



HY432

THREE TERMINAL REGULATORS IC

DESCRIPTION

The HY432 is a three-terminal Shunt Voltage Reference providing a highly accurate 1.24V. The HY432 thermal stability and wide operating current, makes it suitable for all variety of applications that are looking for a low cost solution with high performance.

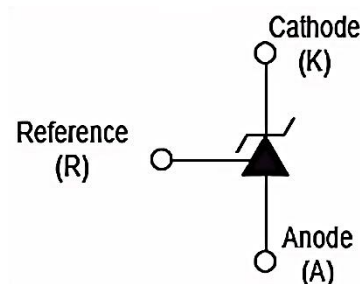
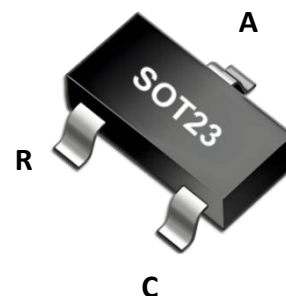
The HY432 meet the ROHS and Green Product requirement with full function reliability approved.

FEATURES

- * Low dynamic output impedance
- * The effective temperature compensation in the working range of full temperature
- * Low output noise voltage
- * Fast on-state response
- * Sink current capability of 0.1mA to 100mA

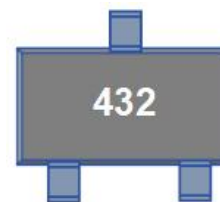
APPLICATION

- * Shunt Regulator
- * High-Current Shunt Regulator
- * Precision Current Limiter



MARKING

Type Code: Marking: 432



ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
VKA	Cathode Voltage	18	V
IKA	Cathode Current Range (Continuous)	100	mA
Iref	Reference Input Current Range	3	mA
PD	Power Dissipation	350	mW
TJ	Operating Junction Temperature Range	-40~125	°C
TSTG	Storage Temperature Range	-65~150	°C
RθJA	Thermal Resistance from Junction to Ambient	357	°C/W



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■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference input voltage(Fig 1)	Vref	VKA=VREF, IKA=10mA	1.2214		1.2586	V
Deviation of reference input voltage over temperature(Fig 1)	Vref(dev)	VKA =VREF, IKA =10mA 0°C ≤ Ta ≤ 70°C		10	16	mV
Ratio of change in reference Input voltage to the change in cathode voltag(Fig 2)	$\Delta V_{ref} / \Delta V_{KA}$	IKA=10mA $\Delta V_{KA}=1.25V \sim 15V$		1	2.4	mV/V
Reference input current	Iref	IKA= 10mA,R1=10KΩ R2=∞		0.25	0.5	μA
Deviation of reference input current over full temperature range(Fig 2)	Iref(dev)	IKA=10mA, R1=10KΩ,R2=∞ TA=0°C to 70°C		0.1	0.6	μA
Minimum cathode current for regulation (Fig 1)	IKA(min)	VKA=VREF		0.06	0.1	mA
Off-state cathode current(Fig 3)	IKA(OFF)	VKA=15V ,VREF=0		0.05	0.5	μA
Dynamic impedance	ZKA	VKA=VREF, IKA=0.1 to 20mA f ≤ 1KHz		0.2	0.5	Ω

CLASSIFICATION OF Vref

Rank	1%	1.5%
Range	1.2276-1.2524	1.2214-1.2586

■ TEST CIRCUITS AND WAVEFORMS

Figure 1. Test Circuit for $V_{KA} = V_{ref}$

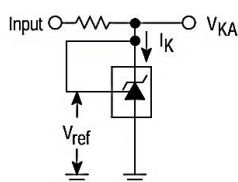


Figure 2. Test Circuit for $V_{KA} > V_{ref}$

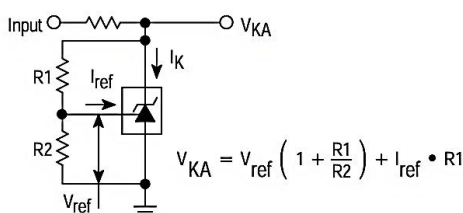
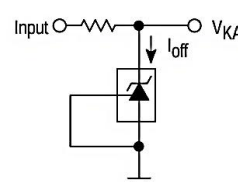


