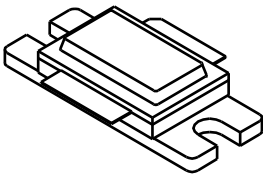




MDS500L
500 Watts, 50 Volts, Pulsed
Avionics 1030 MHz

PRELIMINARY

<p>GENERAL DESCRIPTION</p> <p>The MDS500L is a high power COMMON BASE bipolar transistor. It is designed for MODE-S ELM systems in the 1030 MHz frequency band. The transistor includes input prematch for broadband performance. The device has gold thin-film metallization and diffused ballasting in a hermetically sealed package for proven highest MTTF.</p>	<p>CASE OUTLINE 55ST Style 1</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @25 C¹ 833 W</p> <p>Maximum Voltage and Current Collector to Emitter Voltage (BV_{ces}) 70 V Emitter to Base Voltage (BV_{ebo}) 3.5 V Peak Collector Current (I_c) 25 A</p> <p>Maximum Temperatures Storage Temperature -65 to +150 C 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	500			W
P _{in}	Power Input	V _{cc} = 50 Volts			70	W
P _g	Power Gain	PW = Note 2 DF = Note 2	8.5			dB
η _c	Collector Efficiency			50		%
VSWR	Load Mismatch Tolerance	F = 1030 MHz			3:1	
Pd ¹	Pulse Droop	F = 1030 MHz			0.8	dB
Trise ¹	Rise Time				100	nSec

FUNCTIONAL CHARACTERISTICS @ 25 C

BV _{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.0			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 50 mA	70			V
BV _{cbo}	Collector to Base Breakdown	I _c = 50 mA	70			V
I _{ces}	Collector to Emitter Leakage	V _{ce} = 50V			15	mA
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 1.0 A	20			
jc ¹	Thermal Resistance				0.21	C/W

