}) 3.5 V Collector Current (I_c) 60 A</p> <p>Maximum Temperatures Storage Temperature -65 to +200 °C Operating Junction Temperature +200 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

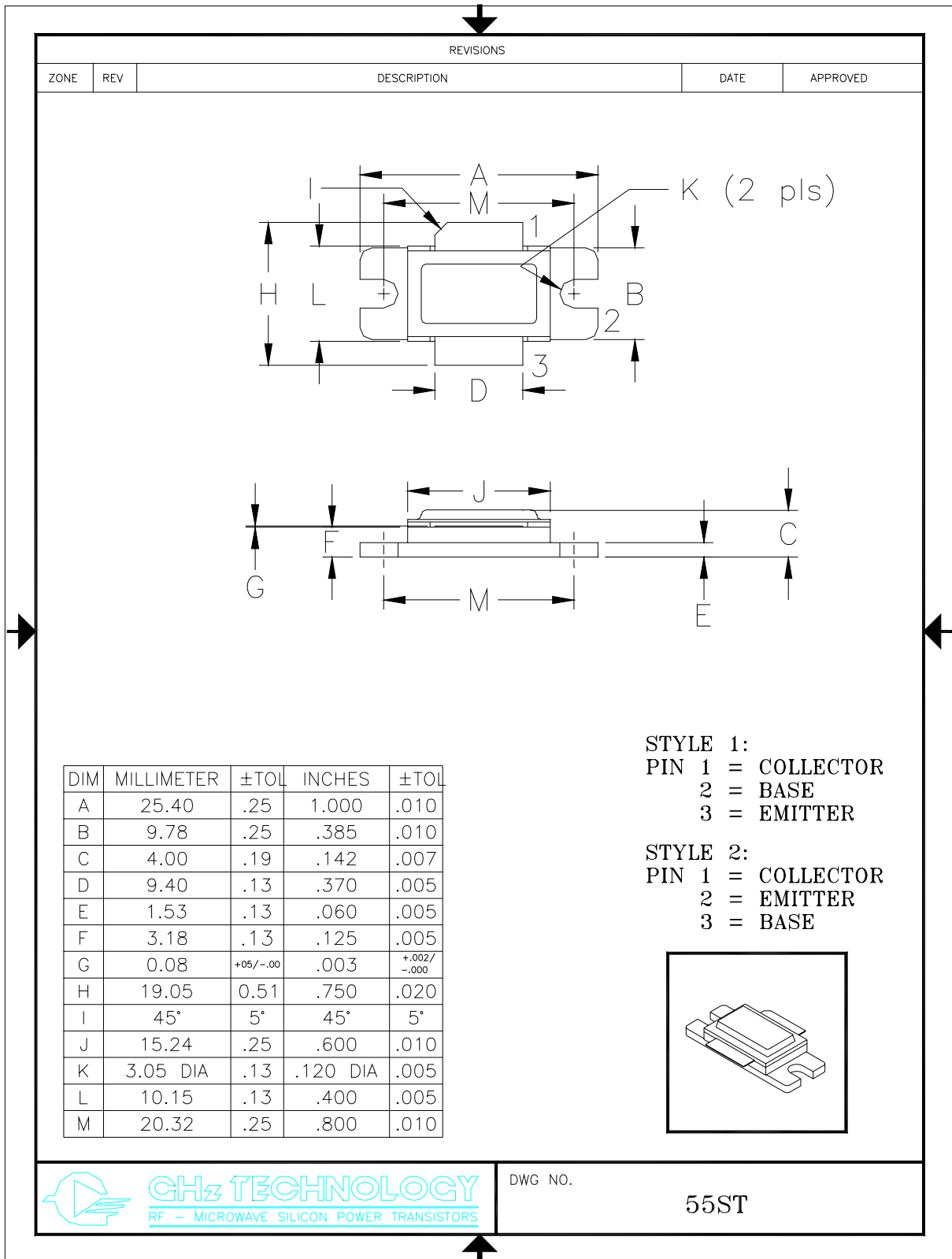
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F = 1090 MHz	800			W
P _{in}	Power Input	V _{cc} = 50 Volts			110	
P _g	Power Gain	Burst width = 128µs	8.6			dB
η _c	Collector Efficiency	LTDF = 2%	40			%
R _L	Return Loss				-12	dB
P _d	Power Droop			0.5		dB
VSWR	Load Mismatch Tolerance ¹	F = 1090 MHz			4.0:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 30 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 = 1A	20			
θ _{jc} ¹	Thermal Resistance				0.12	°C/W

NOTES: 1. At rated output power and pulse conditions
2. 128 µs burst, 0.5 µs on/0.5 µs off, 6.4 ms period

Rev. B – Dec 2005



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