Figure 3. Test Circuit for I_{off}



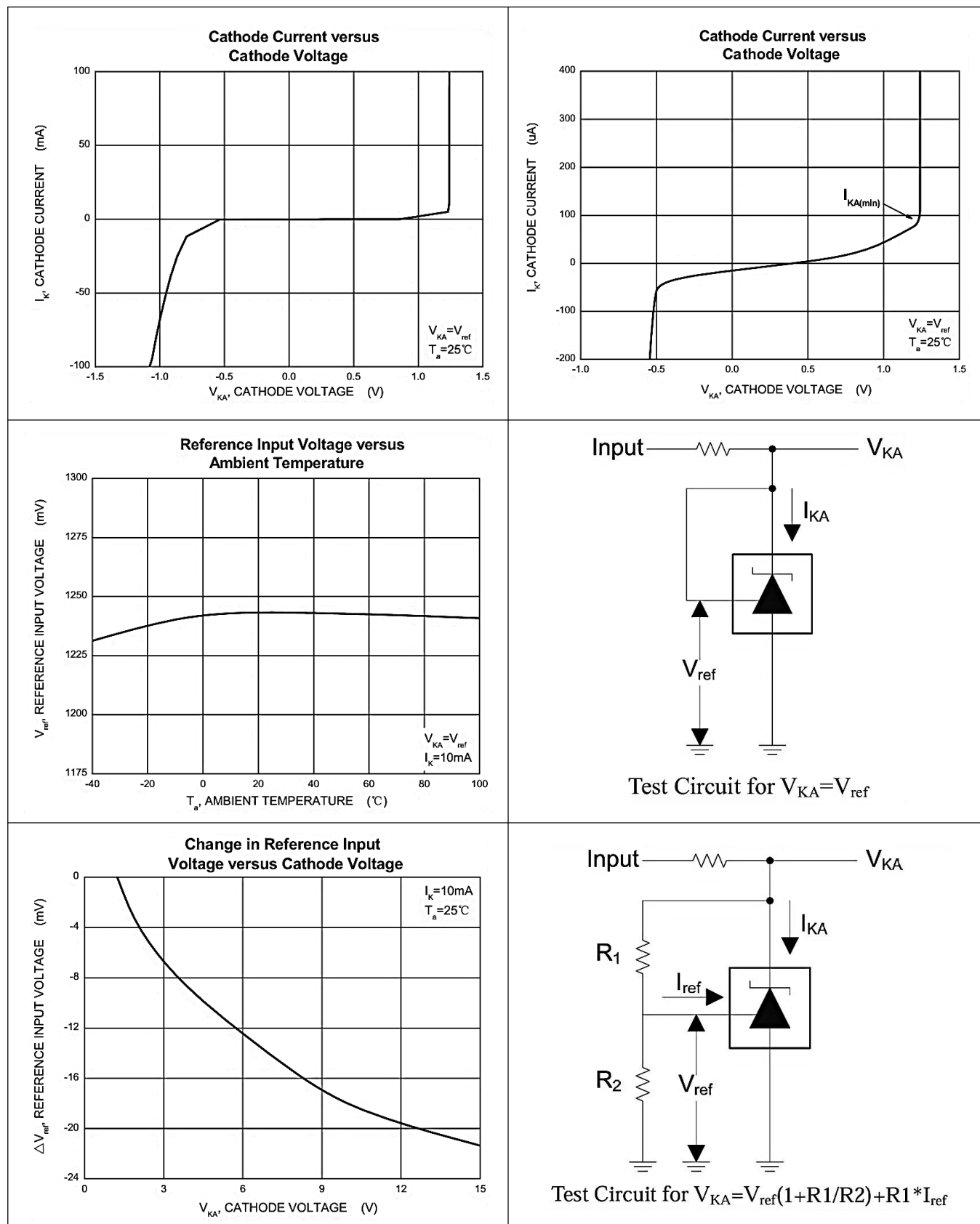
NOTE: It is recommended to connect a capacitor(value more than 0.1μF) at the output pin to smooth the output. The capacitor should be placed as close as possible to the output pin, with the shortest path to GND.



