

SOT23 SURFACE MOUNT SWITCHING SILICON PIN DIODES

Features

- Low series resistance
- Low capacitance
- Fast switching diodes
- Surface mount package
- Tape and reel packaging available

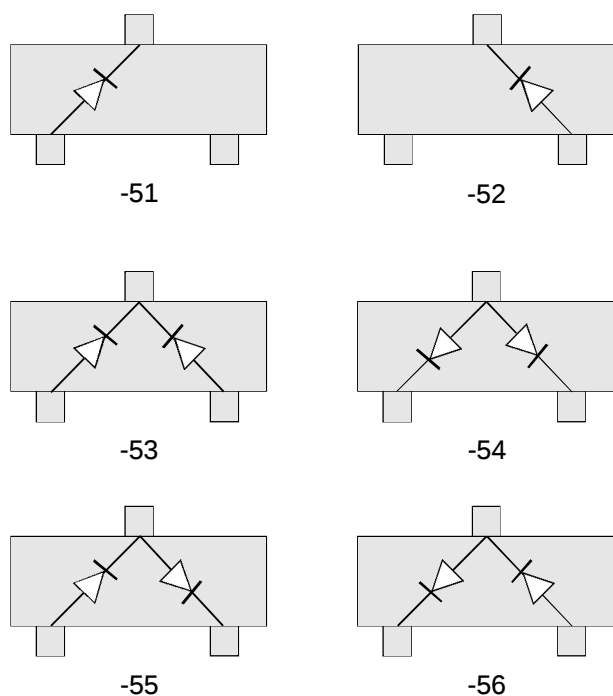
Description

TEKELEC TEMEX uses its proprietary technology to manufacture its Silicon PIN diodes in **SOT23**.

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 directly on to the chips.

Outline drawing



(Top view)

Applications

The DH50XXX series PIN diodes are offered in large selection of capacitance range (.30 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. TEKELEC TEMEX's components are designed to cover a broad range of CW low power (up to 2 W), medium peak power, RF and microwave applications (up to 3GHz).

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:

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

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

Nota: Other plastic packages available.

SALES OFFICES

WEB SITE: <http://www.tekelec-temex.com>

Electrical characteristics at 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 ⁽³⁾	V min	pF max	Ω max	ns typ.
DH50051-XX	35	0.3 ⁽⁵⁾	2.5 ⁽⁴⁾	150
DH50058-XX	35	1 ⁽⁵⁾	0.5	200
DH50053-XX	50	0.35 ⁽⁶⁾	1.5	200
DH50103-XX	100	0.35	3	1000
DH50109-XX	100	1.2	0.6	1000
DH50203-XX	200	0.35	3	1000

(1) : Other breakdown value on request

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

(2) : other capacitance values on request

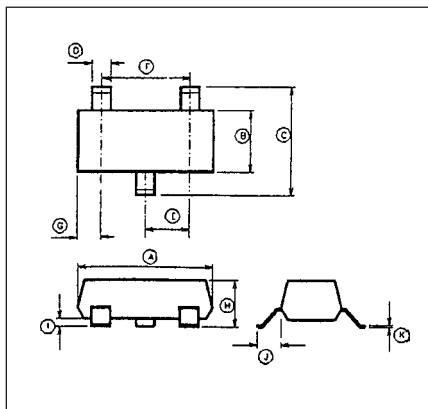
(5) : $V_R = 5 \text{ V}$ at $F = 1 \text{ MHz}$

(3) : -XX Digits for internal electrical configuration

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

Operating junction (T_j) : -55° C to +150° C

Storage : -65° C to +150° C

Case style


Symbol	min	max	min	max
	Millimeters	Millimeters	Inches	Inches
K	0.1	0.13	0.004	0.005
J	0.53	0.56	0.021	0.022
I	0.05	0.1	0.002	0.0004
H	1.07	1.14	0.042	0.045
G	0.43	0.46	0.017	0.018
F	1.78	2.04	0.070	0.080
E	0.94 typ.		0.037 typ.	
D	0.43	0.45	0.017	0.020
C	2.36	2.49	0.093	0.098
B	1.3	1.35	0.051	0.053
A	2.84	3.02	0.112	0.119