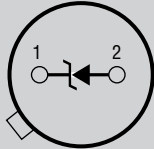
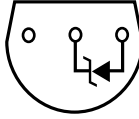
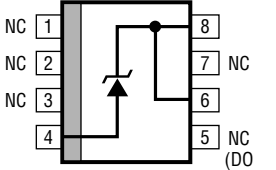


LM185-1.2/
LM285-1.2/LM385-1.2

ABSOLUTE MAXIMUM RATINGS

Operating Temperature Range	Storage Temperature Range	–65°C to 150°C
LM185-1.2(OBSOLETE)	Lead Temperature (Soldering, 10 sec)	300°C
LM285-1.2	Reverse Breakdown Current	30mA
LM385-1.2	Forward Current	10mA

PACKAGE/ORDER INFORMATION

BOTTOM VIEW  H PACKAGE 2-LEAD TO-46 METAL CAN $T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 440^{\circ}C/W$, $\theta_{JC} = 80^{\circ}C/W$ (NOTE 3) OBSOLETE PACKAGE Consider the S8 or Z Packages for Alternate Source	ORDER PART NUMBER LM185H-1.2 LM285H-1.2 LM385H-1.2 LM385BH-1.2	BOTTOM VIEW  Z PACKAGE 3-LEAD PLASTIC TO-92 $T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 160^{\circ}C/W$ (NOTE 3)	ORDER PART NUMBER LM285Z-1.2 LM385Z-1.2 LM385BZ-1.2
TOP VIEW  S8 PACKAGE 8-LEAD PLASTIC SO $T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 190^{\circ}C/W$			ORDER PART NUMBER LM385BS8-1.2 LM385S8-1.2
			S8 PART MARKING 3851 3851B

Consult LTC Marketing for parts specified with wider operating temperature ranges.

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$. For the LM185-1.2 $T_{\text{MIN}} = -55^\circ\text{C}$ and $T_{\text{MAX}} = 125^\circ\text{C}$. For LM285-1.2 $T_{\text{MIN}} = -40^\circ\text{C}$ and $T_{\text{MAX}} = 85^\circ\text{C}$. For LM385-1.2 $T_{\text{MIN}} = 0^\circ\text{C}$ and $T_{\text{MAX}} = 70^\circ\text{C}$. For MIL-STD components, please refer to LTC883C data sheet for test listing and parameters.

SYMBOL	PARAMETER	CONDITIONS	LM185-1.2/LM285-1.2			LM385-1.2/LM385B-1.2			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
V_Z	Reverse Breakdown Voltage	$T_A = 25^\circ\text{C}$, $I_{\text{MIN}} \leq I_R \leq 20\text{mA}$ LM185-1.2 LM385-1.2 LM385B-1.2 (Note 3)	1.223	1.235	1.247	1.205 1.223	1.235 1.235	1.260 1.247	V V V
$\frac{\Delta V_Z}{\Delta \text{Temp}}$	Average Temperature Coefficient	$I_{\text{MIN}} \leq I_R \leq 20\text{mA}$ (Notes 2, 3)	20			20			ppm/ $^\circ\text{C}$
I_{MIN}	Minimum Operating Current	$T_{\text{MIN}} \leq T_A \leq T_{\text{MAX}}$	●	8	10	8	15		μA
$\frac{\Delta V_Z}{\Delta I_R}$	Reverse Breakdown Voltage Change with Current	$I_{\text{MIN}} \leq I_R \leq 1\text{mA}$ $T_A = 25^\circ\text{C}$ $T_{\text{MIN}} \leq T_A \leq T_{\text{MAX}}$			1 1.5			1 1.5	mV mV
		$1\text{mA} \leq I_R \leq 20\text{mA}$ $T_A = 25^\circ\text{C}$ $T_{\text{MIN}} \leq T_A \leq T_{\text{MAX}}$			10 20			10 25	mV mV
r_Z	Reverse Dynamic Impedance	$I_R = 100\mu\text{A}$ $T_A = 25^\circ\text{C}$ $T_{\text{MIN}} \leq T_A \leq T_{\text{MAX}}$	●	0.2	0.6 1.5	0.4	1.0 1.5		Ω Ω
e_n	Wideband Noise (RMS)	$I_R = 100\mu\text{A}$, $10\text{Hz} \leq f \leq 10\text{kHz}$		60		60			μV
$\frac{\Delta V_Z}{\Delta \text{Time}}$	Long Term Stability	$I_R = 100\mu\text{A}$, $T_A = 25^\circ\text{C} \pm 0.1^\circ\text{C}$		20		20			ppm/kHr

