

# TOSHIBA

## MICROWAVE SEMICONDUCTOR

### TECHNICAL DATA

# MICROWAVE POWER GaAs FET

## S8835

### FEATURES:

- HIGH POWER  
 $P_{1dB} = 24 \text{ dBm}$  at  $f = 8 \text{ GHz}$
- HIGH GAIN  
 $G_{1dB} = 8 \text{ dB}$  at  $f = 8 \text{ GHz}$
- SUITABLE FOR C-BAND AMPLIFIER
- ION IMPLANTATION

### RF PERFORMANCE SPECIFICATIONS ( $T_a = 25^\circ \text{C}$ )

TYPE NUMBER (PACKAGE CODE)				S8835 (2-3H1B)										
CHARACTERISTIC	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.								
Output Power at 1dB Compression Point	$P_{1dB}$	$V_{DS} = 10V$  $f = 8GHz$	dBm	23.0	24.0	-								
Power Gain at 1dB Compression Point	$G_{1dB}$						dB	7.0	8.0	-				
Drain Current	$I_{DS}$										A	-	0.08	0.13
Power Added Efficiency	$\eta_{add}$													

### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ \text{C}$ )

TYPE NUMBER (PACKAGE CODE)				S8835 (2-3H1B)		
CHARACTERISTIC	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	$g_m$	$V_{DS} = 3V$ $I_{DS} = 0.09A$	mS	-	60	-
Pinch-off Voltage	$V_{GSoff}$	$V_{DS} = 3V$ $I_{DS} = 3mA$	V	-2	-3	-5
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 3V$ $V_{GS} = 0V$	A	-	0.18	0.25
Gate to Source Breakdown Voltage	$V_{GSO}$	$I_{GS} = -3\mu A$	V	-5	-	-
Thermal Resistance	$R_{th(c-c)}$	Channel to case	$^\circ\text{C/W}$	-	40	60

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\* The information contained herein may be changed without prior notice. It is therefore advisable to contact TOSHIBA before proceeding with the design of equipment incorporating this product.

