



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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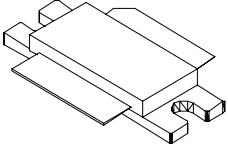
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MDS1100

1100 Watts, 50 Volts

Pulsed Avionics at 1030 MHz

<p>GENERAL DESCRIPTION</p> <p>The MDS1100 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems at 1030 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 style="text-align: center;">CASE OUTLINE 55TU-1</p> <div style="text-align: center; margin-top: 20px;">  </div>
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation</p> <p>Device Dissipation @ 25°C¹ 8750 W</p> <p>Maximum Voltage and Current</p> <p>Collector to Base Voltage (BV_{ces}) 65 V</p> <p>Emitter to Base Voltage (BV_{ebo}) 4.5 V</p> <p>Collector Current (I_c) 100 A</p> <p>Maximum Temperatures</p> <p>Storage Temperature -65 to +200 °C</p> <p>Operating Junction Temperature +200 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

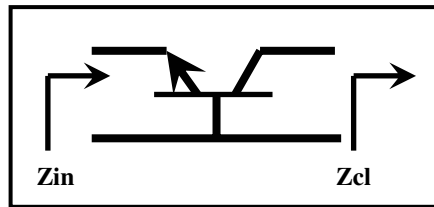
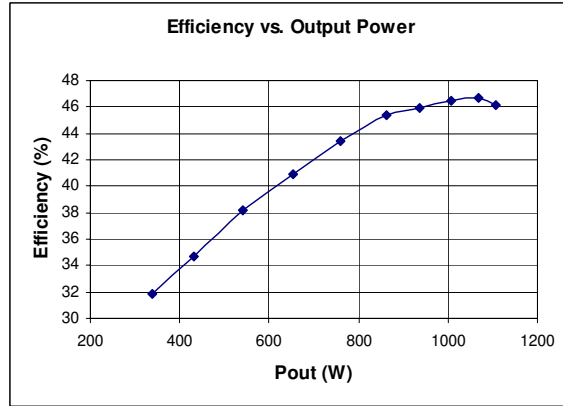
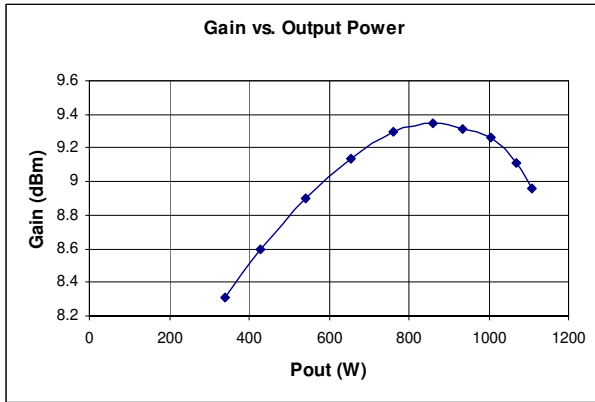
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	F = 1030 MHz, V _{cc} = 50 Volts	1000			W
P _g	Power Gain	Note 2	8.9			dB
η _c	Collector Efficiency	F = 1030 MHz, V _{cc} = 50 Volts Note 2	45			%
R _L	Return Loss		11			dB
Tr	Rise Time		100			nS
Pd	Pulse Droop		0.7			dB
VSWR	Load Mismatch Tolerance ¹		4.0:1			

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 50 mA	3.5			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 100 mA	65			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 5A	20			
θ _{jc} ¹	Thermal Resistance				0.02	°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, Pin = 130 Watts

Rev B, September 2005



	R (ohms)	jX (ohms)
Zin	1.75	+j2.37
Zcl	0.60	-j1.62

Frequency = 1030 MHz, Vcc = 50V, Pin = 130W

MDS1100

REVISIONS				
ZONE	REV	DESCRIPTION	DATE: 8/20/01	APPROVED

DIM	MILLIMETER	±TOL	INCHES	±TOL
A	30.48	±0.25	1.200	±.010
B	9.78	±0.25	.385	±.010
C	4.58	±0.17	.180	±.007
D	16.51	±0.25	.650	±.010
E	1.64	±0.13	.064	±.005
F	2.20	±0.13	.085	±.005
G	.11	±0.03	.004	±.001
H	20.57	±0.51	.810	±.020
I	45°X2.5	.0080°	45°X0.10	.0015°
J	20.32	±0.25	.800	±.010
K	3.30 DIA	±0.13	.130 DIA	±.005
L	10.16	±0.13	.400	±.005
M	25.40	±0.25	1.000	±.010
N	1.52	±0.13	0.060	±.005

STYLE 1:
 PIN 1 = COLLECTOR
 2 = BASE
 3 = EMITTER

STYLE 2:
 PIN 1 = COLLECTOR
 2 = BASE
 3 = EMITTER

DATE	DWG NO.	REV
OPJR2	55TU	B
SCALE	1/1	SHEET 1 OF 1