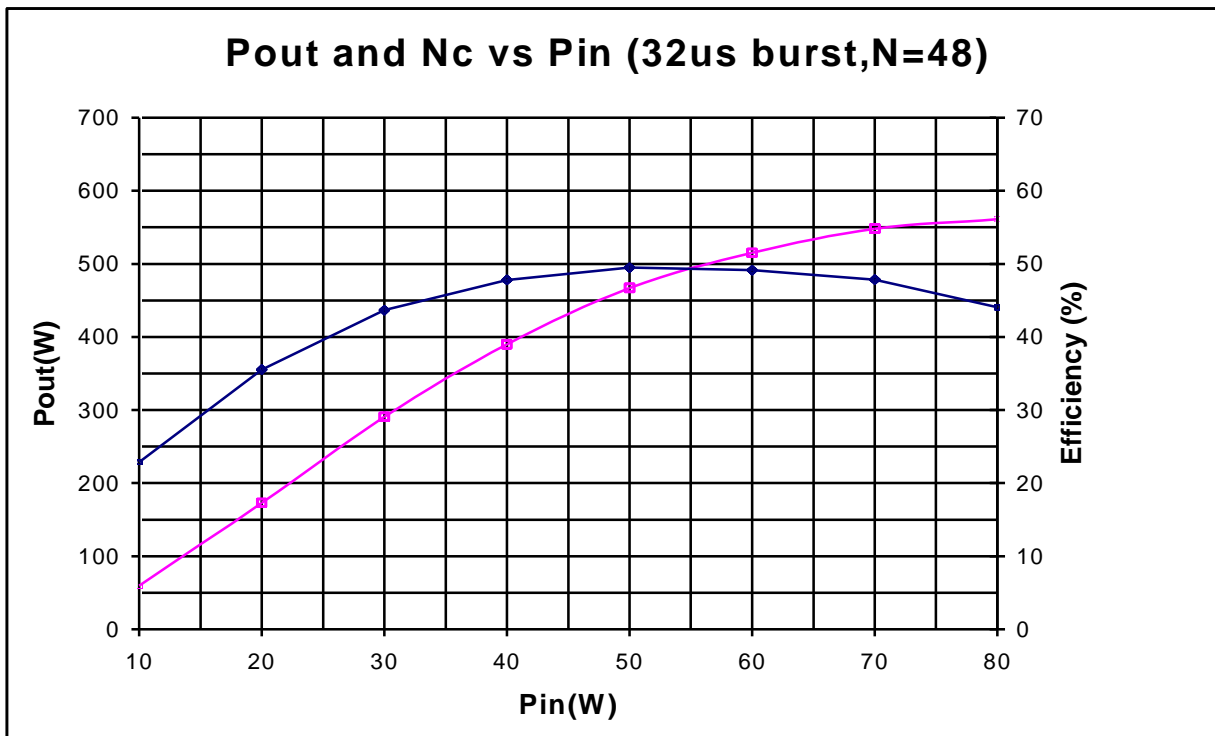
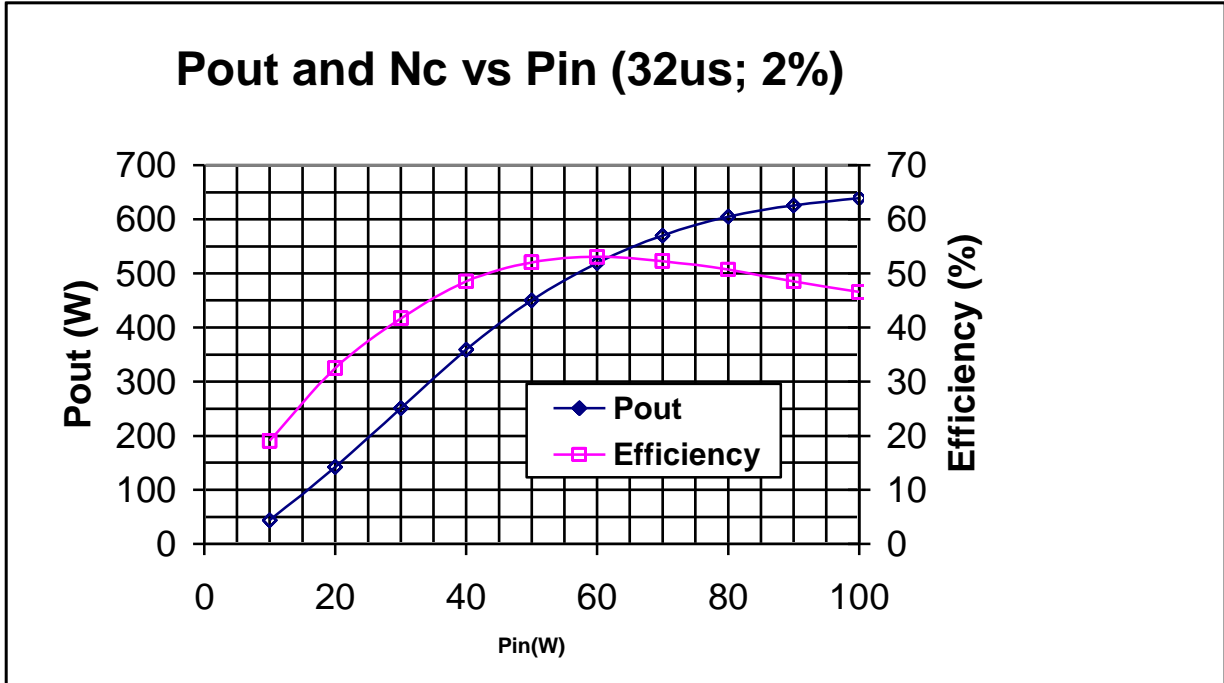
NOTE 1: AT RATED OUTPUT POWER AND PULSE CONDITIONS

