

■ Features

- High Output Power: $P_{sat}=54.0\text{dBm}$ (Typ.)
- High Gain: $G_p=10.0\text{dB}$ (Typ.)
- High Power Added Efficiency: $PAE=38\%$ (Typ.)
- Frequency Band: 9.3 to 9.5GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\text{ohm}$
- Hermetically Sealed Package


■ Description

The SGC9395-200A-R is a high power GaN-HEMT that is internally matched for X-band radar bands to provide optimum power and gain in a 50ohm system.

ABSOLUTE MAXIMUM RATING (Case Temperature $T_c=25$ deg.C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	55	V
Gate-Source Voltage	V_{GS}	-15	V
Storage Temperature	T_{stg}	-55 to +125	deg.C
Channel Temperature	T_{ch}	+250	deg.C

RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V_{DS}		≤ 50	V
Forward Gate Current	I_{GF}	$R_g=51\text{ohm}$	≤ 12.0	mA
Reverse Gate Current	I_{GR}	$R_g=51\text{ohm}$	≥ -9.0	mA
Channel Temperature	T_{ch}		$< +200$	deg.C

ELECTRICAL CHARACTERISTICS (Case Temperature $T_c=25$ deg.C)

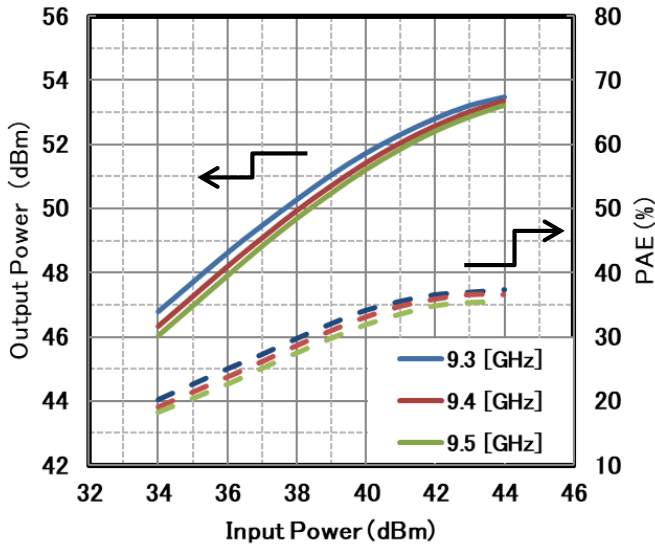
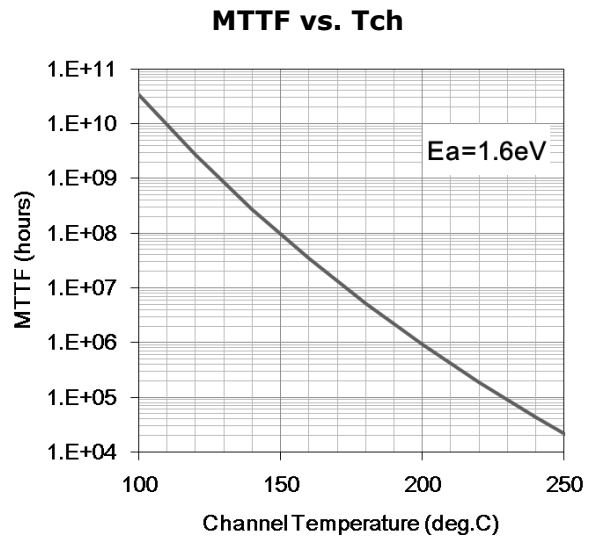
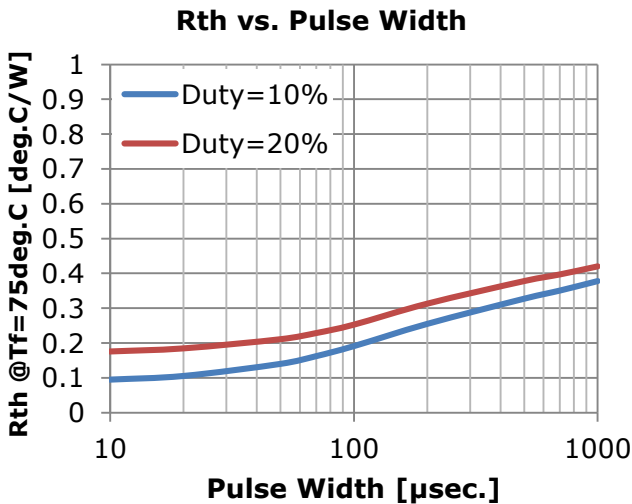
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	V_P	$V_{DS}=50\text{V}, I_{DS}=13.0\text{mA}$	-	-4.5	-	V
Frequency Range	Freq.	$V_{DS}=50\text{V}$ $I_{DS(DC)}=0.66\text{A}$ Pulse Width=100μsec. Duty=10%	9.3	-	9.5	GHz
Output Power at $P_{in}=44\text{dBm}$	P_{sat}		53.0	54.0	-	dBm
Power Gain at $P_{out}=53\text{dBm}$	G_p		9.0	10.0	-	dB
Drain Current at $P_{in}=44\text{dBm}$	I_{DSR}		-	11.8	14.5	A
Power Added Efficiency at $P_{in}=44\text{dBm}$	PAE		-	38	-	%
Gain Flatness	ΔG		-	1.6	-	dB
Thermal Resistance	R_{th}	Channel to Case ($P_{diss}=100\text{W}, \text{CW}$)	-	0.6	0.8	deg.C/W

