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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Active
Core Processor	ARM® Cortex®-M0+
Core Size	32-Bit Single-Core
Speed	48MHz
Connectivity	I²C, LINbus, SPI, UART/USART, USB, USB OTG
Peripherals	Brown-out Detect/Reset, DMA, LVD, POR, PWM, WDT
Number of I/O	66
Program Memory Size	128KB (128K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	16K x 8
Voltage - Supply (Vcc/Vdd)	1.71V ~ 3.6V
Data Converters	A/D 14x16b; D/A 1x12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 105°C (TA)
Mounting Type	Surface Mount
Package / Case	80-LQFP
Supplier Device Package	80-FQFP (12x12)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/mkl25z128vlk4

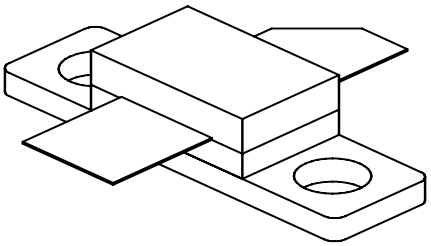
MDS70

70 Watts, 50 Volts, Pulsed
Avionics 1030 - 1090MHz

GENERAL DESCRIPTION

The MDS70 is a COMMON BASE bipolar transistor. It is designed for MODE S pulsed systems in the frequency band 1030-1090 MHz. The device has gold thin-film metallization for proven highest MTTF. The transistor includes input prematch for broadband capacity. Low thermal resistance package reduces junction temperature, extends life.

CASE OUTLINE
55CX, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C[2]	225 Watts
Maximum Voltage and Current	
BVces Collector to Base Voltage	65 Volts
BVebo Emitter to Base Voltage	3.5 Volts
Ic Collector Current	5.0 Amps
Maximum Temperatures	
Storage Temperature	- 65 to + 150°C
Operating Junction Temperature	+ 200°C

