

## 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

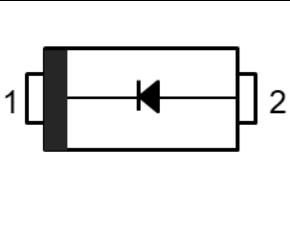
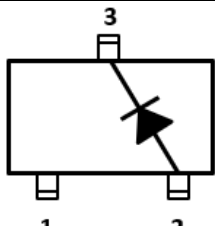
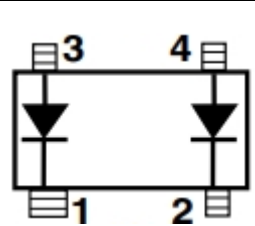
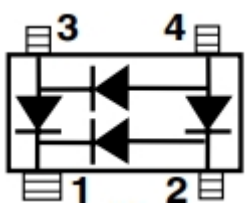
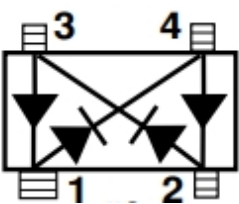


**Observe precautions for handling electrostatic sensitive devices.**

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	
		

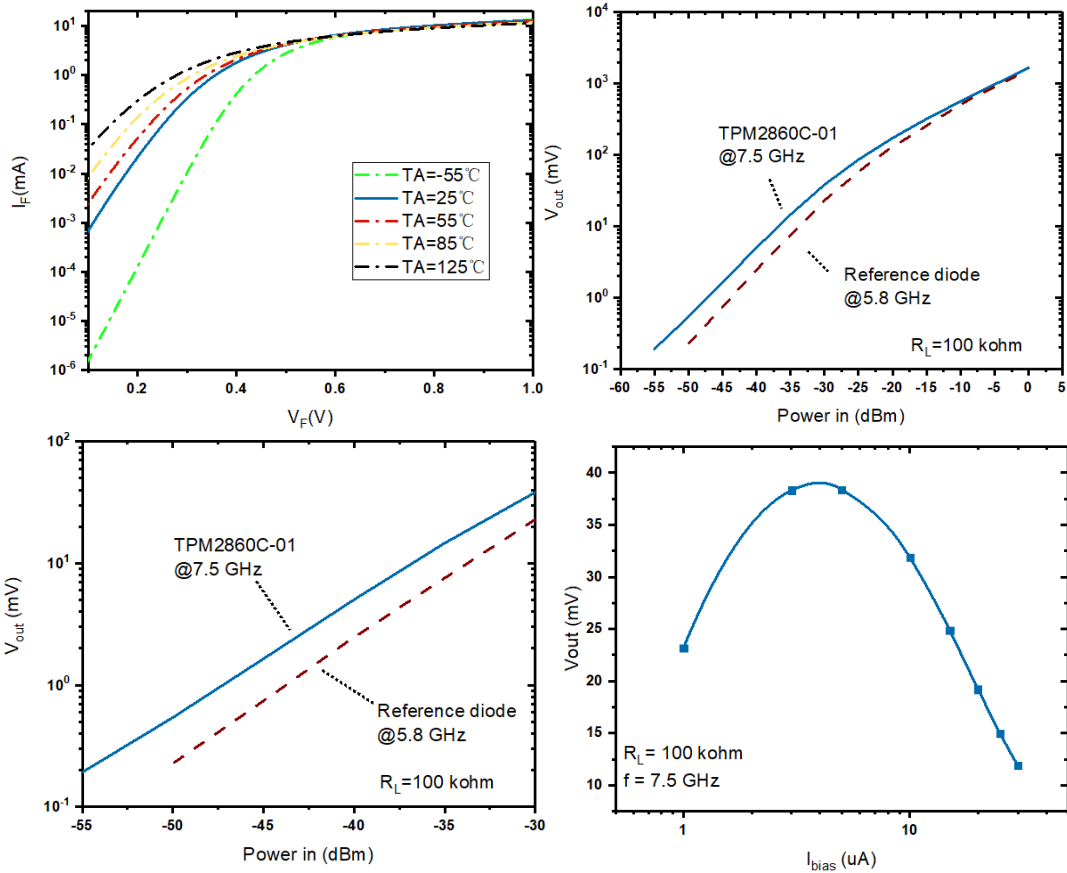
### DC Electrical Specifications, $T_c = +25^\circ\text{C}$

