

MM WAVE GaAs VARACTOR DIODE

ND3139-5S ND3139-5M ND3139-5N

FEATURES

- LOW CONVERSION LOSS: Lo = 7.5 dB TYP at f = 20 GHz to 40 GHz, PiN = +16 dBm
- HIGH CUTOFF FREQUENCY: fc = 300 GHz TYP
- LOW THERMAL RESISTANCE: RTH (J-C) = 500°C/W MAX
- SMALL SIZE
- HIGH RELIABILITY

DESCRIPTION

These GaAs Varactor Diodes are especially designed for millimeter wave multiplier applications such as a doubler from 20 GHz to 40 GHz. These diodes feature low conversion loss, high cutoff frequency, low thermal resistance, small size and high reliability. They are available in three package types: 5S, 5M and 5N.

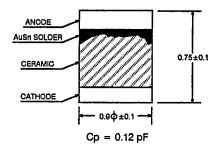
ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

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SYMBOLS	PARAMETERS	UNITS	RATINGS			
VR	Reverse Voltage	٧	15			
Po	Power Dissipation	mW	200			
Тор	Operating Temperature	°C	-65 to +125			
Тѕтс	Storage Temperature	°C	-65 to +125			
TSDR	Soldering Temperature	°C	+230*			

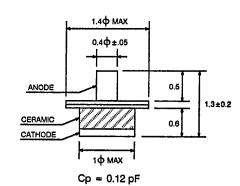
^{*}One time within 10 seconds.

OUTLINE DIMENSIONS (Units in mm)

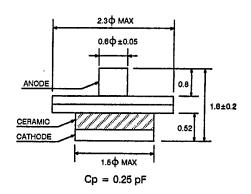
OUTLINE 5S



OUTLINE 5M



OUTLINE 5N



ELECTRICAL CHARACTERISTICS (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	MIN	ТҮР	MAX
VR	Reverse Voitage at In = 10 µA	٧	15		
la	Reverse Current at Vr = +11 V	nA			10
VF	Forward Voltage at IF = 10 mA	٧			1.3
Сю	Junction Capacitance at VR = 0 V, f = 1 MHz	pF	0.15	0.20	0.25
RTH (J-C)	Thermal Resistance: Small Signal Method lop = 5 mA f (high) = 5 MHz, f (low) = 30 Hz	°C/W			500
fco	Cutoff Frequency* at VR = 0 V, f = 20 GHz	GHz	90	110	
fc-4	Cutoff Frequency* at VR = 4 V, f = 20 GHz	GHz	260	300	
Lo	Conversion Loss as a doubler, fin = 20 GHz, at Pin = +16 dBm	dB		7.5	

^{*}Sampling basis of LTPD 10% (n = 22, accept; 0 reject; 1)