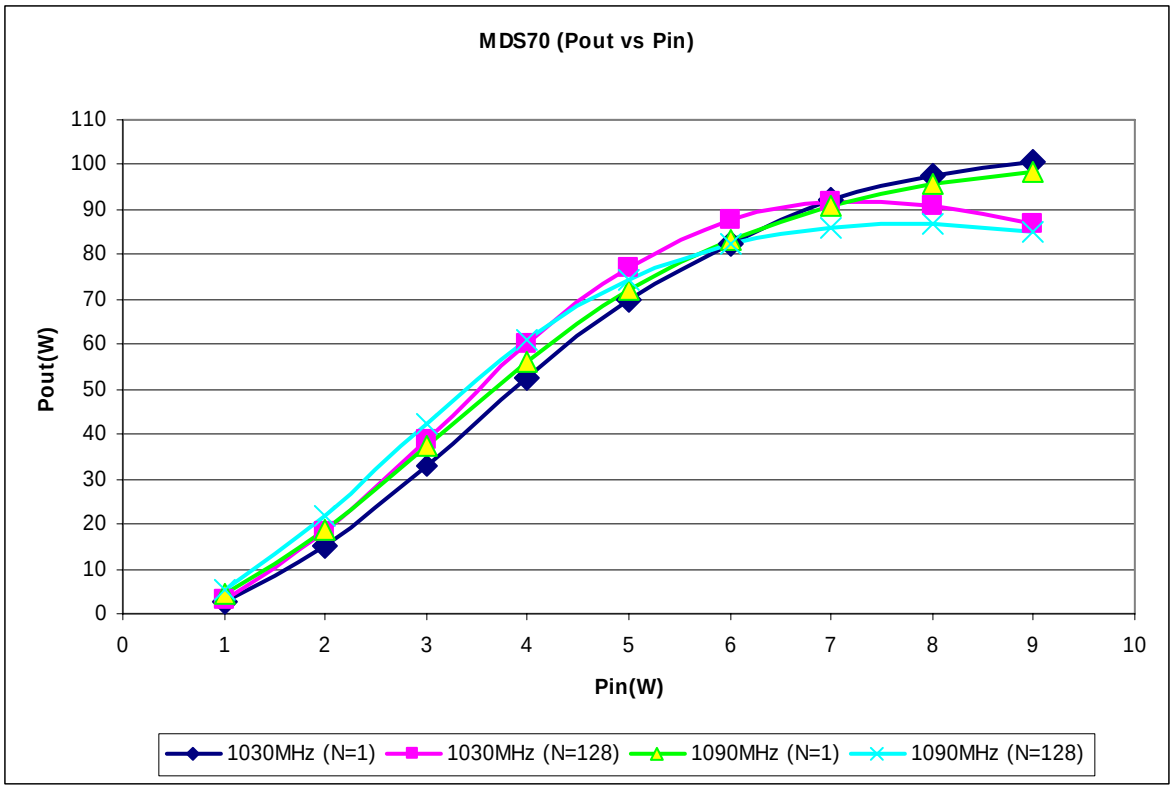
ELECTRICAL CHARACTERISTICS @ 25 °C

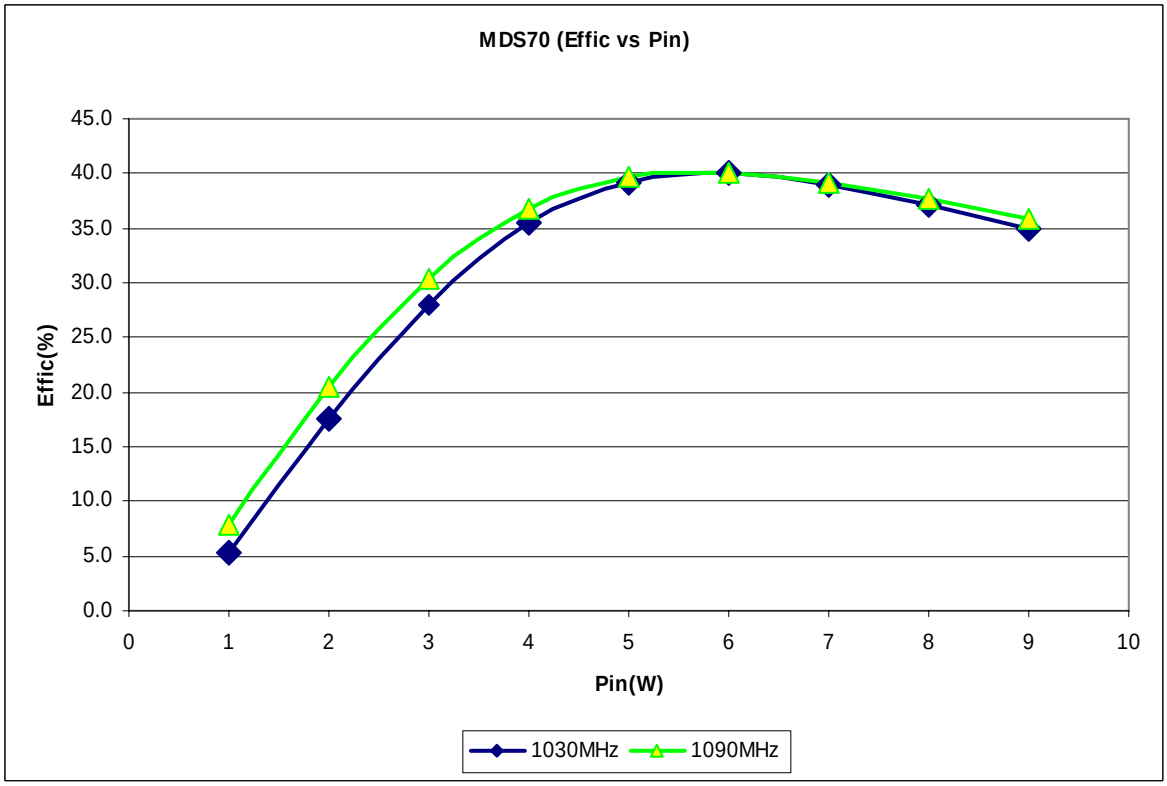
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1030-1090 MHz Vcc = 50 Volts Pin = 6.5W Pulse Mod: Mode S[2]	70		95	Watts
Pg	Power Gain		10.3		11.65	dB
RT	Rise Time				80	ns
η_c	Collector Efficiency		35			%
VSWR[1]	Load Mismatch Tolerance	1090 MHz	5:1			