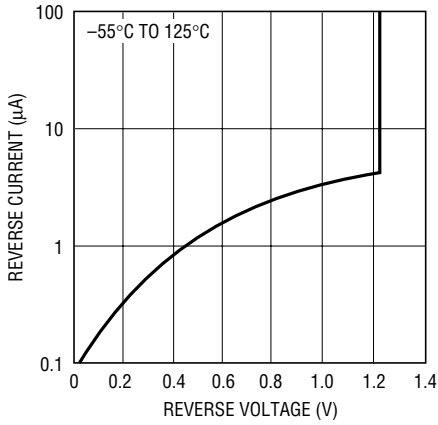
Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: Selected devices with guaranteed maximum temperature coefficient are available upon request.

Note 3: For applications requiring low initial tolerance guaranteed over temperature consult the LT1004 data sheet.

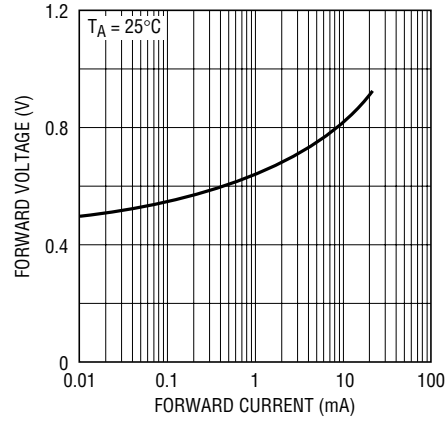
TYPICAL PERFORMANCE CHARACTERISTICS

Reverse Characteristics