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■ TYPICAL CHARACTERISTICS(1)

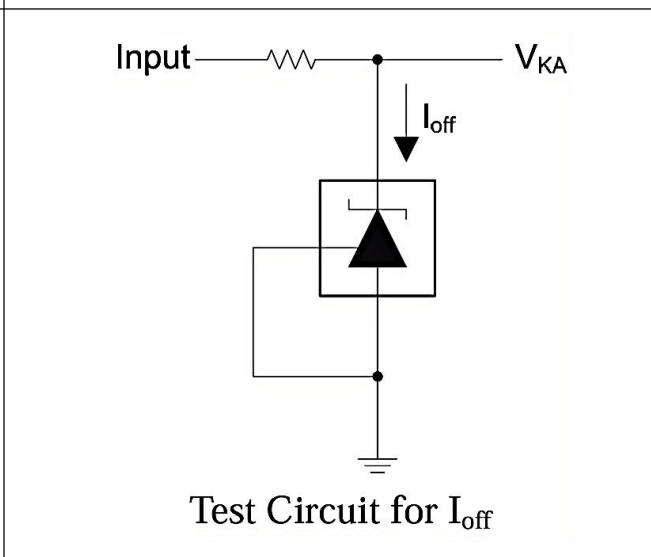
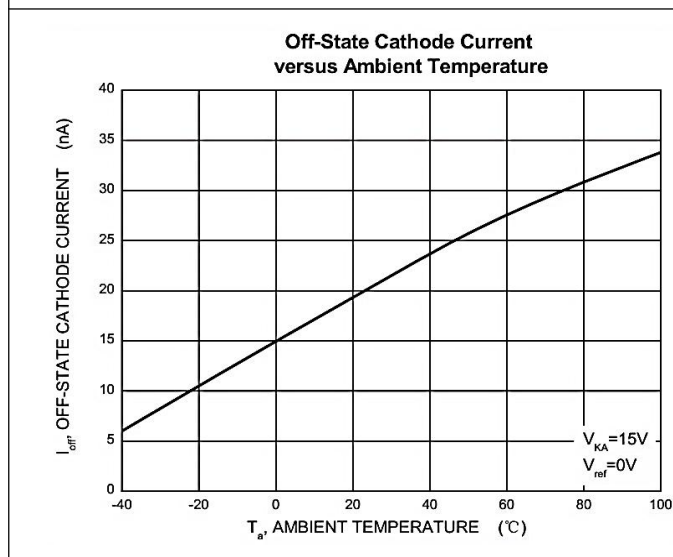
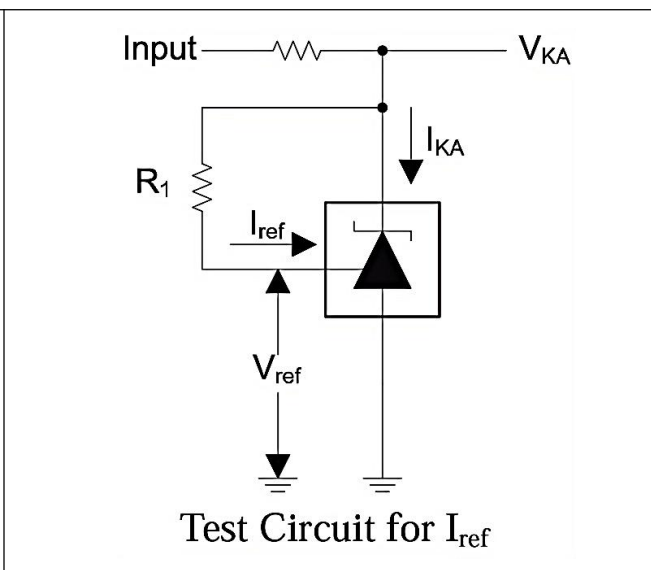
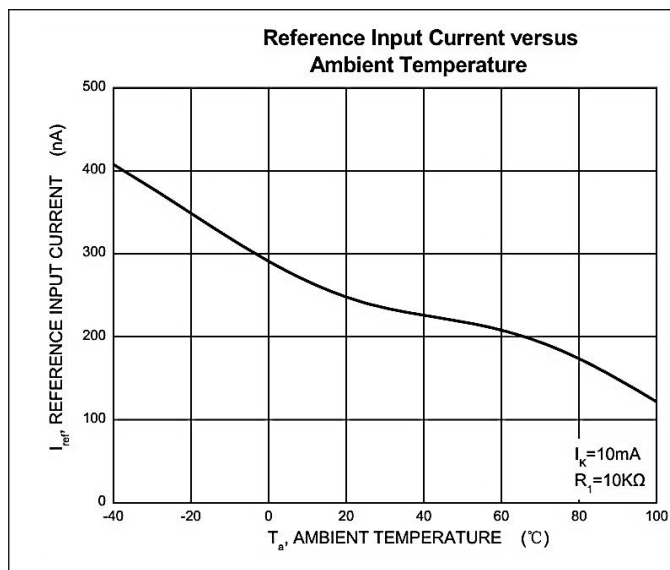




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■ TYPICAL CHARACTERISTICS(2)

