

15 WATT POWER AMPLIFIER MODULE, 1.8 - 2.2 GHz

Features

P1dB Output Power: 15 Watts from 1.8 to 2.2 GHz
Gain: 40 dB min
Noise Figure: 6 dB
Thermally Compensated and Protected
Reverse Polarity Protected
TTL DC Power Enable
Unconditionally Stable
Heat Sink/Fan Accessories Available

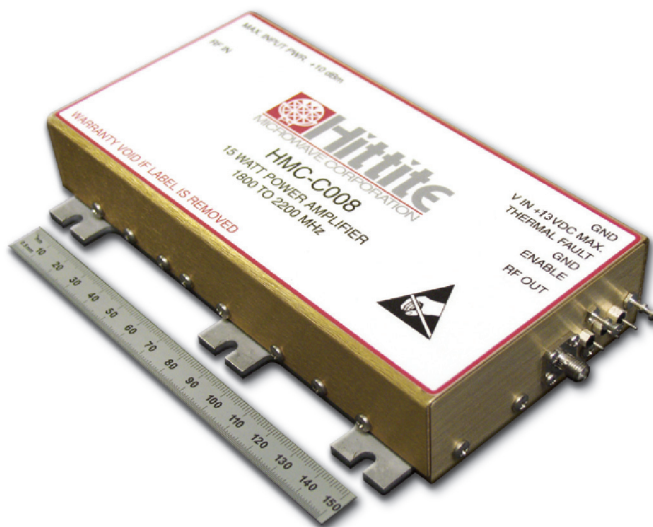
Typical Applications

Test applications for:

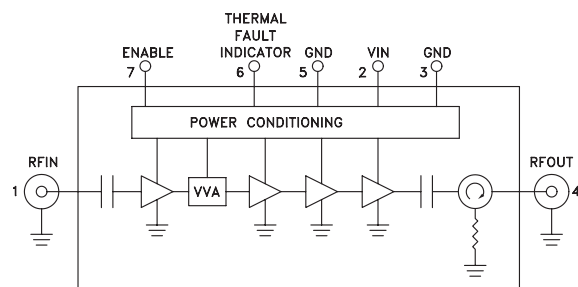
- Cellular/PCS/3G Infrastructure
- Automated Test Equipment (ATE)
- Laboratory Use

General Description

The HMC-C008 is a 15 Watt Power Amplifier Module suitable for Cellular/3G repeaters, laboratory use and ATE applications. The unit includes DC power sequencing, enable and conditioning, as well as an output circulator for load mismatch protection. Thermal protection/fault circuitry automatically turns off DC power at base temperatures exceeding +75 °C and restores power at < +55 °C.



Functional Diagram

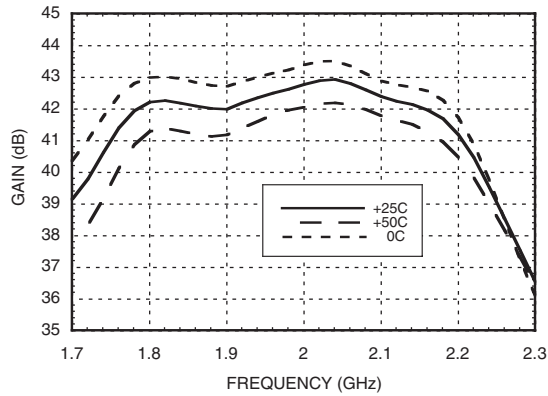


Electrical Specifications, $T_A = +25^\circ \text{C}$, $V_{IN} = +12\text{V}$

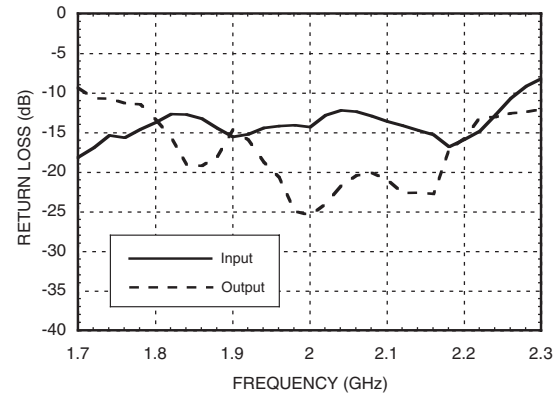
Parameter	Min.	Typ.	Max.	Units
Frequency Range	1.8 - 2.2			GHz
Gain	40	42		dB
Noise Figure		6	8	dB
Input Return Loss		12		dB
Output Return Loss		12		dB
Output Power for 1 dB Compression (P1dB)	15			W
Saturated Output Power (Psat)		43		dBm
Output Third Order Intercept (IP3) (Two-tone Input Power = -28 dBm each tone)		52		dBm
Channel Output Power for -50 dBc ACPR (CDMA 2000, 1960 MHz)		36		dBm
Channel Output Power for -50 dBc ACPR (W-CDMA, 2110 MHz)		33		dBm
Second Harmonic at Output P1dB		-55		dBc
Third Harmonic at Output P1dB		-55		dBc
Spurious at Output P1dB		-65		dBc
Supply Current		6.5	7.0	A