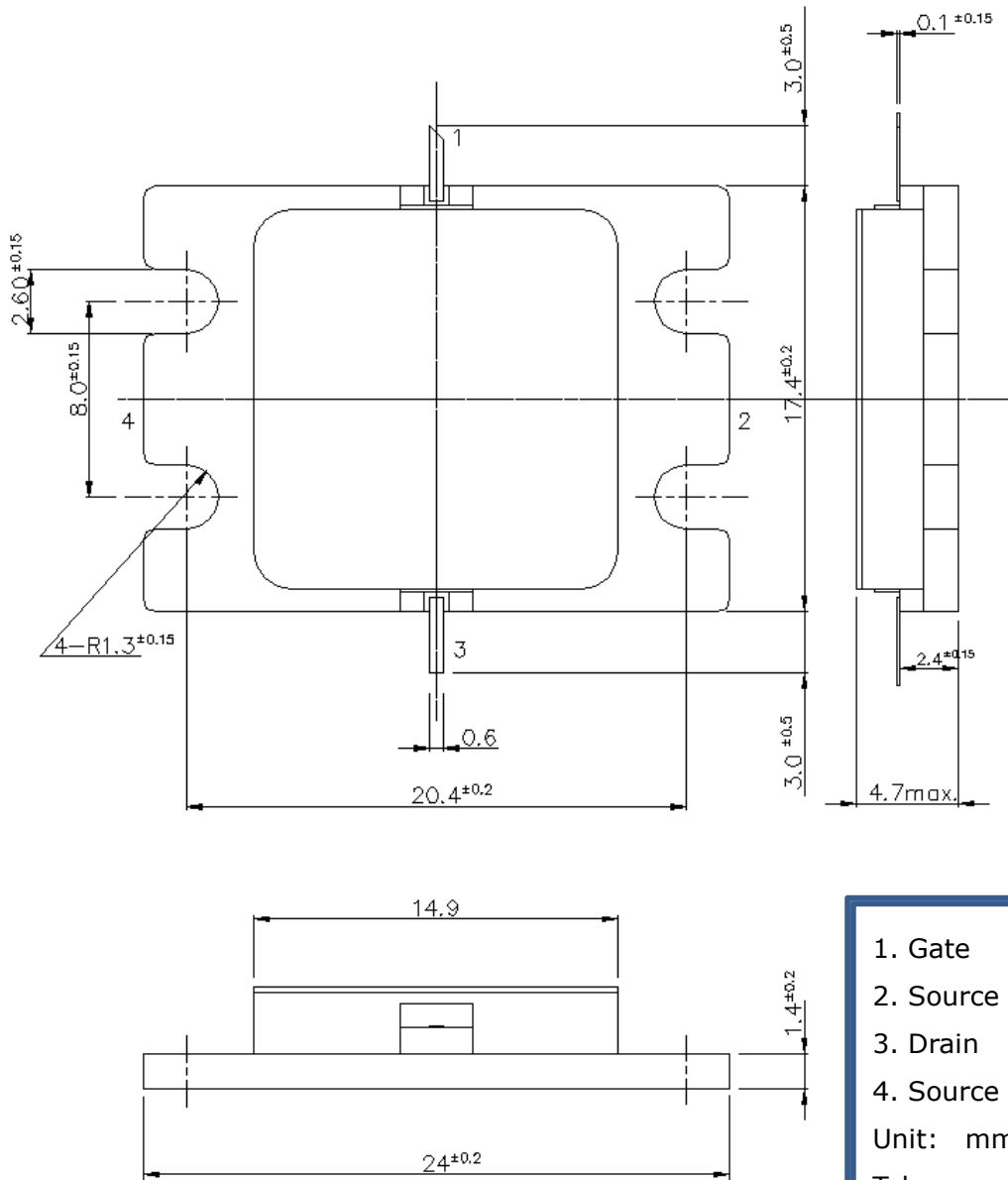
CASE STYLE	IK
RoHS Compliance	YES
ESD	Class 2 2000V to <4000V

Note: Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

● RF Characteristics

**Output Power &
Power Added Efficiency vs. Input Power**
 $V_{DS}=50V, I_{DS(DC)}=0.66A$
 $PW=100\mu sec., Duty=10\%$


● Thermal Characteristics In Pulsed Operation


● Package Outline
Case Style : IK


1. Gate
 2. Source
 3. Drain
 4. Source
 Unit: mm
 Tolerance: \pm 0.15

For Safety, Observe the Following Procedures Environmental Management

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Respect all applicable laws of the country when discarding this product.
This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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