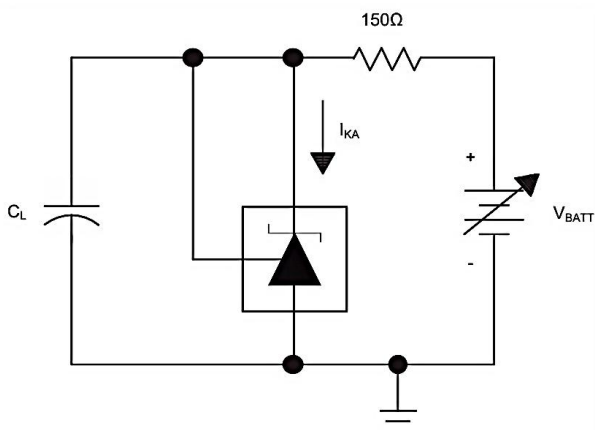
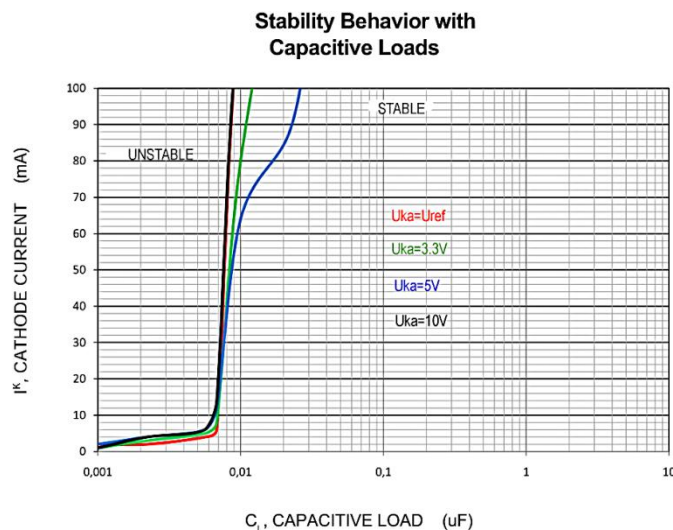




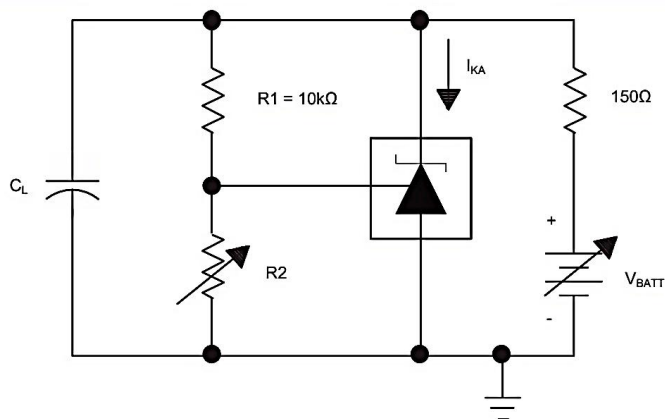
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■ TYPICAL CHARACTERISTICS(Con.t)



