

Plastic package Surface Mount switching silicon PIN diodes



PLASTIC PACKAGE SURFACE MOUNT SWITCHING SILICON PIN DIODES

Description

TEMEX uses its proprietary technology to manufacture its Silicon PIN diodes in plastic package.

This product family is designed for a low cost, medium to high volume market that may be supplied in tape and reel for automated pick and place assembly on surface mount circuit boards. The use of this technology eliminates wire bonding on to the chips.

Applications

The DH50XXX series PIN diodes are offered in a large selection of capacitance range (.3 pF to 1.2 pF) and breakdown voltage (35 V to 200 V). They provide low loss (low series resistance), low switching time and low switching current.

TEMEX' diodes are designed to cover a broad range of CW low power (up to 2 W), medium peak power, RF and microwave applications (up to 3 GHz).

Main applications include: SPST and SPDT switches, antenna (Wireless Communication Systems) and filter switches, phase shifters

Note: To reduce the distortion, it is necessary to verify and design with the following formula:

$$\frac{\hat{I}_{HF}}{\pi\tau_1 I_{DC} F} \ll 1$$

- \hat{I}_{HF} : RF peak current (A)
- τ_1 : Diode minority carrier lifetime (s)
- I_{DC} : DC bias current (A)
- πF : Application frequency (Hz)

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Characteristics @ Ta = +25° C

PACKAGED DIODES				
	Breakdown voltage ($V_{BR}^{(1)}$)	Total capacitance ($C_T^{(2)}$)	Series resistance (R_{SF})	Minority carrier lifetime (τ_I)
Test conditions	$I_R = 10 \mu A$	$F = 1 \text{ MHz}$ $V_R = 50 \text{ V}$	$I_F = 10 \text{ mA}$ $F = 120 \text{ MHz}$	$I_F = 10 \text{ mA}$ $I_R = 6 \text{ mA}$
Type	V min.	pF max	Ω max	ns typ.
DH50051	35	0.3 ⁽³⁾	2.5 ⁽⁵⁾	150
DH50058	35	1 ⁽³⁾	0.5	200
DH50053	50	0.35 ⁽⁴⁾	1.5	200
DH50103	100	0.35	3	500
DH50109	100	1.2	0.6	1000
DH50203	200	0.35	3	500
DH50209	200	1.2	0.6	1000
DH80051	400	0.6	2	2000

(1) : Other breakdown values on request

 (4) : $V_R = 20 \text{ V}$ at $F = 1 \text{ MHz}$

(2) : Other capacitance values on request

 (5) : R_{SF} at $I_F = 5 \text{ mA}$

 (3) : $V_R = 5 \text{ V}$ at $F = 1 \text{ MHz}$
Temperature ranges:

 Operating junction (T_j) : -55° C to $+125^\circ \text{ C}$

 Storage : -55° C to $+150^\circ \text{ C}$
Packages

Packages	SOD323	SOT23	SOT23	SOT23	SOT143
DH50051	DH50051-60	DH50051-51	DH50051-53	DH50051-54	DH50051-70
DH50058	DH50058-60	DH50058-51	DH50058-53	DH50058-54	DH50058-70
DH50053	DH50053-60	DH50053-51	DH50053-53	DH50053-54	DH50053-70
DH50103	DH50103-60	DH50103-51	DH50103-53	DH50103-54	DH50103-70
DH50109	DH50109-60	DH50109-51	DH50109-53	DH50109-54	DH50109-70
DH50203	DH50203-60	DH50203-51	DH50203-53	DH50203-54	DH50103-70
DH50209	DH50209-60	DH50209-51	DH50209-53	DH50209-54	DH50209-70
DH80051	DH80051-60	DH80051-51	DH80051-53	DH80051-54	DH80051-70

(1) Other configuration available on request.

How to order?
