

PIN DIODE

UM9401 SERIES
UM9402 SERIES
UM9415 SERIES

COMMERCIAL TWO-WAY RADIO ANTENNA SWITCH DIODES

Features

- Specified low distortion
- Unitrode ruggedness and reliability
- Low bias current requirements
- Priced for high quantity applications

MAXIMUM RATINGS

	UM9401	UM9402	UM9415
Reverse Voltage (V_R) — Volts ($I_R = 10 \mu A$)	50V	50V	50V

Average Power Dissipation (PA) Leads - 1/2 in. Overall to 25°C Heat Sink	5.5W	—	10W
25°C (Package Flange) Temperature Free Air	—	10W	—
	1.5W		2.5W

Operating and Storage Temperature Range	-65°C to +175°C
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NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

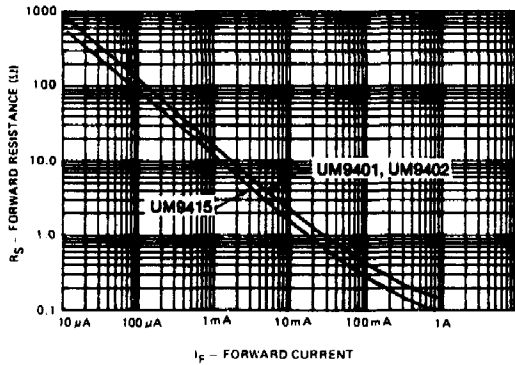
Quality Semi-Conductors

UM9401 UM9402 UM9415

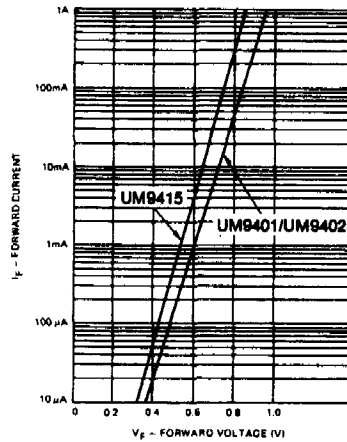
Electrical Specifications (at 25°C)

Test	Symbol	UM9401/UM9402			UM9415			Units	Conditions
		Min	Typ	Max	Min	Typ	Max		
Diode Resistance	R_S		0.75	1.0		0.75	1.0	Ω	$f = 100\text{MHz}$ typical $I = 50\text{ mA}$
Diode Capacitance	C_T		1.1	1.5			4	pF	$f = 100\text{ MHz}$ $V = 0\text{ V}$
Parallel Resistance	R_P	5K	10K		1K	2K		Ω	$f = 100\text{ MHz}$ $V = 0\text{ V}$
Carrier Lifetime	τ	1.0	2.0		5			μS	$I = 10\text{ mA}$
Transmit Harmonic Distortion	$\frac{R_{2A}}{A}, \frac{R_{3A}}{A}$			80			80	-dB	$P_{IN} = 50\text{ W}$ $f = 50\text{ MHz}, I = 50\text{ mA}$
Receive Third Order Distortion	$\frac{R_{2AB}}{A}$			60			60	-dB	$P_{IN} = 10\text{ mW}, 0\text{ V Bias}$ $f_A = 50\text{ MHz}, f_B = 51\text{ MHz}$
Reverse Leakage Current	I_R			10			10	μA	$V = 50\text{ V}$
Forward Voltage	V_F			1.0			1.0	V	$I_F = 50\text{ mA}$

