

Variable Capacitance SMD® Diodes

Description

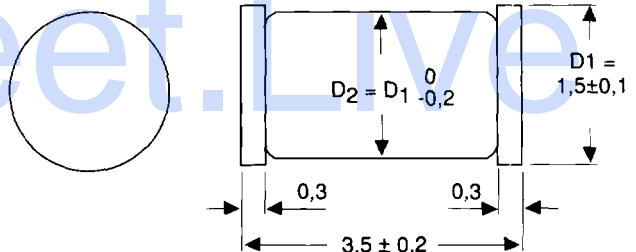
Philips Components variable capacitance (varicap) diodes are optimized to exhibit linear, highly dependable dynamic capacitance characteristics over the entire rated range of reverse voltage values. The devices also have very low series resistance and can be used in all AM, FM, VHF and UHF circuits where tuning is required. They are offered in a choice of surface mount packages, providing the designer with alternatives for different power requirements, circuit board substrate materials, and assembly processing techniques.

Features

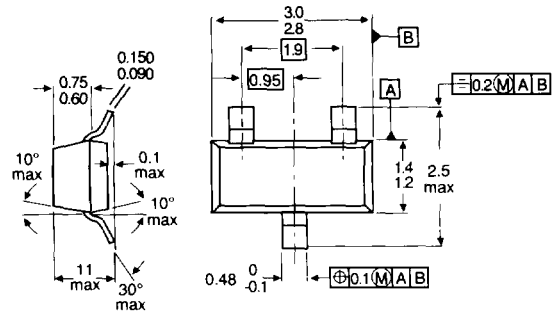
- Guaranteed minimum and maximum capacitance ratio over working voltage range
- Operating reverse voltage ranges from 0.5V to 28V
- Typical series resistance as low as 0.2Ω
- Dual diodes in SOT-23 and SOT-143
- SOD-80C using "Implosion" technology for low cost, hermetic glass packaging.

Mechanical Data

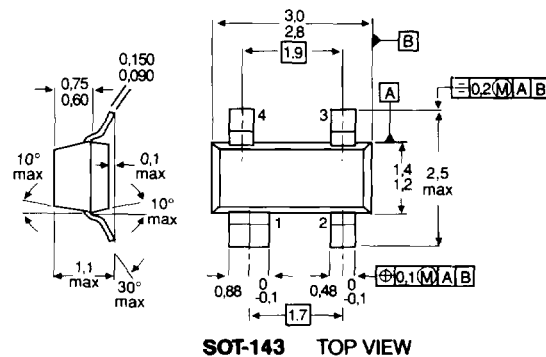
(Dimensions in mm)