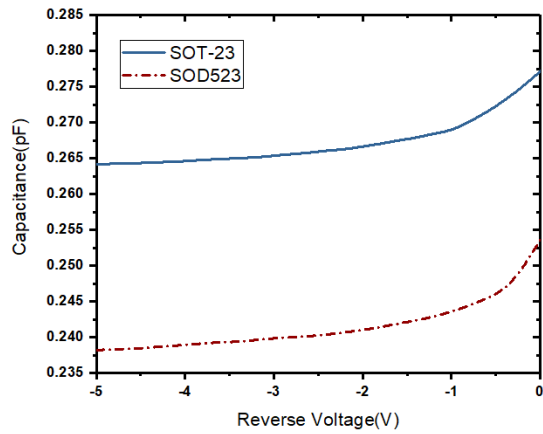
Parameter	Symbol	Test conditions	Typical performance
Breakdown voltage	$V_{BD}$	$I_R = -10 \mu\text{A}$	8 V max, 5 V min
Reverse current	$I_R$	$V_R = -3 \text{ V}$	900 nA max, 60 nA min
Forward voltage1	$V_F$	$I_F = 1 \text{ mA}$	350 mV
Forward voltage2	$V_{10\text{mA}}$	$I_F = 10 \text{ mA}$	0.8 V
Typical 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/ $\mu\text{W}$
Video resistance	$R_V$	$I_b = 5 \mu\text{A}$	6.5 k $\Omega$

### Typical performance



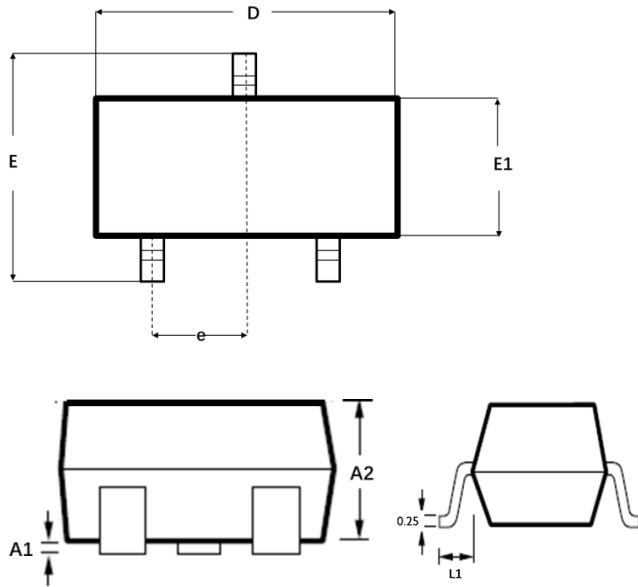


**Typical Scattering Parameters (S11) (no DC bias, Power In=-30 dBm, T<sub>c</sub>=+25°C)**

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	

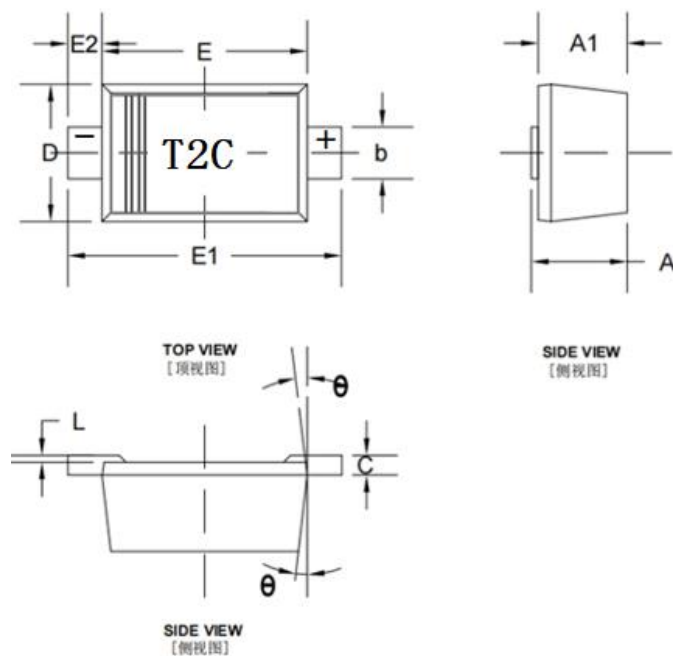
## Package dimensions

### 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