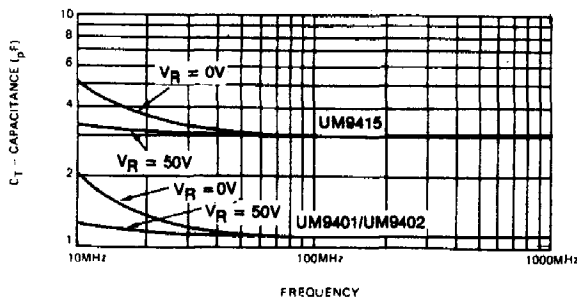
**TYPICAL FORWARD RESISTANCE
VS
FORWARD CURRENT
(F = 100 MHz)**



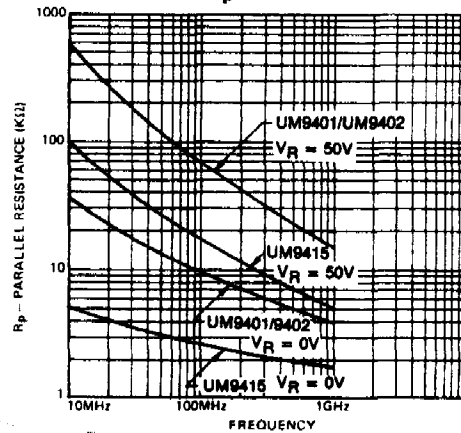
TYPICAL DC CHARACTERISTIC



TYPICAL CAPACITANCE CHARACTERISTIC



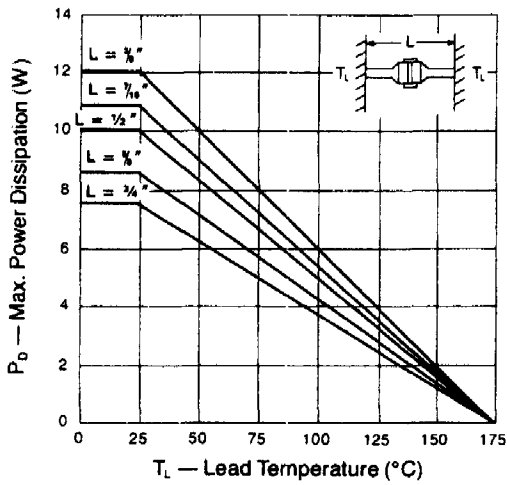
TYPICAL Rp CHARACTERISTICS



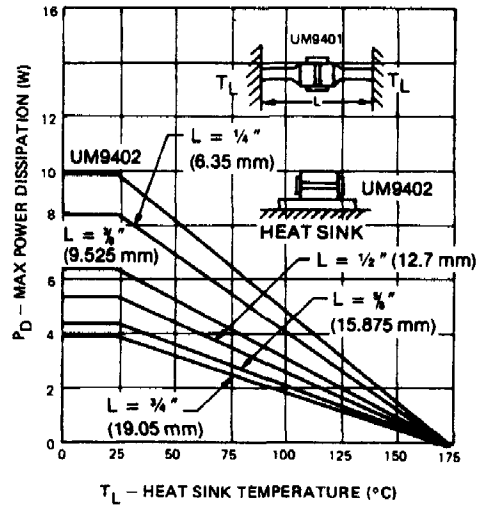
UM9401 UM9402 UM9415

MAXIMUM TRANSMITTER POWER

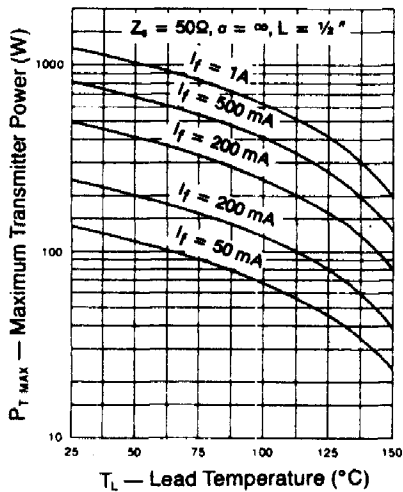
**POWER RATING
UM9415**



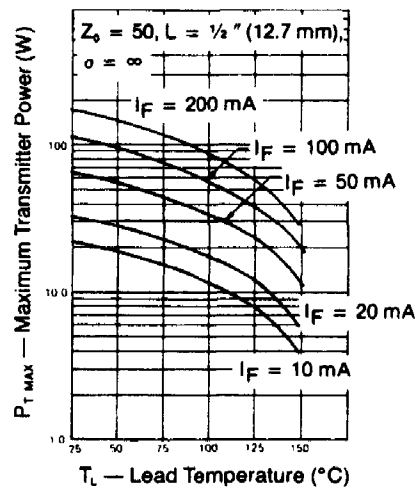
**POWER RATING
UM9401/9402**



UM9415



UM9401/UM9402



UM9401 UM9402 UM9415