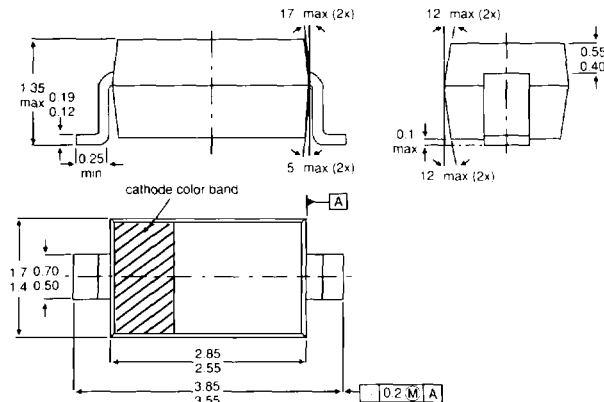
SOD-80C



SOT-23 TOP VIEW



SOT-143 TOP VIEW



SOD-123

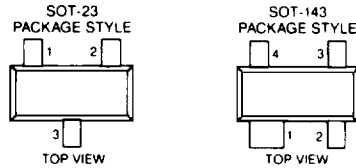
Electrical Specifications

Type	Package	Ratings		C _d at V _R		C _d Ratio f = 1 MHz				r _s Max. Ω	Pinout
		V _R V	I _F mA	pF	V	Min.	Typ.	Max.	@ V ₁ /V ₂		
BB215	SOD-80C	30	20	18 Min.	1	7.6	—	—	1/28	—	—
BB219	SOD-80C	30	20	31 Min.	1	12	—	—	1/28	—	—
BB240	SOD-80C	32	20	2.3-2.7	28	14	—	—	0.5/28	1.0	—
BB241	SOD-80C	32	20	2.6-3.0	28	21	—	—	0.5/28	2.0	—
BB249	SOD-80C	28	20	4.0-5.0	28	8	—	10	1/28	0.6	—
BB515	SOD-123	—	—	1.85-2.25	28	8	—	9.6	1/28	0.5 typ.	—
BB619	SOD-123	—	—	2.4-2.9	28	12.5	—	—	1/28	0.7 typ.	—
BB620	SOD-123	—	—	2.9-3.4	28	19.5	—	25	1/28	1.3	—
BB804	SOT-23	18	50	44.5 typ.	2	1.65	—	1.75	2/8	0.2	L
BB811	SOD-123	—	—	0.85-1.2	28	7.8	—	9.5	1/28	1.0 typ.	—
BBY31	SOT-23	28	20	1.8-2.8	25	—	5	—	3/25	1.2	H
BBY39*	SOT-23	30	20	1.8-2.0	28	7.6	—	—	1/28	0.8	M
BBY40	SOT-23	28	20	4.3-6	25	5	—	5.6	3/25	0.6	H
BBY42	SOT-23	32	50	31 Min.	1	12	—	16	1/28	1.2	H
BBY62*	SOT-143	30	50	17.5 typ.	1	—	5	—	3/25	1.0	J

*Dual diode

Pinout Diagrams

	PIN 1	PIN 2	PIN 3	PIN 4
PINOUT H: SOT-23	N.C.	A	K	—
PINOUT J: SOT-143	K ₁	K ₂	A ₂	A ₁
PINOUT L: SOT-23	K ₁	K ₂	K ₁ , K ₂	—
PINOUT M: SOT-23	A ₁	K ₂	K ₁ , A ₂	—



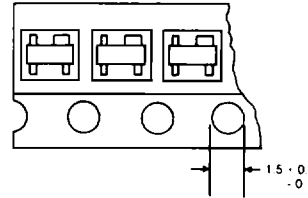
Type No.	Code	Type No.	Code	Type No.	Code
BB804	S3p	BBY39	S12	BBY42	S13
BBY31	S1p	BBY40	S2p	BBY62	S3p

*See individual device data sheet

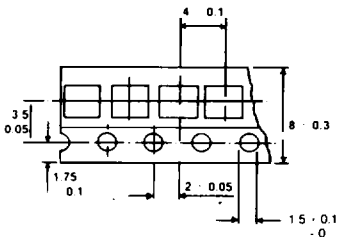
Tape and Reel Specifications

(Dimensions in mm)

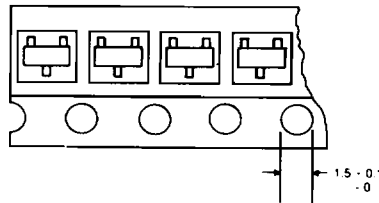
SM Package	Devices per Reel	Reel Size (in)	Tape Width (mm)	Ordering Suffix
SOT-23	3K	7	8	TRL
	10K	13	8	TRL 13
SOT-143	3K	7	8	TRL
	10K	13	8	TRL 13
SOD-80C	2.5K	7	8	TRL
	10K	13	8	TRL 13



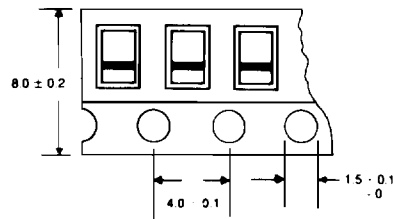
SOT-143 Orientation



SOD-23 and SOT-143 Tape Dimensions



SOT-23 Orientation



SOD-80C Tape Dimensions and Orientation