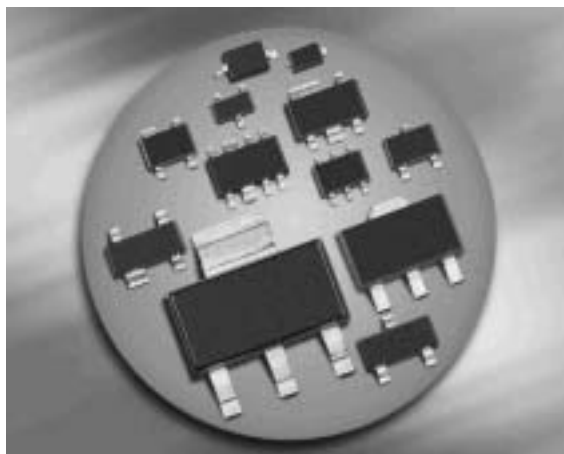


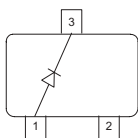
SMBD914/MMBD914...

TY Switching Diode

- For high-speed switching applications
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



SMBD914/MMBD914



Type	Package	Configuration	Marking
SMBD914/MMBD914	SOT23	single	s5D

Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	100	V
Peak reverse voltage	V_{RM}	100	
Forward current	I_F	250	mA
Non-repetitive peak surge forward current	I_{FSM}		A
$t = 1 \mu\text{s}$		4.5	
$t = 1 \text{s}$		0.5	
Total power dissipation $T_S \leq 54^\circ\text{C}$	P_{tot}	370	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ²⁾ SMBD914/MMBD914	R_{thJS}	≤ 260	K/W

¹⁾Pb-containing package may be available upon special request

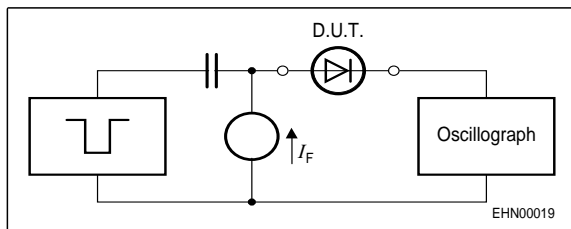
²⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

SMBD914/MMBD914...

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	100	-	-	V
Reverse current $V_R = 20 \text{ V}$ $V_R = 75 \text{ V}$ $V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$ $V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$	I_R	-	-	0.025 0.1 30 50	μA
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 150 \text{ mA}$	V_F	-	-	715 855 1000 1200 1250	mV
AC Characteristics					
Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	C_T	-	-	2	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}$, measured at $I_R = 1 \text{ mA}$, $R_L = 100 \Omega$	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time



Pulse generator: $t_p = 100\text{ns}$, $D = 0.05$, $t_r = 0.6\text{ns}$,
 $R_i = 50\Omega$

Oscilloscope: $R = 50\Omega$, $t_r = 0.35\text{ns}$, $C \leq 1\text{pF}$