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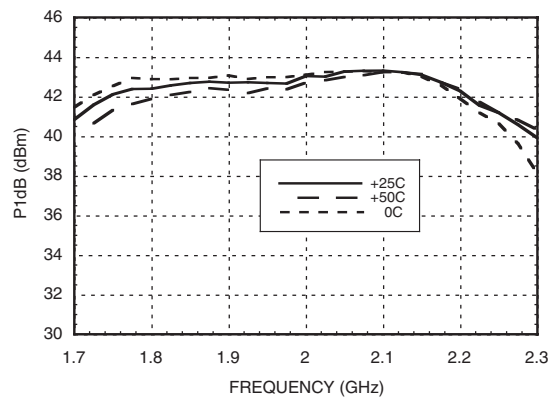
Gain vs. Temperature



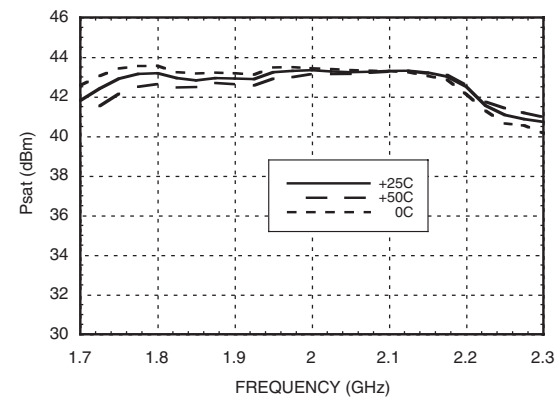
Input & Output Return Loss



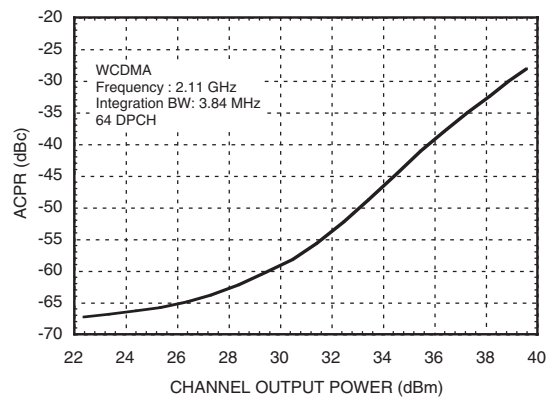
P1dB vs. Temperature



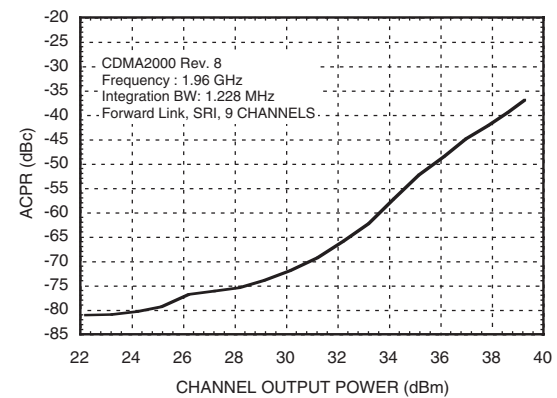
Psat vs. Temperature



ACPR @ 2110 MHz, W-CDMA

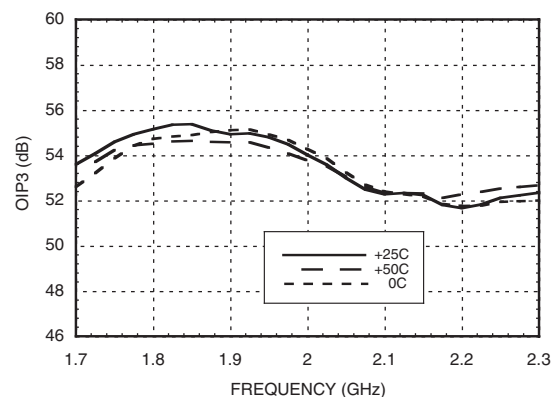


ACPR @ 1960 MHz, CDMA-2000

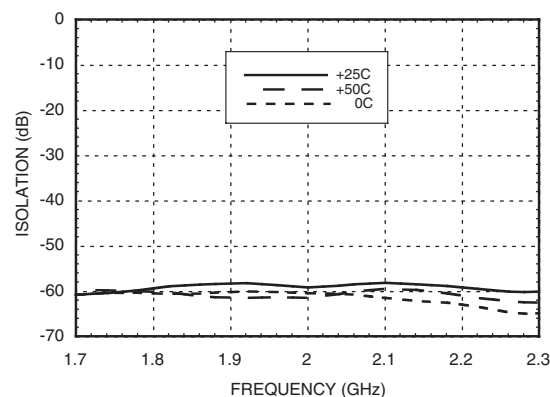


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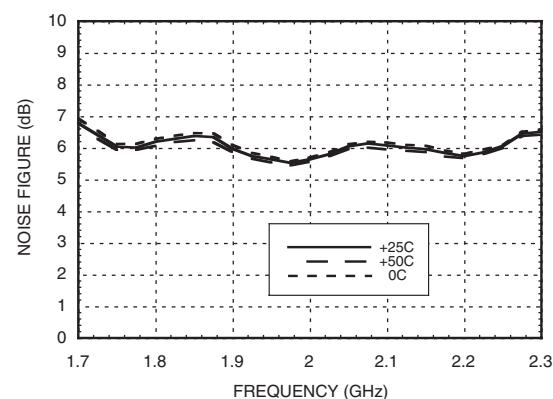
Output IP3 vs. Temperature



Reverse Isolation vs. Temperature



Noise Figure vs. Temperature



Absolute Maximum Ratings

Supply Voltage (VIN)	+13 Vdc
RF Input Power (RFIN)	+10 dBm
Storage Temperature	-40 to +70 °C
Operating Temperature	0 to +50 °C
RF Output Isolator Max Dissipation	20 W
