

TPM2860C series datasheet

Schottky Detector Diodes

Description

- DNmicron's TPM2860C DC biased detector diodes are ideal for RF applications.
- This family of detector diodes are available in various package configurations, we assure that when two or more diodes are mounted into a single surface mount package, they are taken from adjacent sites on the wafer, assuring the highest possible degree of match.

Features

- Multiple packaging types: SOD-523, SOT-23, SOT-143
- High Detection Sensitivity
- Tape and Reel Options Available
- Lead-free
- Matched Diodes for Consistent Performance
- Better Thermal Conductivity for Higher Power Dissipation

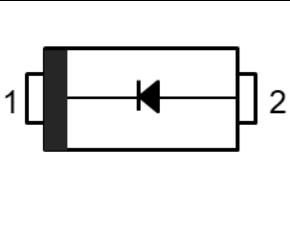
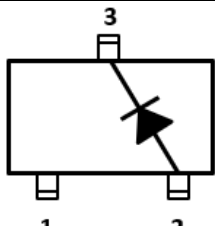
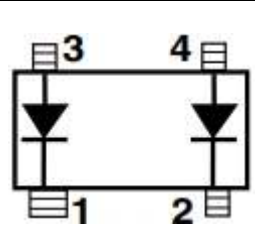
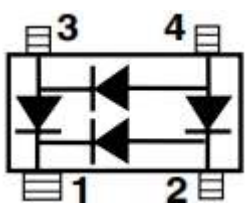
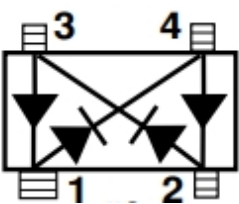


Observe precautions for handling electrostatic sensitive devices.

ESD Machine Model (Class A)

ESD Human Body Model (Class 0)

Package Lead Code Identification (top view)

TPM2860C -01 SOD-523	TPM2860C -02 SOT-23	TPM2860C -05 SOT-143
		
TPM2860C -08 SOT-143	TPM2860C -09 SOT-143	
		

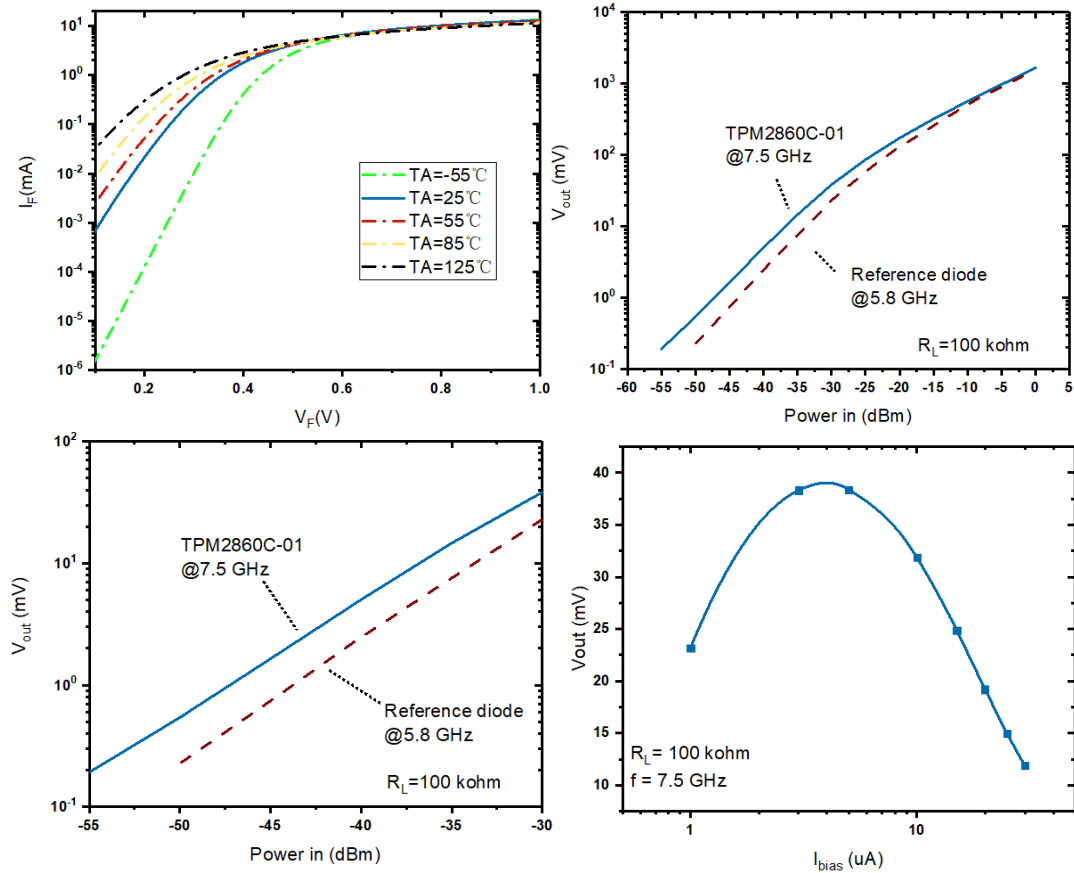
DC Electrical Specifications, $T_c = +25^\circ\text{C}$

