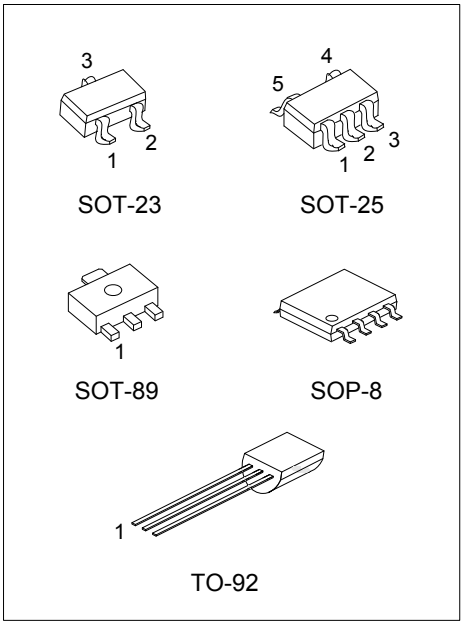
TL432D

LINEAR INTEGRATED CIRCUIT

0.8V PRECISION ADJUSTABLE SHUNT REFERENCE REGULATORS



■ DESCRIPTION

The UTC **TL432D** is a three-terminal adjustable shunt regulator highly accurate 0.8V band gap reference with 1%, 2% 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 **TL432D** 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:<150mΩ
* Low Output Noise

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
TL432DL-AB3-R	TL432DG-AB3-R	SOT-89	R	A	K	-	-	-	-	-	Tape Reel
TL432DL-AE3-R	TL432DG-AE3-R	SOT-23	R	K	A	-	-	-	-	-	Tape Reel
TL432DL-AF5-R	TL432DG-AF5-R	SOT-25	X	X	K	R	A	-	-	-	Tape Reel
TL432DL-T92-B	TL432DG-T92-B	TO-92	R	A	K	-	-	-	-	-	Tape Box
TL432DL-T92-K	TL432DG-T92-K	TO-92	R	A	K	-	-	-	-	-	Bulk
TL432DL-S08-R	TL432DG-S08-R	SOP-8	K	A	A	X	X	A	A	R	Tape Reel

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

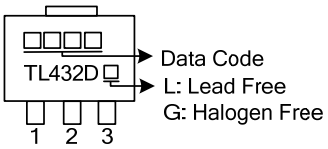
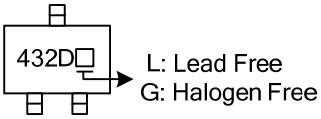
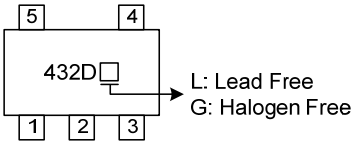
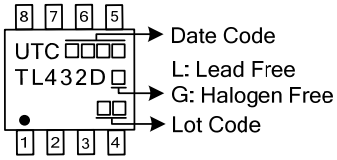
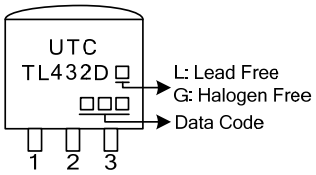
TL432DG-AB3-R
(1) Packing Type
(2) Package Type
(3) Green Package

(1) R: Tape Reel, B: Tape Box, K: Bulk

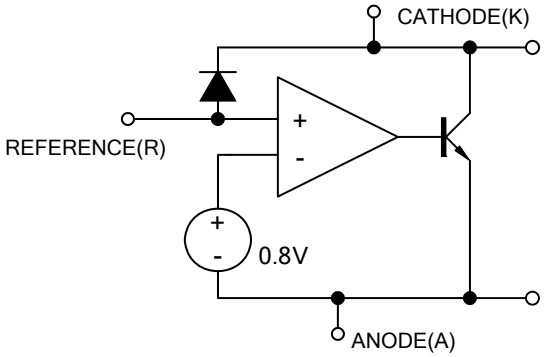
(2) AB3: SOT-89, AE3: SOT-23, AF5: SOT-25, S08: SOP-8, T92: TO-92

(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

PACKAGE	MARKING
SOT-89	
SOT-23	
SOT-25	
SOP-8	
TO-92	

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Cathode-Anode Reverse Breakdown	V_{KA}	15	V
Operating Cathode Current	I_{KA}	50	mA
Reference Input Current	I_{REF}	1	mA
Junction Temperature	T_J	125	°C
Operating Temperature	T_{OPR}	-40 ~ +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
Reference Input Voltage	TL432D-1	V_{REF}	I_K=10mA, V_K=V_{REF}	0.792	0.80	0.808	V
	TL432D-2			0.784	0.80	0.816	V
Line Regulation		ΔV_{REF}	V_K=0.8 ~ 15V		10	15	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