

TOSHIBA**MICROWAVE SEMICONDUCTOR**
TECHNICAL DATA**MICROWAVE POWER GaN HEMT****TGI7785-25L****FEATURES****■ HIGH POWER**

Pout=44.5dBm at Pin=35.0dBm

■ HIGH GAIN

GL=12.0dB at 7.7GHz to 8.5GHz

■ BROAD BAND INTERNALLY MATCHED HEMT

HERMETICALLY SEALED PACKAGE

■ LOW INTERMODULATION DISTORTION

IM3(Min.)=-40dBc at Po=29.0dBm

Single Carrier Level

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 24V IDSset \leq 1.75 A f = 7.7 to 8.5GHz @ Pin = 35.0 dBm	dBm	44.0	44.5	—
Drain Current	IDS1		A	—	2.7	3.2
Power Added Efficiency	η_{add}		%	—	39	—
Linear Gain	GL	@ Pin = 20dBm	dB	11.0	12.0	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 29.0dBm (Single Carrier Level)	dBc	-40	—	—
Drain Current	IDS2		A	—	—	2.0
Channel Temperature Rise	ΔT_{ch}	(VDS X IDS1 + Pin - Pout)X Rth(c-c)	°C	—	130	150

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 2.5A	S	—	2.5	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 12mA	V	-1	-4	-6
Saturated Drain Current	IDSS	VDS= 5V VGS= 0V	A	—	8	—
Gate-Source Breakdown Voltage	VGSO	IGS= -5mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	—	3.2

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ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	50
Gate-Source Voltage	VGS	V	-10
Drain Current	IDS	A	8
Total Power Dissipation (Tc=25°C)	PT	W	70
Channel Temperature	Tch	°C	250
Storage	Tstg	°C	-65 to +175

PACKAGE OUTLINE (7- AA04A)