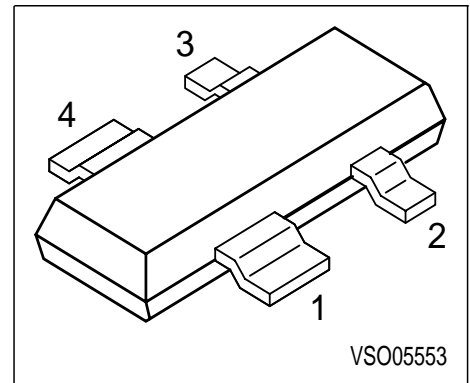


Silicon RF Switching Diode

- Design for use in shunt configuration
- High shunt signal isolation
- Low shunt insertion loss



| Type | Marking | Pin Configuration | | | | Package |
|-------|---------|-------------------|-------|-------|-------|---------|
| BAR80 | AAs | 1 = C | 2 = A | 3 = C | 4 = A | MW-4 |

Maximum Ratings

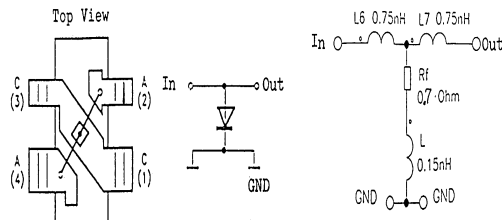
| Parameter | Symbol | Value | Unit |
|-----------------------------|-----------|-------------|------|
| Diode reverse voltage | V_R | 35 | V |
| Forward current | I_F | 100 | mA |
| Junction temperature | T_j | 150 | °C |
| Operating temperature range | T_{op} | -55 ... 125 | |
| Storage temperature | T_{stg} | -55 ... 150 | |

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

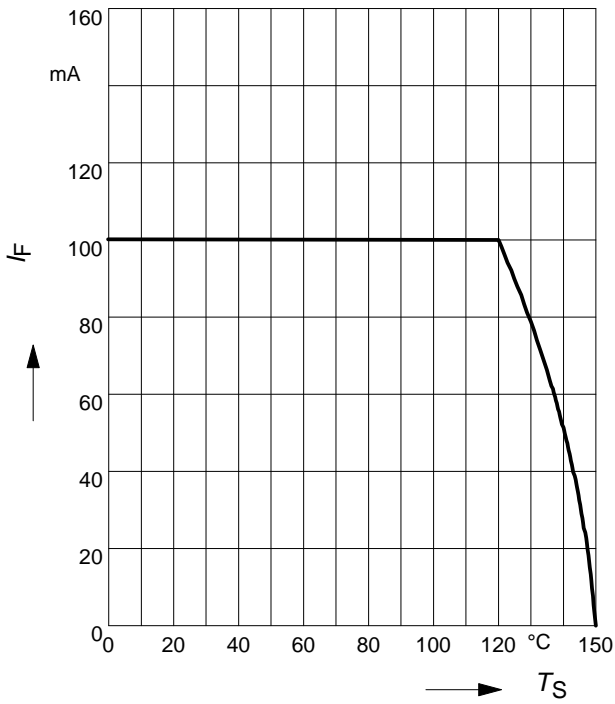
| Parameter | Symbol | Values | | | Unit |
|---|--------|----------|-----------|------------|----------|
| | | min. | typ. | max. | |
| DC characteristics | | | | | |
| Reverse current $V_R = 20\text{ V}$ | I_R | - | - | 20 | nA |
| Forward voltage $I_F = 100\text{ mA}$ | V_F | 0.8 | - | 1 | V |
| AC characteristics | | | | | |
| Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$ | C_T | - 0.6 | 1 0.92 | 1.6 1.3 | pF |
| Forward resistance $I_F = 5\text{ mA}, f = 100\text{ MHz}$ | r_f | - | 0.5 | 0.7 | Ω |
| Series inductance chip to ground | L_S | - | 0.14 | - | nH |
| Application information | | | | | |
| Shunt signal isolation $I_F = 10\text{ mA}, f = 2\text{ GHz}, R_G = R_L = 50\Omega$ | S_I | - | 23 | - | dB |
| Shunt insertion loss $V_R = 5\text{ V}, f = 2\text{ GHz}, R_G = R_L = 50\Omega$ | I_L | - | 0.15 | - | |