NOTE 2: Burst: 32μSec ON/ 18μSec OFF x 48, repeated at 23mSec

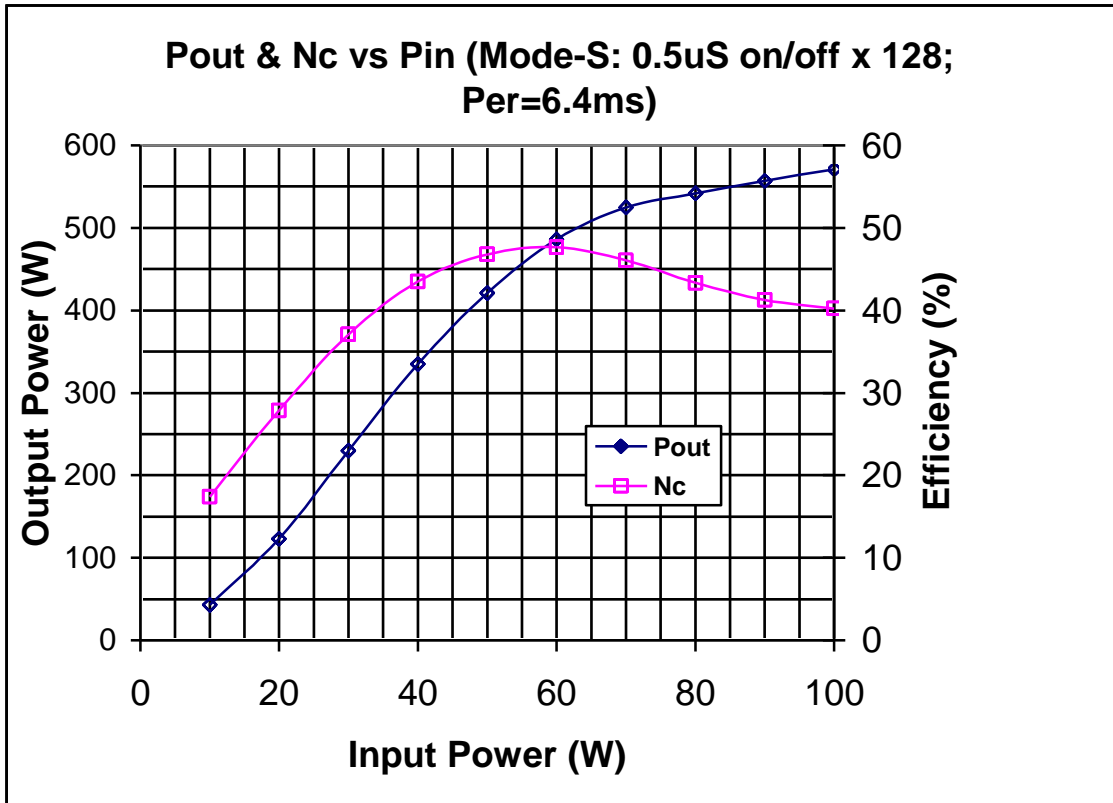
Rev. A May 2006

Microsemi reserves the right to change, without notice, the specifications and information contained herein. Visit our web site at www.microsemi.com or contact our factory direct.

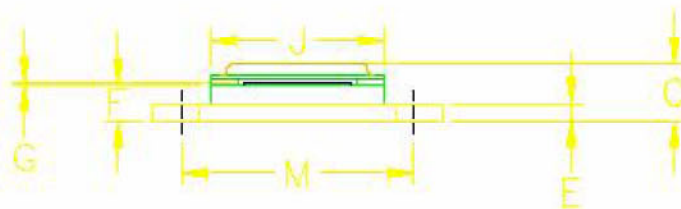
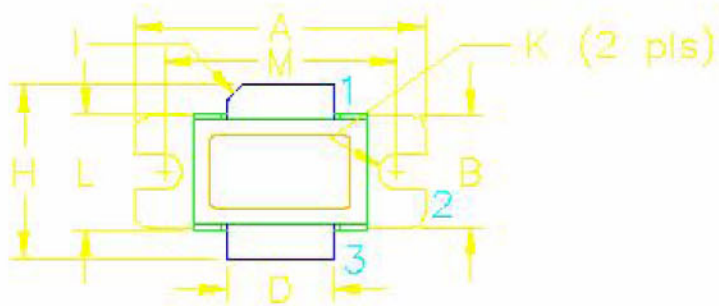
MDS500L



Microsemi reserves the right to change, without notice, the specifications and information contained herein. Visit our web site at www.microsemi.com or contact our factory direct.



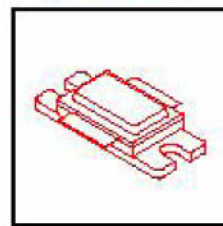
Microsemi reserves the right to change, without notice, the specifications and information contained herein. Visit our web site at www.microsemi.com or contact our factory direct.



DIM	MILLIMETER	±TOL	INCHES	±TOL
A	25.40	.25	1.000	.010
B	9.78	.25	.385	.010
C	4.00	.19	.142	.007
D	9.40	.13	.370	.005
E	1.53	.13	.060	.005
F	3.18	.13	.125	.005
G	0.08	$+0.01/-0.00$.003	$+0.02/-0.00$
H	19.05	0.51	.750	.020
I	45°	5°	45°	5°
J	15.24	.25	.600	.010
K	3.05 DIA	.13	.120 DIA	.005
L	10.15	.13	.400	.005
M	20.32	.25	.800	.010

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

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



DWC NO.

55ST