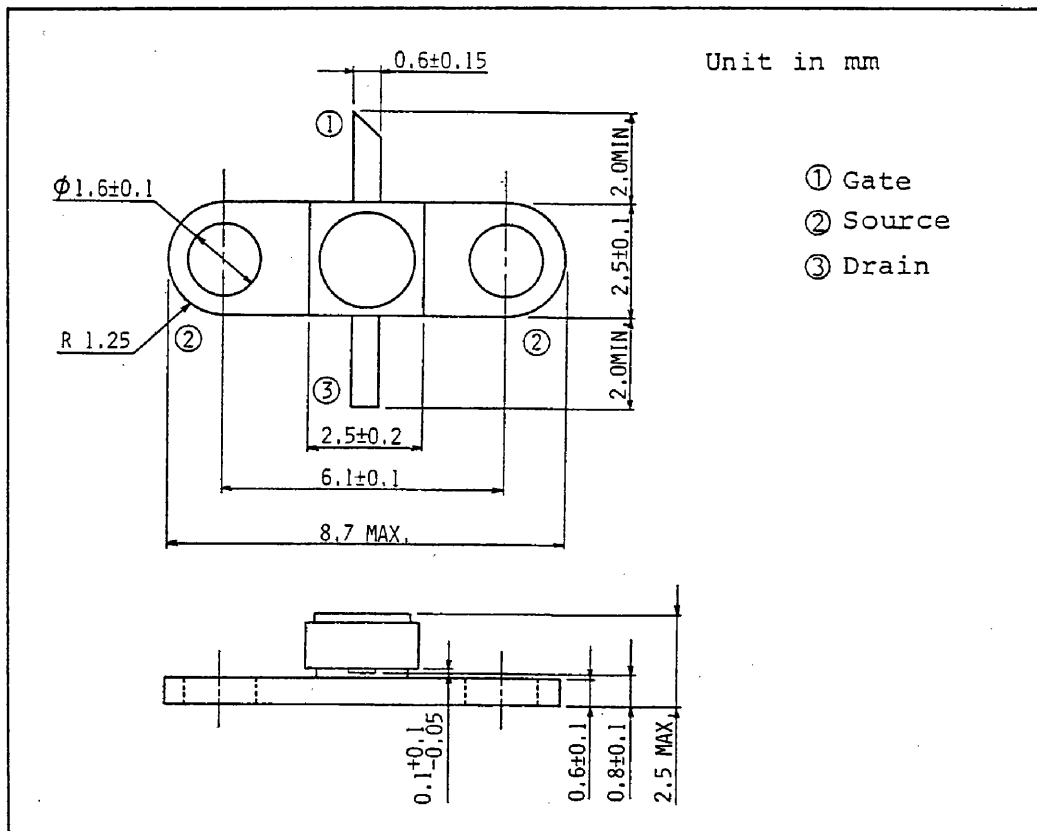


# S8835

## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

TYPE NUMBER (PACKAGE CODE)			S8835 (2-3H1B)
CHARACTERISTIC	SYMBOL	UNIT	RATING
Drain-Source Voltage	V <sub>DS</sub>	V	15
Gate-Source Voltage	V <sub>GS</sub>	V	-5
Drain Current	I <sub>D</sub>	A	0.25
Total Power Dissipation (Tc=25°C)	P <sub>T</sub>	W	2.5
Channel Temperature	T <sub>ch</sub>	°C	175
Storage Temperature	T <sub>stg</sub>	°C	-65~175

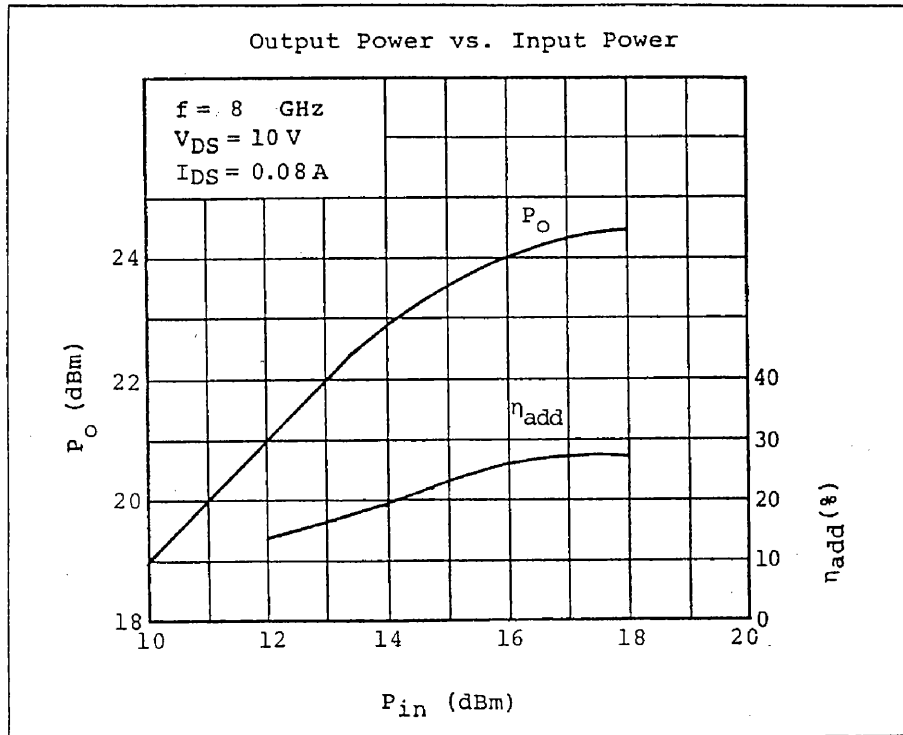
## PACKAGE OUTLINE (2-3H1B)



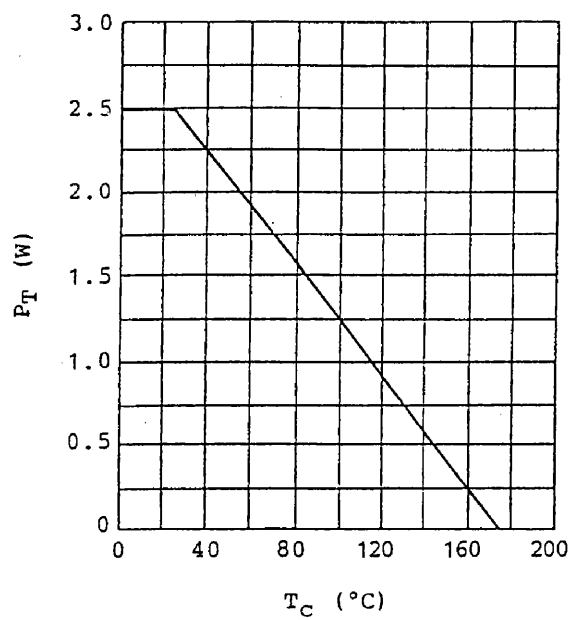
### HANDLING PRECAUTIONS FOR PACKAGED TYPE

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

OUTPUT POWER CHARACTERISTIC



POWER DISSIPATION VS. CASE TEMPERATURE



# S8835

## S8835 S-PARAMETERS (MAGN. and ANGLES)

$V_{DS} = 10 \text{ V}$ ,  $I_{DS} = 60 \text{ mA}$

$f = 3-10 \text{ GHz}$