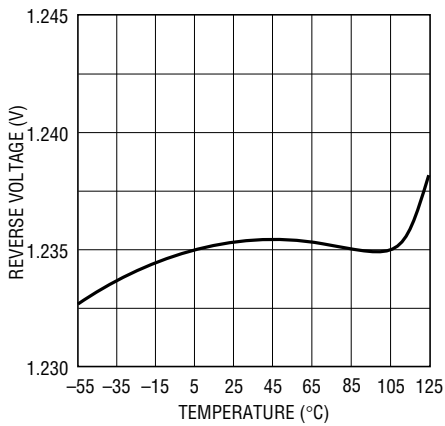
185/285/385 G01

Forward Characteristics



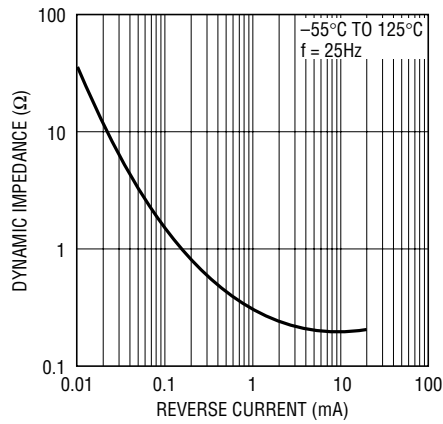
185/285/385 G02

Temperature Drift



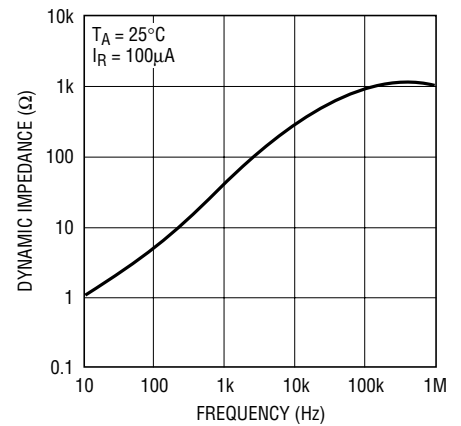
185/285/385 G03

Reverse Dynamic Impedance



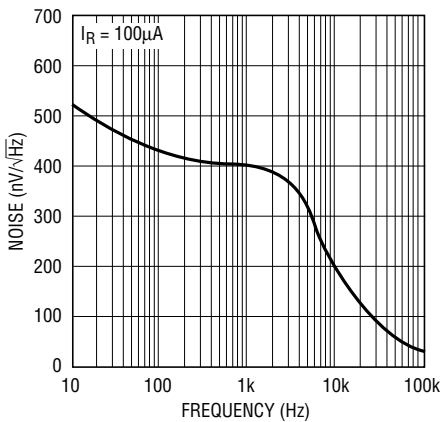
185/285/385 G04

Reverse Dynamic Impedance



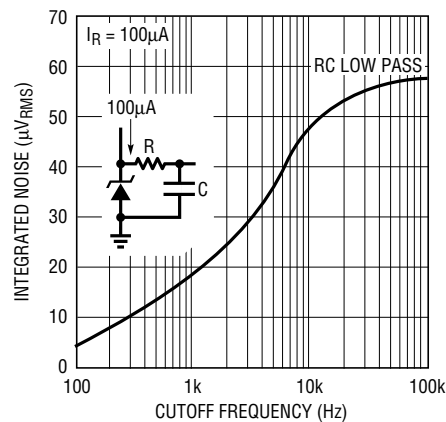
185/285/385 G05

Noise Voltage