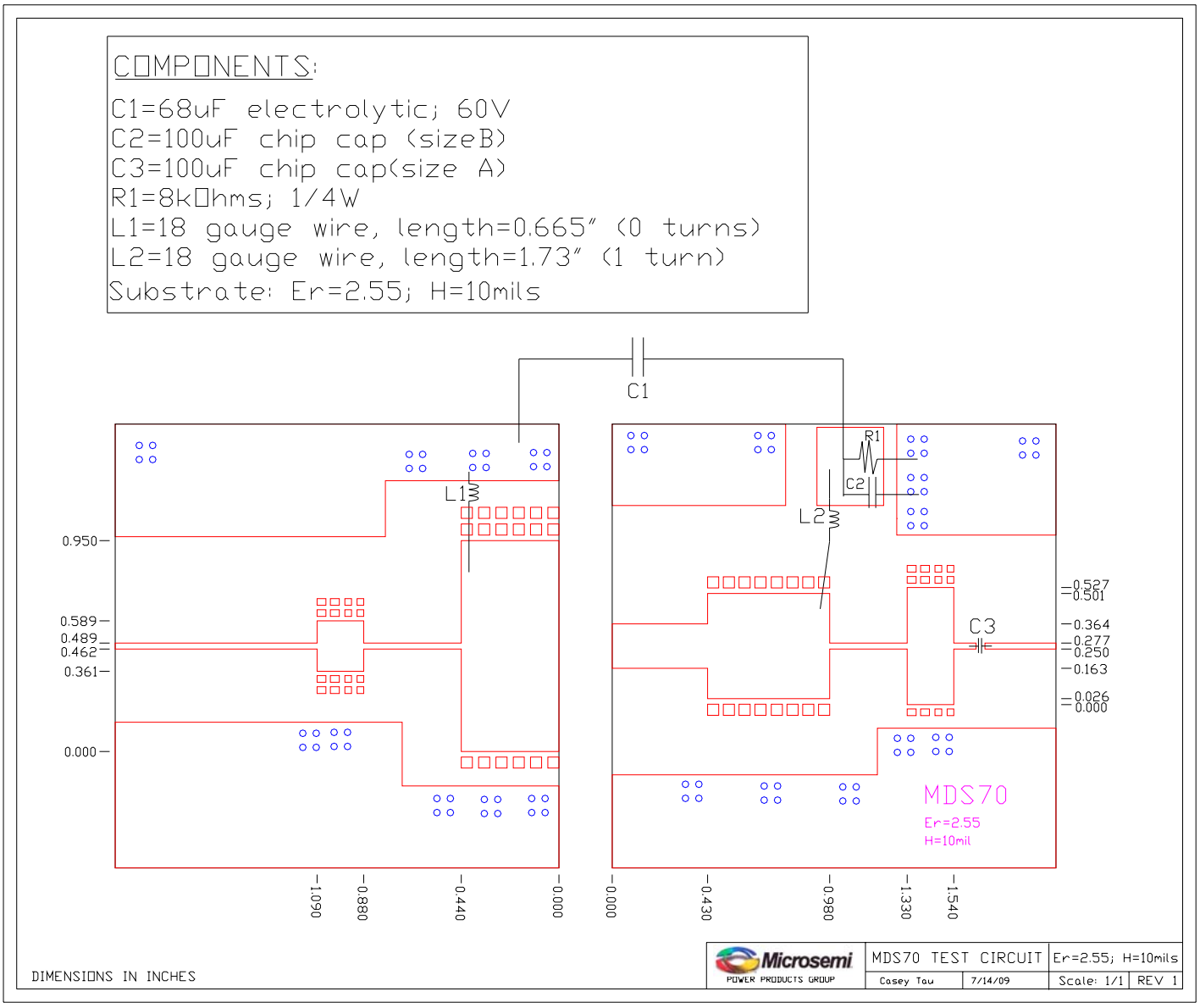
BVebo	Emitter to Base Breakdown	Ie = 5 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 25 mA	65			Volts
h_{FE}	DC - Current Gain	Ic = 500 mA, Vce = 5 V	20			
θjc[1]	Thermal Resistance				0.8	°C/W

