INTEGRATED CIRCUITS
UNITRODE

UC1612
UC3612

Dual Schottky Diode

FEATURES

- Monolithic Two Diode Array
- Exceptional Efficiency
- Low Forward Voltage
- Fast Recovery Time
- High Peak Current
- Small Size

DESCRIPTION

The two-diode array is designed for high-current, low duty-cycle applications typical of flyback voltage clamping for inductive loads.

The use of Schottky diode technology features high efficiency through lowered forward voltage drop and decreased reverse recovery time.

This single monolithic chip is fabricated in hermetic CERDIP as well as copper leaded plastic MINIDIP and SOIC surface mount power pack. The UC1612 in ceramic is designed for –55°C to +125°C environments, but with reduced peak current capability; while the UC3612 has higher current rating over a 0°C to +70°C ambient temperature range.

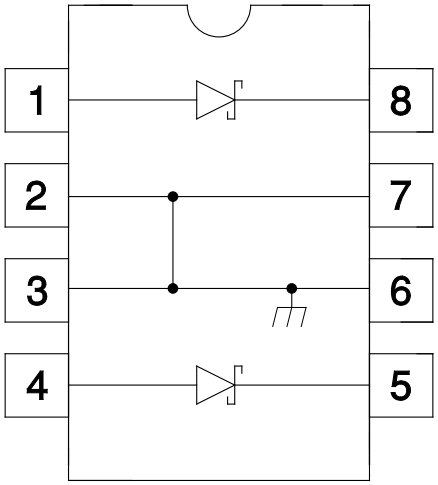
ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage (per diode) 50V
Peak Forward Current, UC3612 . . . . . .3A
Peak Forward Current, UC1612 . . . . . .1A
Storage Temperature Range . . . . . .–65°C to +150°C
Junction Temperature . . . . . .–55°C to +150°C
Lead Temperature (Soldering, 10 seconds) . . . . . .300°C

Currents are positive into, negative out of the specified terminal. Consult Packaging Section of Databook for thermal limitations and considerations of packages.

CONNECTION DIAGRAM

DIL-8, SOIC-8
(Top View)
J, N, or DP Package



Pins 2, 3, 6, 7 are connected to substrate and must be electrically isolated.

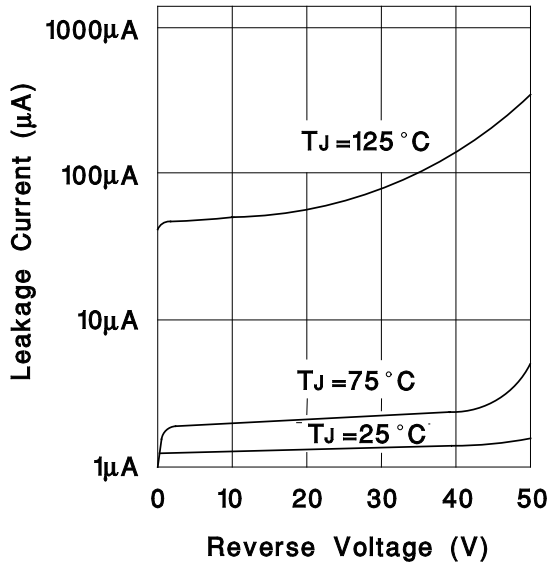
ELECTRICAL CHARACTERISTICS

All specifications apply to each individual diode. T_J = 25°C except as noted.

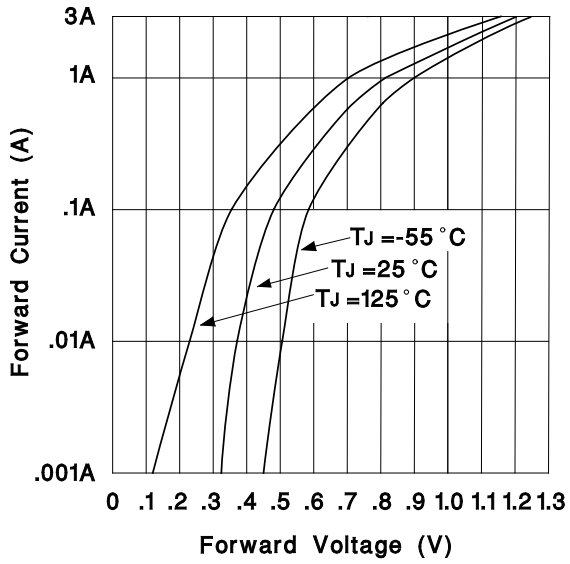
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Forward Leakage Drop	I_F = 100mA		0.49	0.55	V
	I_F = 1A		0.9	1.0	V
Leakage Current	V_R = 40V		.01	0.1	mA
	V_R = 40V, T_J = 100°C		0.1	1.0	mA
Reverse Recovery	0.5A Forward to 0.5A Reverse		15		ns
Forward Recovery	1A Forward to 1.1V Recovery		30		ns
Junction Capacitance	V_R = 5V		70		pF

Note: At forward currents of greater than 1.0A, a parasitic current of approximately 10mA may be collected by adjacent diodes.

Reverse Current vs Voltage



Forward Voltage vs Current



UNITRODE INTEGRATED CIRCUITS
7 CONTINENTAL BLVD. • MERRIMACK, NH 03054
TEL. (603) 424-2410 • FAX (603) 424-3460

PACKAGING INFORMATION

Orderable Device	Status [1]	Package Type	Package Drawing	Pins	Package Qty	Eco Plan [2]	Lead/Ball Finish	MSL Peak Temp [3]
UC1612J	OBSOLETE		UTR	8		TBD	Call TI	Call TI
UC1612L	OBSOLETE		UTR			TBD	Call TI	Call TI
UC3612DP	OBSOLETE		UTR	8		TBD	Call TI	Call TI
UC3612J	OBSOLETE		UTR			TBD	Call TI	Call TI
UC3612N	OBSOLETE		UTR	8		TBD	Call TI	Call TI

[1] The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

[2] Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

[3] MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265