Test Circuit for Curve $U_{ka} = U_{ref}$



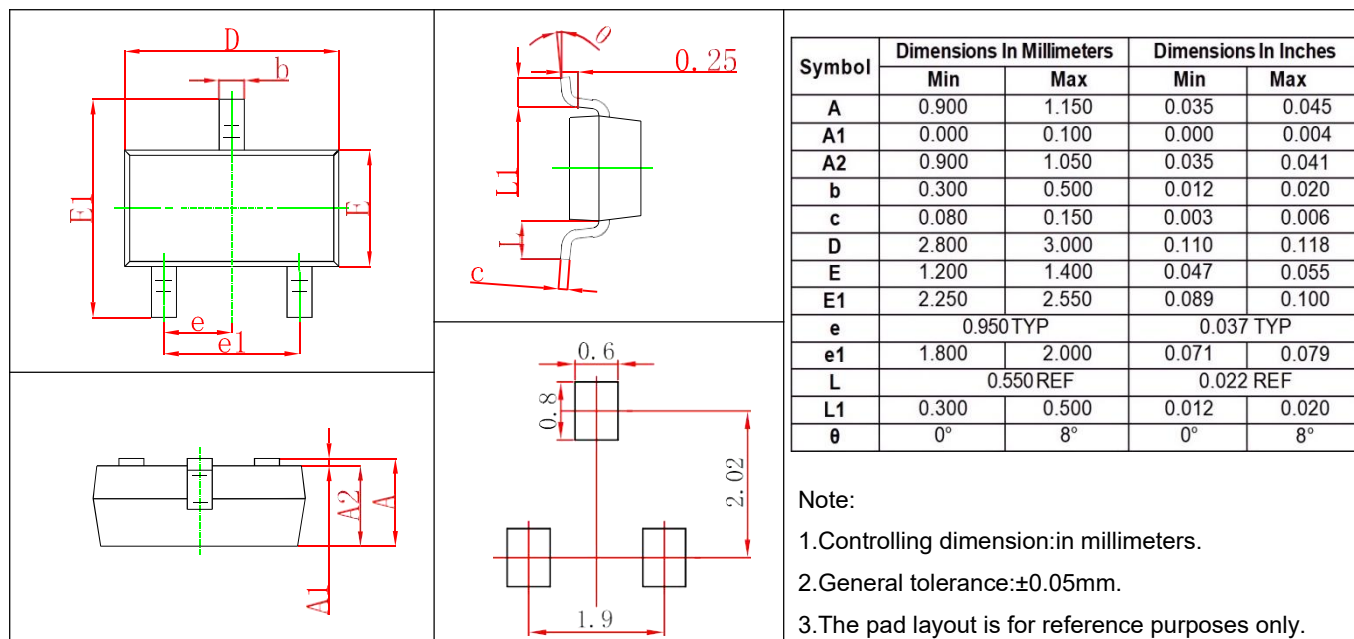
Test Circuit for Curve $U_{ka} = 3.3V$, $U_{ka} = 5V$ and $U_{ka} = 10V$



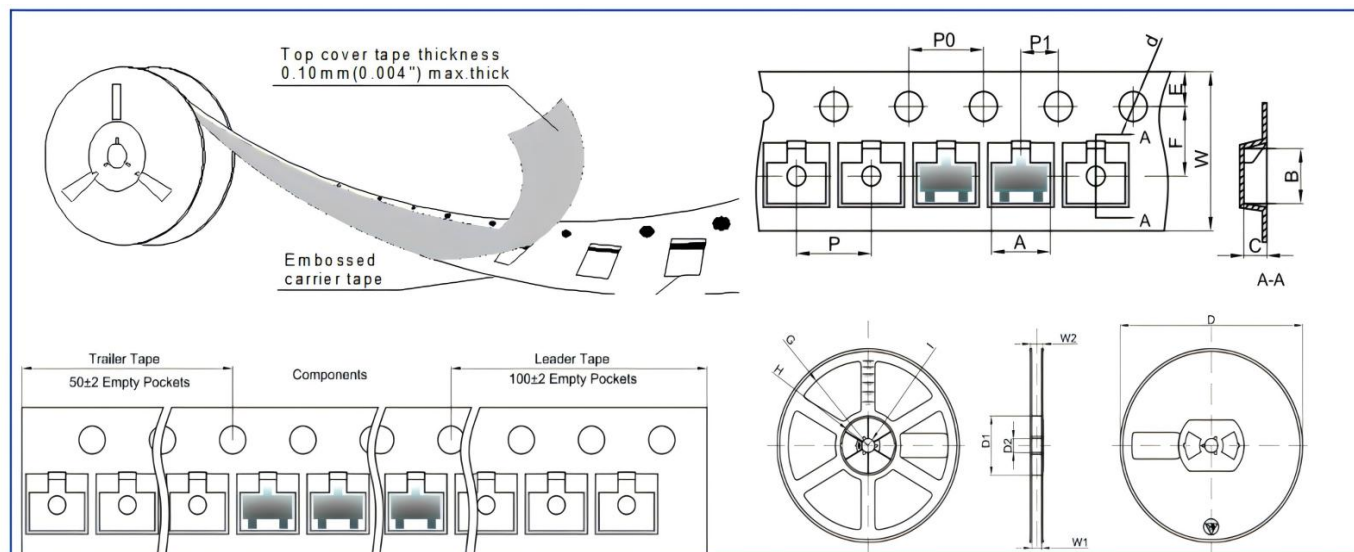
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SOT23 PACKAGE OUTLINE DIMENSIONS



REEL PACKING



Dimensions are in millimeter

PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.15	2.77	1.22	Φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
Reel Option	D	D1	D2	G	H	I	W1	W2	Q.TY PER REEL	
7" Dia	Φ178.0	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30	3000PCS	
13" Dia	Φ330.0	/	13.00	/	/	R6.50	9.50	12.30	10000PCS	