Notes: 1) At rated pulse conditions 2) Mode S Burst: 0.5us (on/off), N=128, Per=6.4ms; LTDC=1%

Rev C: August 2010

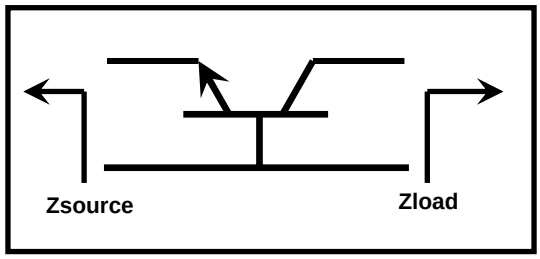






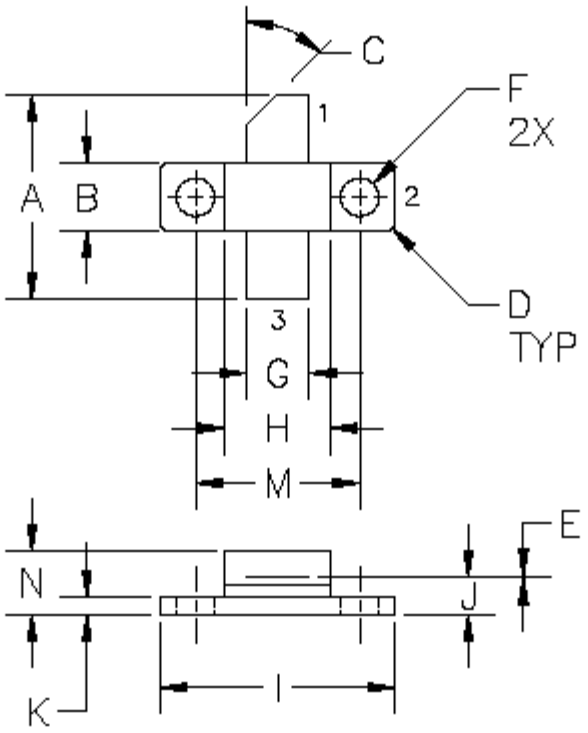
MDS70 IMPEDANCE DATA:

FREQUENCY	Z_{source} (ohms)	Z_{load} (ohms)
1030	3.0 – j4.8	5.3 – j1.2
1090	2.8 – j4.5	6.2 – j1.2



REVISIONS

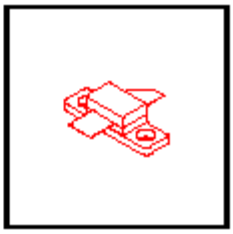
ZONE	REV	DESCRIPTION	DATE	APPROVED



DIM	MILLIMETER	±TOL	INCHES	±TOL
A	17.78	.76	.700	.030
B	5.84	.13	.230	.005
C	45°	5°	45°	5°
D	1.02X45°	5°	.040X45°	5°
E	.13	.02	.005	.001
F	3.30 DIA	.13	.130 DIA	.005
G	5.46	.13	.215	.005
H	9.14	.13	.360	.005
I	20.32	.13	.800	.005
J	3.17	.25	.125	.010
K	1.52	.13	.060	.005
M	14.27	.13	.562	.005
N	5.46	REF	.215	REF

STYLE 1:
PIN1 = COLLECTOR
2 = BASE
3 =EMITTER

STYLE 2:
PIN1 = COLLECTOR
2 = EMITTER
3 = BASE



Microsemi
POWER PRODUCTS GROUP

CAGE	DWG NO.	REV
0PJR2	55CX	B
	SCALE 2/1	SHEET