Configuration of the shunt-diode

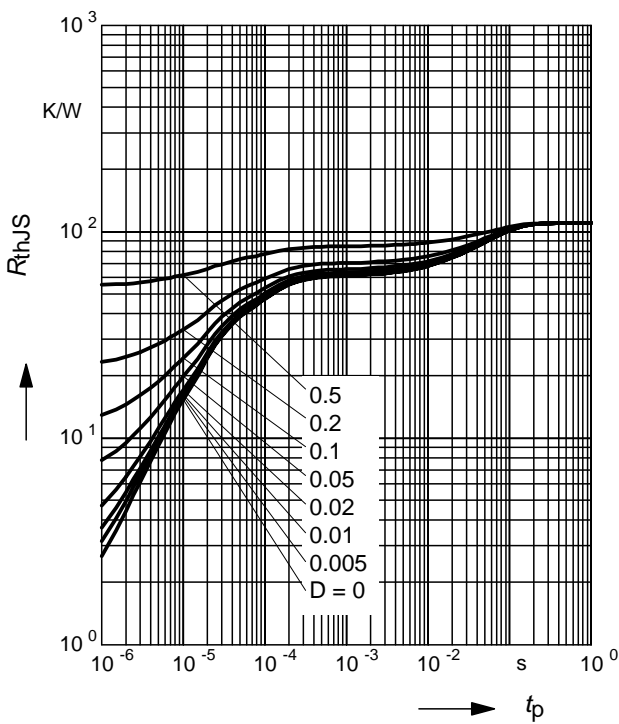
- A perfect ground is essential for optimum isolation
- The anode pins should be used as passage for RF



Forward current $I_F = f(T_S)$

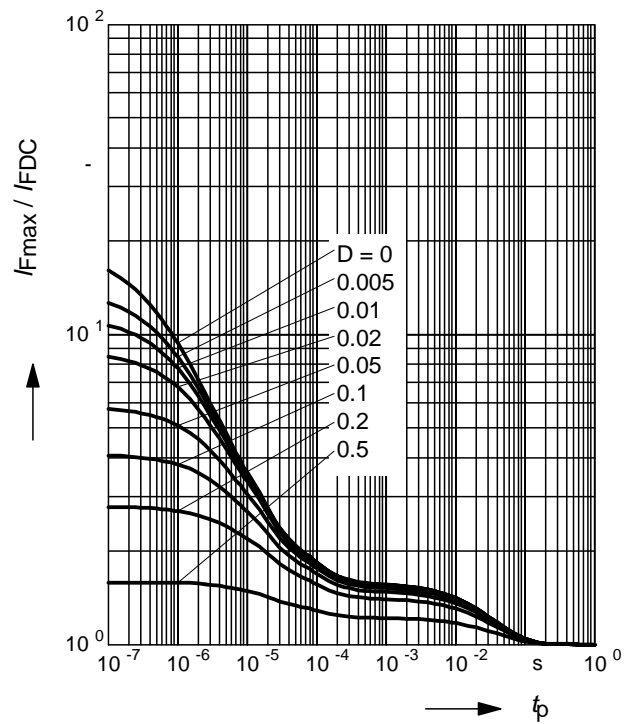


Permissible Pulse Load $R_{thJS} = f(t_p)$



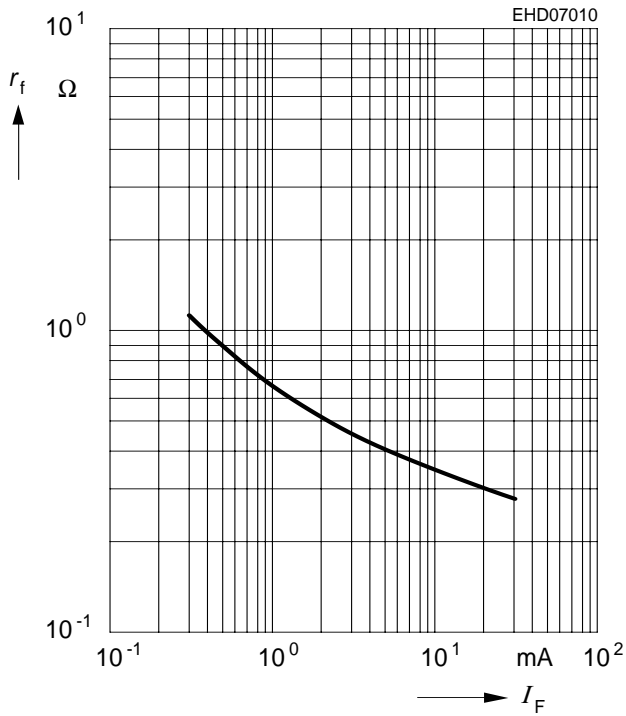
Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$



Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$



Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