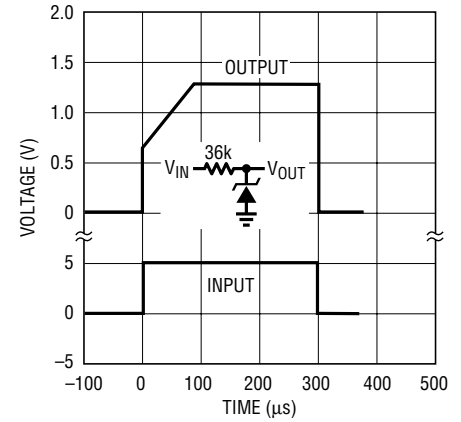
185/285/385 G06

Filtered Output Noise



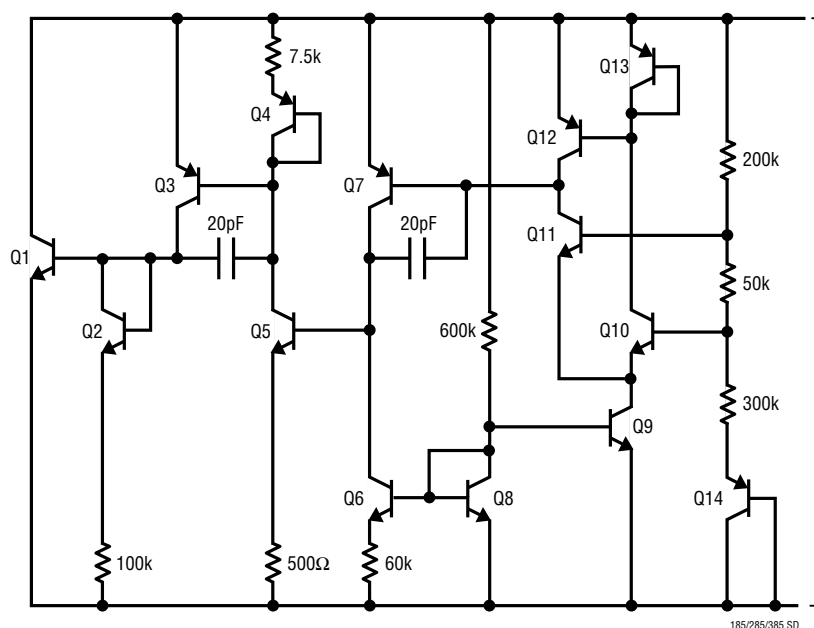
185/285/385 G07

Response Time



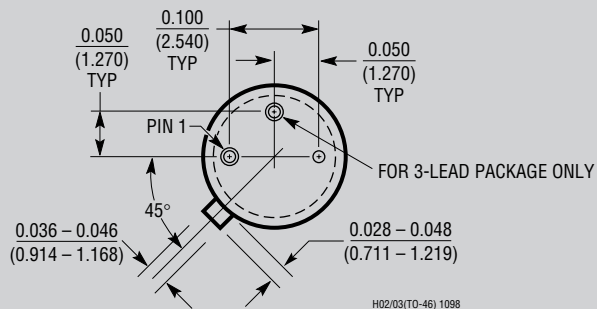
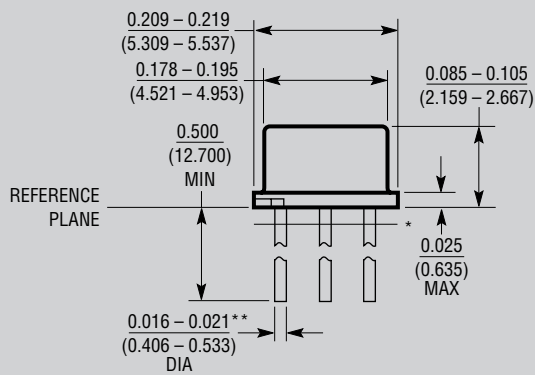
185/285/385 G08

SCHEMATIC DIAGRAM



PACKAGE DESCRIPTION

(Reference LTC DWG # 05-08-1340)

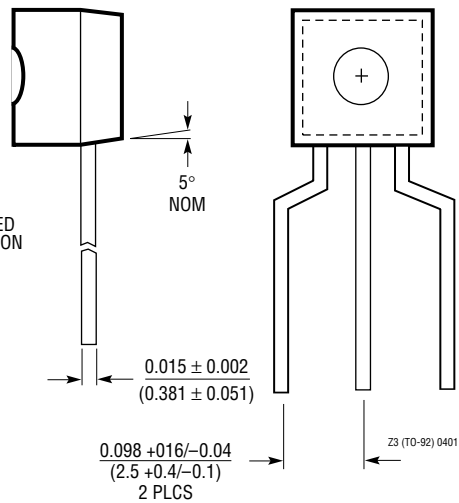
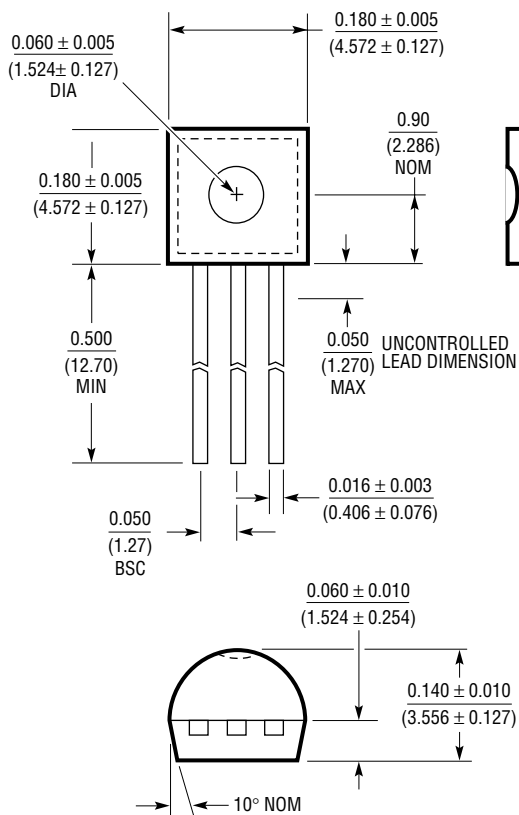