Thermal Fault Indicator Max Pdis (derate 1.8 mW/°C above 50 °C)	180 mW
Enable Vmax	6 V



**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**

**Thermal Fault Indicator
Characteristics**

Parameter	Min.	Typ.	Max.	Units
I _{OUT} (V _{OUT} > 2V)		350		mA
R _{ON} (I _{OUT} = 50 mA)			7.5	Ohms
R _{OFF} (V _{OUT} = 30 V)		1		MOhm

Enable Input Characteristics

Parameter	Min.	Typ.	Max.	Units
V _{IH}	3.5			V
V _{IL}			1.6	V
I _{IL} @ VIN = 0V		-0.5		mA
I _{IH} @ 5V		< ± 50		μA

Recommended Biasing Procedure

TURN-ON

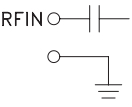
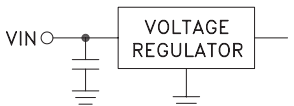
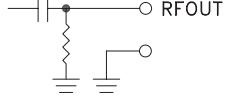
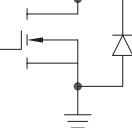
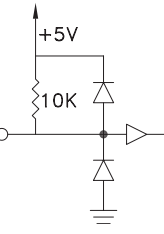
1. Connect RF input and output
2. Apply Supply Voltage VIN (+12 Vdc)
3. Set Enable low
4. Apply RF input signal

