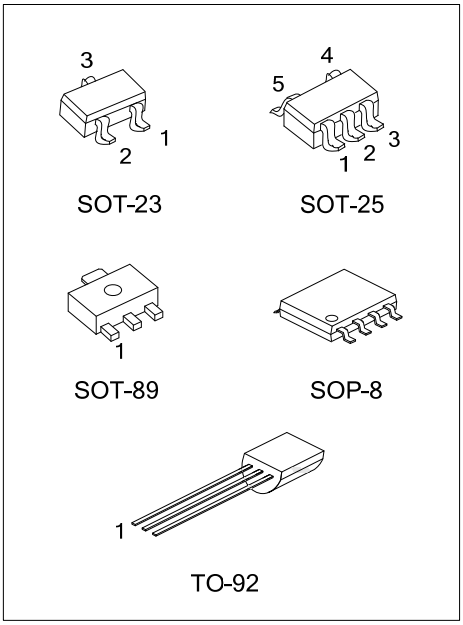
1.25V PRECISION ADJUSTABLE SHUNT REFERENCE REGULATORS



■ DESCRIPTION

The UTC **TL432** is a three-terminal adjustable shunt regulator highly accurate 1.25V band gap reference with 0.5%, 1% tolerance. The device offers thermal stability, wide operating current (50mA) and an extended temperature range of 0° to 105°C for operation in power supply applications. The UTC **TL432** offers a wide operating voltage range of up to 12V and is an excellent choice for voltage reference requirements in an isolated feedback circuit for 3.0V ~ 3.3V switching mode power supplies. The tight tolerance guarantees a lower design cost for the power supply manufacturer by virtually eliminating the need for an extra power supply manufacturing process of the power supply.

■ FEATURES

*Temperature-Compensated:50ppm/°C
*Internal Amplifier with 50mA Capability
*Nominal Temperature Range Extended to 105°C
*Low Frequency Dynamic Output Impedance:<150Ω
*Low Output Noise

■ ORDERING INFORMATION

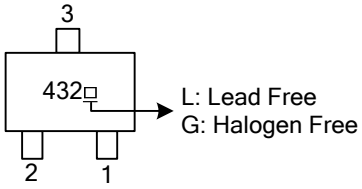
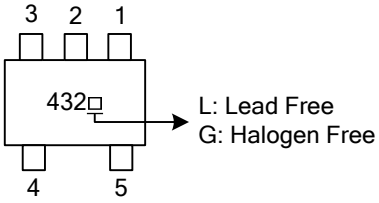
Ordering Number			Pin Assignment								Package	Packing
Normal	Lead Free	Halogen Free	1	2	3	4	5	6	7	8		
TL432-AB3-R	TL432L-AB3-R	TL432G-AB3-R	R	A	K	-	-	-	-	-	SOT-89	Tape Reel
TL432-AE3-R	TL432L-AE3-R	TL432G-AE3-R	K	R	A	-	-	-	-	-	SOT-23	Tape Reel
TL432-AF5-R	TL432L-AF5-R	TL432G-AF5-R	X	X	K	R	A	-	-	-	SOT-25	Tape Reel
TL432-T92-B	TL432L-T92-B	TL432G-T92-B	R	A	K	-	-	-	-	-	TO-92	Tape Box
TL432-T92-K	TL432L-T92-K	TL432G-T92-K	R	A	K	-	-	-	-	-	TO-92	Bulk
TL432-S08-R	TL432L-S08-R	TL432G-S08-R	K	A	A	X	X	A	A	R	SOP-8	Tape Reel

Note: Pin Code: C: Cathode A: Anode R: Reference X: No Connection

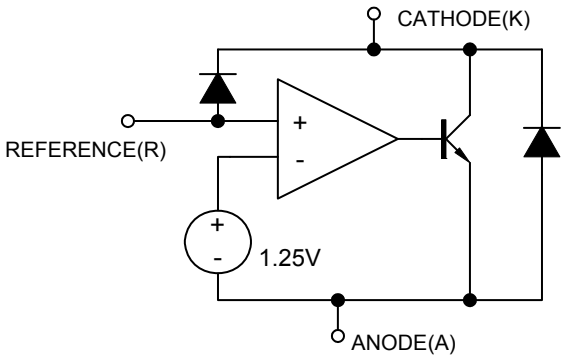
TL432L-AB3-R
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) B: Tape Box, K: Bulk, R: Tape Reel
(2) AB3: SOT-89, AE3: SOT-23, AF5: SOT-25, S08:SOP-8, T92: TO-92
(3) G: Halogen Free, L: Lead Free Plating, Blank: Pb/Sn

■ MARKING INFORMATION

PACKAGE	MARKING
SOT-23	
SOT-25	

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Cathode-Anode Reverse Breakdown	V_{KA}	15	V
Anode-Cathode Forward Current	I_{AK}	1	A
Operating Cathode Current	I_{KA}	50	mA
Reference Input Current	I_{REF}	1	mA
Junction Temperature	T_J	+125	°C
Operating Temperature	T_{OPR}	-20 ~ +85	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Cathode Voltage	V_{KA}	V_{REF}		15	V
Cathode Current	I_K	5	10		mA

■ THERMAL DATA

PARAMETER		SYMBOL	RATING	UNIT
Junction to Ambient	SOT-23/SOT-25	θ_{JA}	350	°C/W
	TO-92		100	°C/W
	SOP-8		150	°C/W
	SOT-89		220	°C/W

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, V_{KA}=V_{REF}, I_K=10mA, unless otherwise specified.)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Refer Input Voltage	0.5%	V_{REF}	I_K=10mA, V_K=V_{REF}	1.243	1.250	1.256	V
	1%			1.237	1.250	1.263	V
Line Regulation		ΔV_{REF}	V_K=1.25 ~ 15V		10	26	mV
Load Regulation		ΔV_{REF}	I_K=5 ~ 50mA		6	15	mV
Temperature Deviation		ΔV_{REF}	0<T_J<105°C		2	6	mV
Reference Input Current		I_{REF}			3	6	μA
Reference Input Current Temperature Coefficient		ΔI_{REF}	0<T_J<105°C		0.3	0.6	μA
Minimum Cathode Current for Regulation		$I_{K(MIN)}$			0.6	1	mA
Off State Leakage		$I_{KA(OFF)}$	V_{REF}=0V,V_{KA}=15V			500	nA