*LEAD DIAMETER IS UNCONTROLLED BETWEEN THE REFERENCE PLANE AND 0.045" BELOW THE REFERENCE PLANE

**FOR SOLDER DIP LEAD FINISH, LEAD DIAMETER IS $\frac{0.016 - 0.024}{(0.406 - 0.610)}$

OBSOLETE PACKAGE

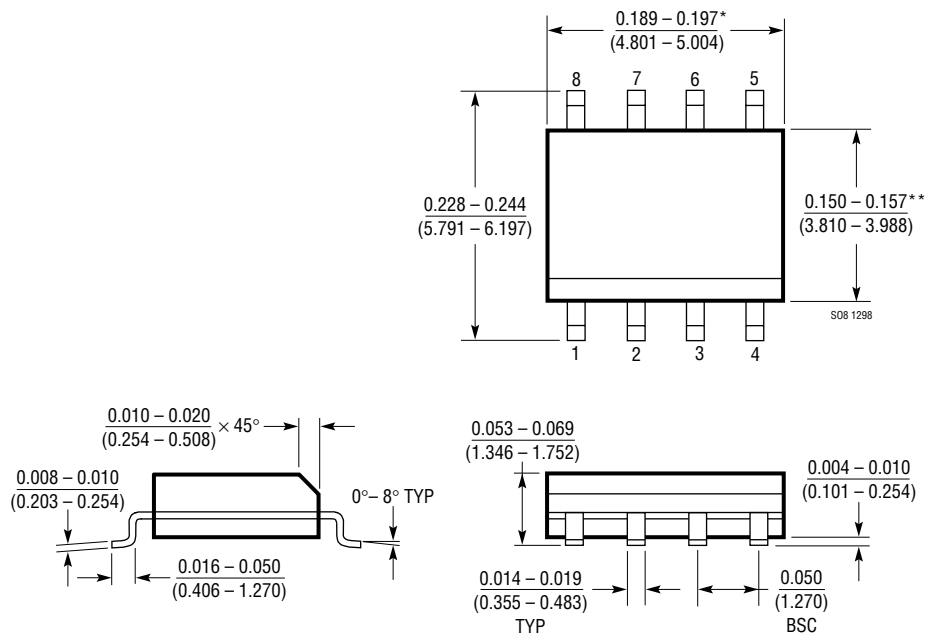
(Reference LTC DWG # 05-08-1410)



TO-92 TAPE AND REEL
REFER TO TAPE AND REEL SECTION OF
LTC DATA BOOK FOR ADDITIONAL INFORMATION

PACKAGE DESCRIPTION

S8 Package
8-Lead Plastic Small Outline (Narrow .150 Inch)
(Reference LTC DWG # 05-08-1610)



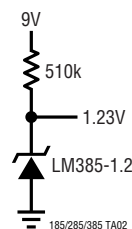
*DIMENSION DOES NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.006" (0.152mm) PER SIDE

**DIMENSION DOES NOT INCLUDE INTERLEAD FLASH. INTERLEAD FLASH SHALL NOT EXCEED 0.010" (0.254mm) PER SIDE

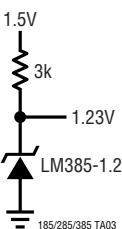
LM185-1.2/ LM285-1.2/LM385-1.2

TYPICAL APPLICATIONS

Micropower Reference for 9V Battery



1.2V Reference from 1.5V Battery



RELATED PARTS

PART NUMBER	DESCRIPTION	COMMENTS
LT1004-1.2	Micropower Shunt Reference	0.3% Initial Accuracy
LT1034	1.2V Micropower Shunt Reference	40ppm/°C Max Temperature Coefficient