TURN-OFF

1. Remove RF input signal
2. Remove Supply Voltage VIN

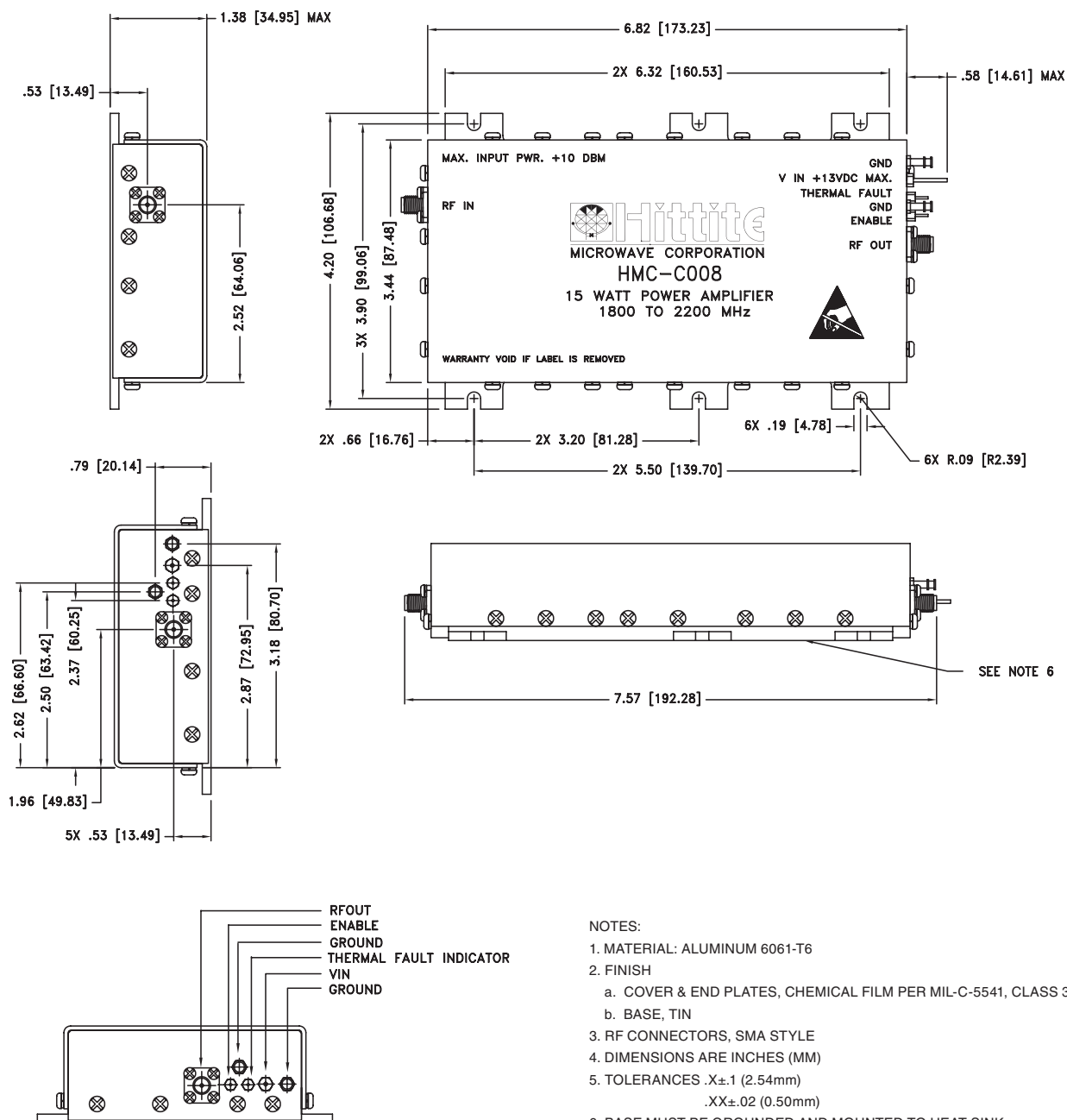
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Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	RFIN & RF Ground	RF input connector, SMA female. This pin is AC coupled and matched to 50 Ohms from 1.8 - 2.2 GHz.	
2	VIN	Power supply voltage for the amplifier.	
3	GND	Power supply ground.	
4	RFOUT & RF Ground	RF output connector, SMA female. This pin is isolator protected and matched to 50 Ohms from 1.8 - 2.2 GHz.	
5	GND	Ground for thermal fault indicator and enable circuit.	
6	Thermal Fault Indicator	Open drain output. High impedance for base plate temperatures less than 55 °C. Low impedance for base plate temperatures exceeding 75 °C.	
7	Enable	TTL compatible supply voltage (VIN) shutdown. If enable feature is not required, short this pin to DC ground. TTL "High" Disable TTL "Low" Enable	

