

## SMALL SIGNAL PIN DIODES

### FOR RF SWITCHING

- Low Series Resistance
- Low Capacitance
- Low Insertion Loss
- High Isolation

### FOR RF ATTENUATING

- Controlled Series Resistance
- Low Capacitance
- Low Distortion
- Wide Dynamic Range

### DESCRIPTION

These general purpose PIN diodes are intended for low power RF applications. Switching diodes are tailored for applications such as duplexers, antenna switching matrices, digital phase shifters, time multiplex filters, band switching, and TR or ATR switching. Attenuating diodes function as current controlled resistors when forward biased and are specified for use in control applications such as variable RF attenuators, automatic gain control circuits, RF modulators, analog phase shifters, RF limiters, and power levelers.

### PIN RF SWITCHING DIODES-ELECTRICAL SPECIFICATIONS at $T_A=25^\circ\text{C}$

| MODEL NUMBER | DIODE CAPACITANCE<br>$f = 1.0 \text{ MHz}$ |             | SERIES RESISTANCE<br>$f = 100 \text{ MHz}$ |              | EFFECTIVE MINORITY CARRIER LIFETIME<br>(nSec)<br>$I_F = 10 \text{ mAdc}$<br>$I_R = 50 \text{ mA}$ | $V_{BR}$ REVERSE BREAKDOWN VOLTAGE<br>$I_R = 10 \mu\text{Adc}$<br>(MIN) | REVERSE LEAKAGE CURRENT |             | FORWARD VOLTAGE |              | PACKAGE | CATHODE STRIPE |
|--------------|--|-------------|--|--------------|---|---|-------------------------|-------------|-----------------|--------------|---------|----------------|
|              | $C_T$ (pF)<br>TYP/MAX                      | $V_R$ (Vdc) | $R_S$ (Ohms)<br>TYP/MAX                    | $I_F$ (mAdc) |   |   | $I_R$ (nAdc)<br>(MAX)   | $V_R$ (Vdc) | $V_F$ (Vdc)     | $I_F$ (mAdc) |         |                |
| KS3542       | 0.8/1.2                                    | 3           | 0/6/0.7                                    | 3            | 100   | 35  | 100                     | 20          | 1.2             | 100          | DO-34   | BLACK          |
| KS3543       | 0.7/1.0                                    | 3           | 0.8/1.2                                    | 3            | 100   | 35  | 100                     | 20          | 1.2             | 100          | DO-34   | BLACK          |
| KS9301       | 0.17/0.25                                  | 50          | 0.85/1.0                                   | 100          | 100   | 200   | -                       | -           | 1.2             | 100          | 15      | SILVER         |
| KS9302       | 0.17/0.2                                   | 50          | 0.85/1.0                                   | 100          | 100   | 300   | -                       | -           | 1.2             | 100          | 15      | SILVER         |
| KS9339       | 0.21/0.25                                  | 50          | 0.85/1.25                                  | 100          | 100   | 150   | -                       | -           | 1.2             | 100          | 15      | SILVER         |
| KS9342       | 0.25/0.4                                   | 20          | 0.6/1.0                                    | 20           | 15  | 70  | -                       | -           | 1.2             | 100          | 15      | SILVER         |
| KS9343       | 0.25/0.4                                   | 20          | 0.6/1.0                                    | 20           | 15  | 50  | -                       | -           | 1.2             | 100          | 15      | SILVER         |
| KS9377       | 0.21/0.3                                   | 50          | 0.85/1.5                                   | 100          | 100   | 200   | -                       | -           | 1.2             | 100          | 15      | SILVER         |

### PIN RF ATTENUATING DIODES-ELECTRICAL SPECIFICATIONS $T_A = 25^\circ\text{C}$


| MODEL NUMBER | DIODE CAPACITANCE<br>$f = 1.0 \text{ MHz}$ |             | SERIES RESISTANCE $F = 100 \text{ MHz}$ |              |                         |              |                         |              | EFFECTIVE MINORITY CARRIER LIFETIME<br>$I_F = 50 \mu\text{Adc}$<br>$I_R = 250 \text{ mA}$<br>TYP | $V_{BR}$ REVERSE BREAKDOWN VOLTAGE<br>$I_R = 10 \text{ mAdc}$<br>MIN | REVERSE LEAKAGE CURRENT |             | FORWARD VOLTAGE |             | PACKAGE | CATHODE STRIPE |
|--------------|--|-------------|---|--------------|-------------------------|--------------|-------------------------|--------------|--|--|-------------------------|-------------|-----------------|-------------|---------|----------------|
|              | $C_T$ (pF)<br>TYP/MAX                      | $V_R$ (Vdc) | HIGH                                    |              | LOW                     |              | RESIDUAL                |              |  |  | $I_R$ (nAdc)<br>(MAX)   | $V_R$ (Vdc) | $I_F$ (mAdc)    | $V_F$ (Vdc) |         |                |
|              |  |             | $R_S$ (Ohms)<br>MIN/MAX                 | $I_F$ (mAdc) | $R_S$ (Ohms)<br>MIN/MAX | $I_F$ (mAdc) | $R_S$ (Ohms)<br>TYP/MAX | $I_F$ (mAdc) |  |  |                         |             |                 |             |         |                |
| KS8303       | 0.12/0.3                                   | 50          | 920/1380                                | 0.01         | 16/24                   | 1.0          | -/1.5                   | 100          | 0.1  | 100  | -                       | -           | -               | -           | 15      | SILVER         |
| KS8304       | 0.21/0.3                                   | 50          | 690/1040                                | 0.01         | 12/18                   | 1.0          | -/1.5                   | 100          | 0.1  | 100  | -                       | -           | -               | -           | 15      | SILVER         |
| IN5767       | 0.3/0.4                                    | 50          | 1000/2500T                              | 0.01         | 5T/8                    | 20           | 1.5/2.5                 | 100          | 1.0  | 100  | 1000                    | 50          | 1.0             | 100         | 15      | SILVER         |
| KS8380       | 0.3/0.4                                    | 50          | 1500/3000T                              | 0.01         | 5T/8                    | 20           | 1.5/2.5                 | 100          | -/1.3  | 100  | -                       | -           | -               | -           | 15      | SILVER         |
| KS8381       | 0.3/0.4                                    | 50          | 1500/3000T                              | 0.01         | 6T/8                    | 20           | 2/3.5                   | 100          | -/2.0  | 100  | -                       | -           | -               | -           | 15      | SILVER         |

### RATINGS

Operating Temperature:  $-55^\circ\text{C}$  to  $+150^\circ\text{C}$

Storage Temperature:  $-65^\circ\text{C}$  to  $+200^\circ\text{C}$

**narda**  
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