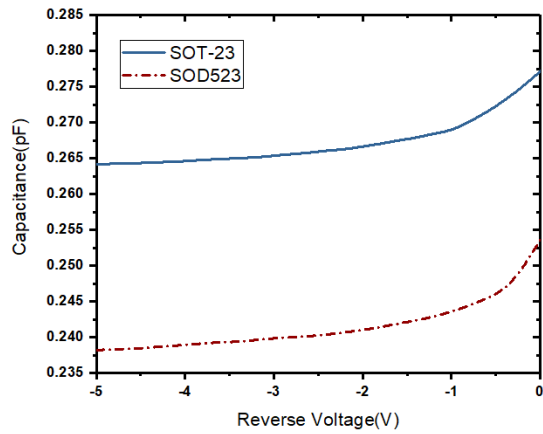
Parameter	Symbol	Test conditions	Typical performance
Breakdown voltage	V_{BD}	$I_R = -10 \mu\text{A}$	8 V max, 5 V min
Reverse current	I_R	$V_R = -3 \text{ V}$	900 nA max, 60 nA min
Forward voltage1	V_F	$I_F = 1 \text{ mA}$	350 mV
Forward voltage2	$V_{10\text{mA}}$	$I_F = 10 \text{ mA}$	0.8 V
Typical capacitance	C_T	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$	0.28 pF

RF Electrical Specifications, $T_c = +25^\circ\text{C}$

Parameter	Symbol	Test conditions ($f=7.5 \text{ GHz}$)	Typical performance
Voltage sensitivity	g	Power in = -30 dBm, $R_L = 100 \text{ k}\Omega$, $I_b = 3 \mu\text{A}$	32 mV/ μW
Video resistance	R_V	$I_b = 5 \mu\text{A}$	6.5 k Ω

Typical performance



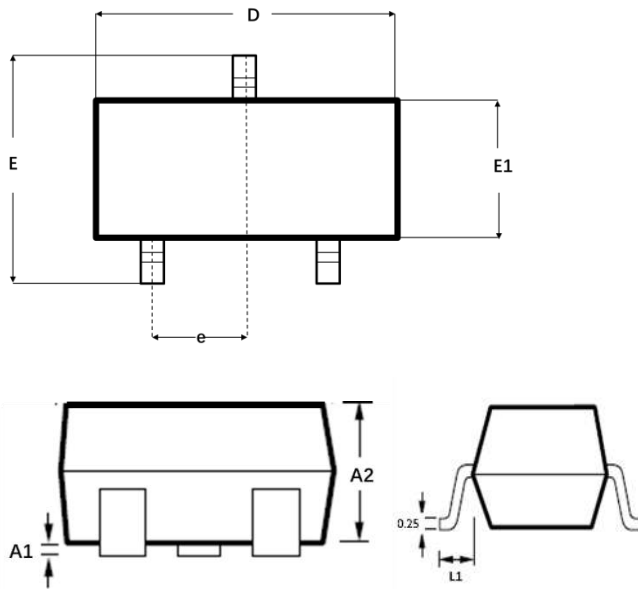


Typical Scattering Parameters (S11) (no DC bias, Power In = -30 dBm, T_c = +25°C)

Freq GHz	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4
MAG	0.992	0.998	0.998	0.997	0.996	0.998	0.997	0.998
PHASE	-14.5	-19.0	-21.8	-24.1	-25.6	-27.0	-29.8	-33.6
Freq GHz	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2
MAG	0.996	0.994	0.994	0.999	0.997	0.994	0.998	0.995
PHASE	-34.2	-37.4	-39.1	-40.8	-43.4	-45.9	-49.6	-49.2
Freq GHz	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3
MAG	0.999	0.998	0.996	0.993	0.999	0.998	0.992	0.999
PHASE	-54.4	-57.4	-58.0	-60.4	-64.6	-66.4	-70.1	-71.7
Freq GHz	3.1	3.2	3.3	3.4	3.5	3.6	3.7	
MAG	0.996	0.996	0.999	0.998	0.998	0.999	0.993	
PHASE	-74.0	-79.6	-80.9	-83.1	-86.6	-90.9	-93.5	

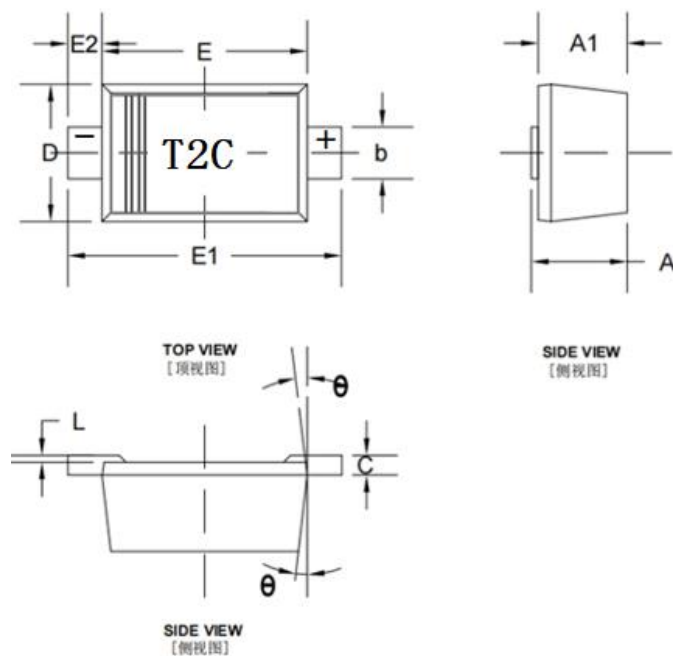
Package dimensions

SOT-23



Symbol	dimensions (mm)	
	Min	Max
A1	0.04	0.10
A2	1.00	1.20
D	2.82	3.02
E	2.60	3.00
E1	1.50	1.70
e	0.95BSC	
L1	0.60REF	

SOD-523



Symbol	dimensions (mm)		
	Min	Typ	Max
A	0.460	0.560	0.660
A1	0.450	0.550	0.650
b	0.250	0.300	0.350
c	0.080	0.115	0.150
D	0.750	0.800	0.850
E	1.100	1.200	1.300
E1	1.500	1.600	1.700
E2	0.200REF		
L	0.010	0.040	0.070

SOT-143