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Outline Drawing

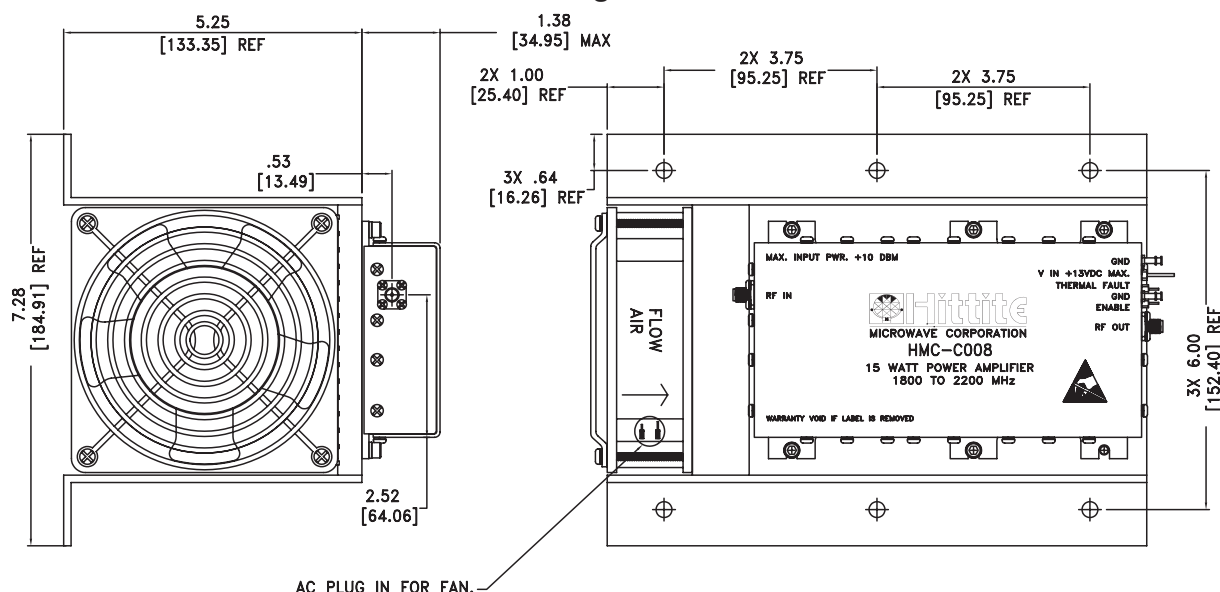


NOTES:

1. MATERIAL: ALUMINUM 6061-T6
2. FINISH
 - a. COVER & END PLATES, CHEMICAL FILM PER MIL-C-5541, CLASS 3
 - b. BASE, TIN
3. RF CONNECTORS, SMA STYLE
4. DIMENSIONS ARE INCHES (MM)
5. TOLERANCES .X±.1 (2.54mm)
.XX±.02 (0.50mm)
6. BASE MUST BE GROUNDED AND MOUNTED TO HEAT SINK
CAPABLE OF DISSIPATING 100W (50 °C)

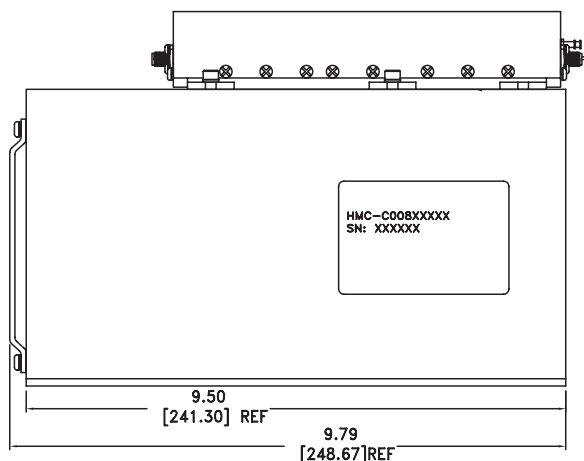
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HMC-C008 Heatsink/Fan Outline Drawing



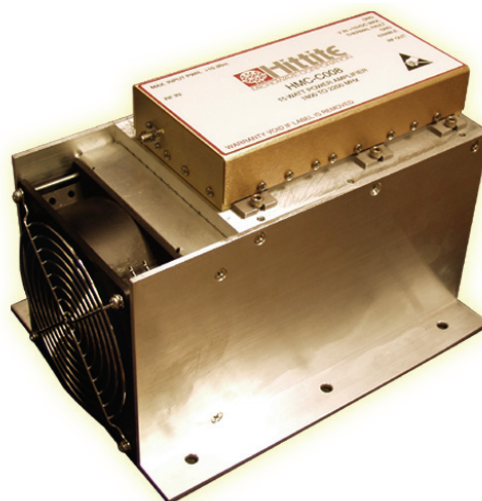
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HMC-C008 Ordering Information

Part Number	Description
HMC-C008	15 Watt Power Amplifier Module, 1.8 - 2.2 GHz
HMC-C008HV115	15 Watt Power Amplifier Module with heat sink, 115 Vac fan and power cord.
HMC-C008HV230	15 Watt Power Amplifier Module with heat sink, 230 Vac fan and power cord.





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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