

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM3742-8UL

FEATURES

■ HIGH POWER

P1dB=39.5dBm at 3.7GHz to 4.2GHz

■ HIGH GAIN

G1dB=11.0dB at 3.7GHz to 4.2GHz

■ BROAD BAND INTERNALLY MATCHED

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P1dB	VDS= 10V f = 3.7 – 4.2GHz	dBm	38.5	39.5	—
Power Gain at 1dB Compression Point	G1dB		dB	10.0	11.0	—
Drain Current	IDS1		A	—	2.2	2.6
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	ηadd		%	—	37	—
3rd Order Intermodulation Distortion	IM3	Two Tone Test Po= 28.5dBm (Single Carrier Level)	dBc	-44	-47	—
Drain Current	IDS2		A	—	2.2	2.6
Channel Temperature Rise	ΔTch	VDS X IDS X Rth(c-c)	°C	—	—	80

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

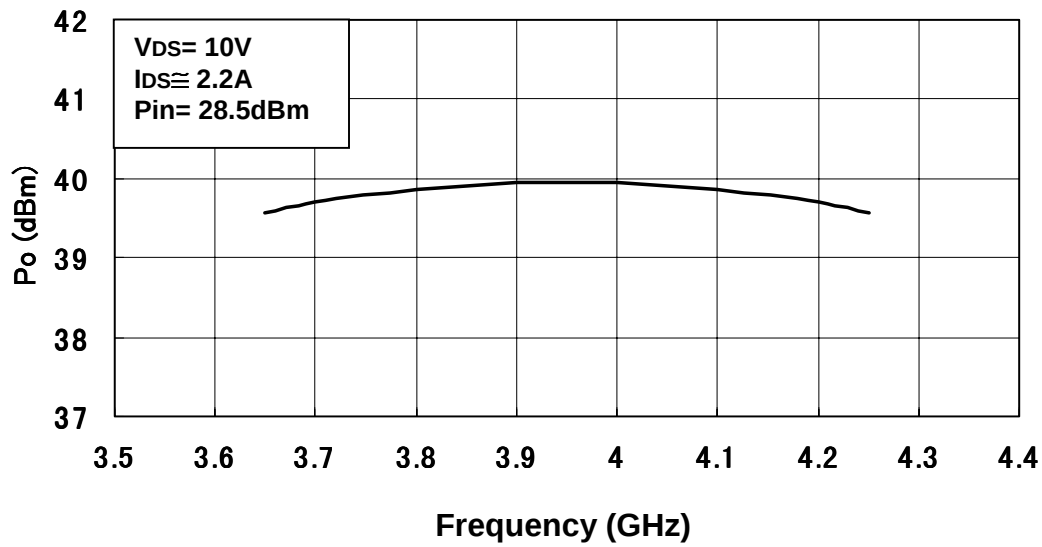
CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 3.0A	mS	—	1800	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 30mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	5.2	7.0
Gate-Source Breakdown Voltage	VGSO	IGS= -100μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.5	3.5

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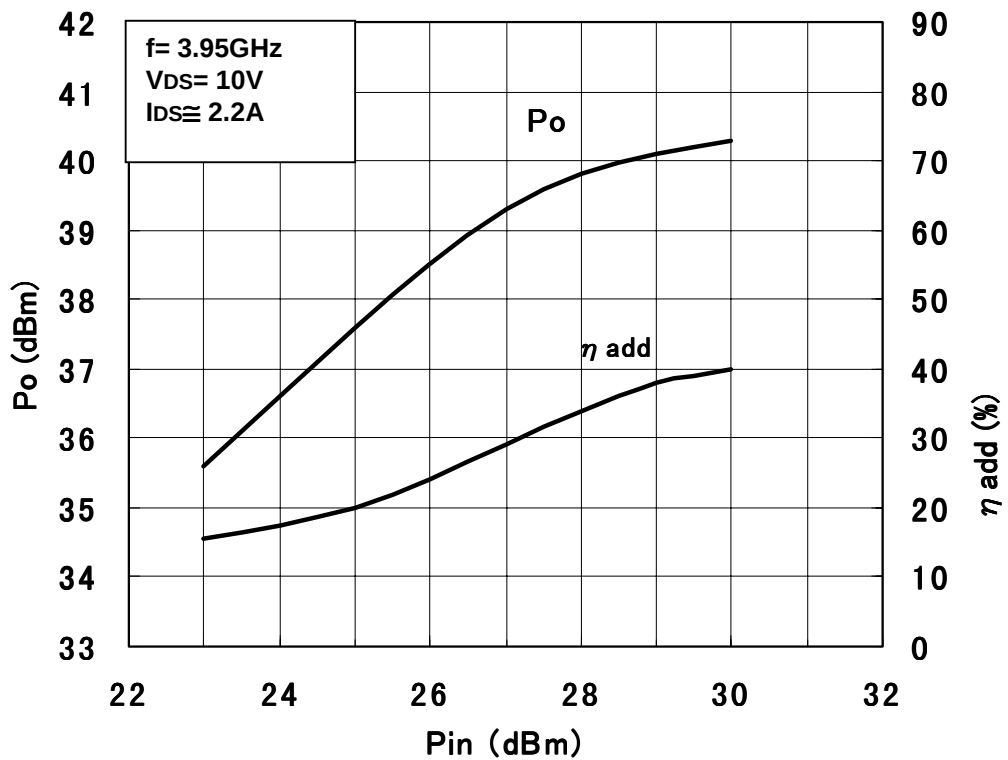
The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.

RF PERFORMANCES

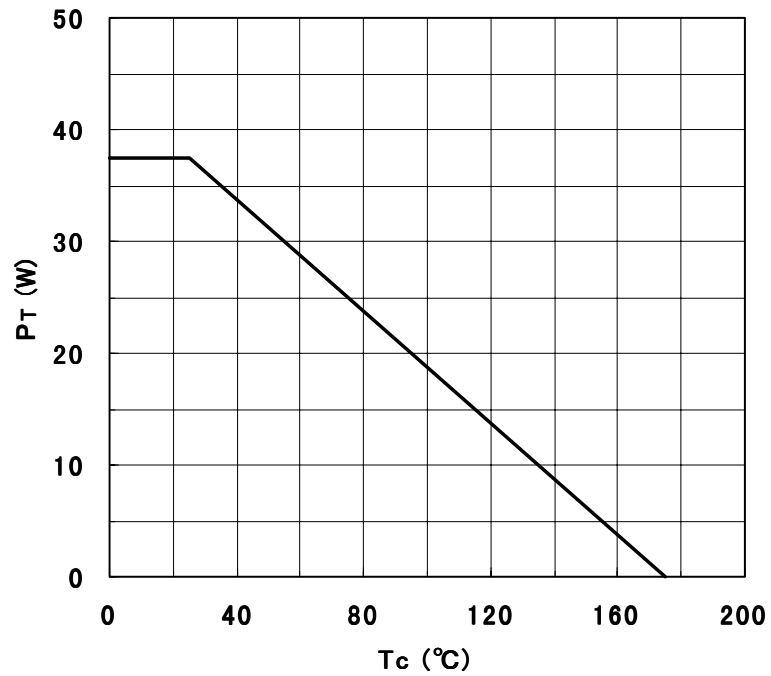
Output Power vs. Frequency



Output Power vs. Input Power



POWER DISSIPATION vs. CASE TEMPERATURE



IM3 vs. OUTPUT POWER CHARACTERISTICS

