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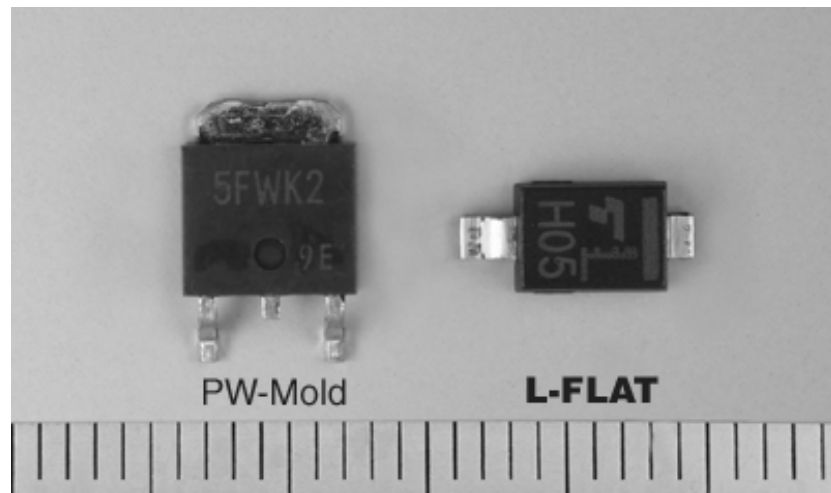
Update History

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Realizes $I_{F(AV)} = 5A$

L-FLAT Package for High-Speed, High-Efficiency Diodes

Part Number: CLH Series



Toshiba has developed a new series of L-FLAT package for high-speed, high-efficiency diodes (HED) that offers an average forward current I_F of 5 A as the newest member of its FLAT series packages (US-FLAT/S-FLAT/M-FLAT). The new package, CLH series, is available in a wide lineup of six types featuring V_{RRM} of 200 V, 300 V and 400 V at $I_F = 3A$ and V_{RRM} of 200 V, 300 V and 400 V at $I_F = 5A$. A $V_{RRM} = 600$ V type is also currently being developed and scheduled for mass production in December 2005.

[Applications]

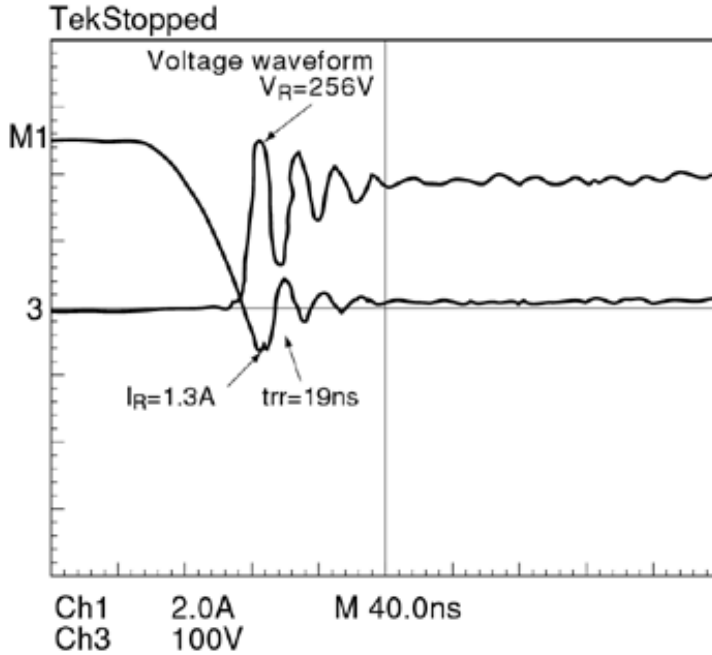
- Power factor improvement circuits (PFC)
- Switching mode power supply application

Features

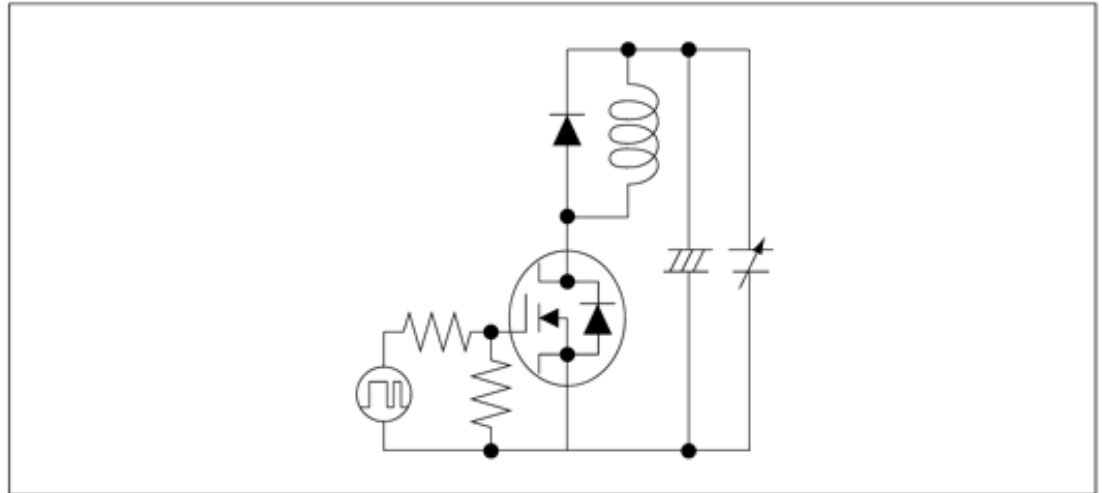
1. The CLH series offers the most power dissipation in the FLAT series, realizing $I_{F(AV)} = 5A$ with HED.
2. The dissipation is the same as with PW-MOLD, realized with a two-pin package. The thermal resistance is improved by a large cathode frame, which is connected with Cu connector between the anode terminal and the chip.
3. Suitable for power factor improvement circuits (PFC). The low I_R and fast t_{rr} reduce power dissipation, and noise is decreased.

Reverse Recovery Characteristics (t_{rr})

Typical example: CLH05 (rating: $I_F = 5\text{ A}$ / $V_{RRM} = 400\text{ V}$)
 trr conditions: $I_F = 5\text{ A}$, $di/dt = 100\text{ A}/\mu\text{s}$, voltage = 200 V , $T_a = 25^\circ\text{C}$



Measurement Circuit Drawing



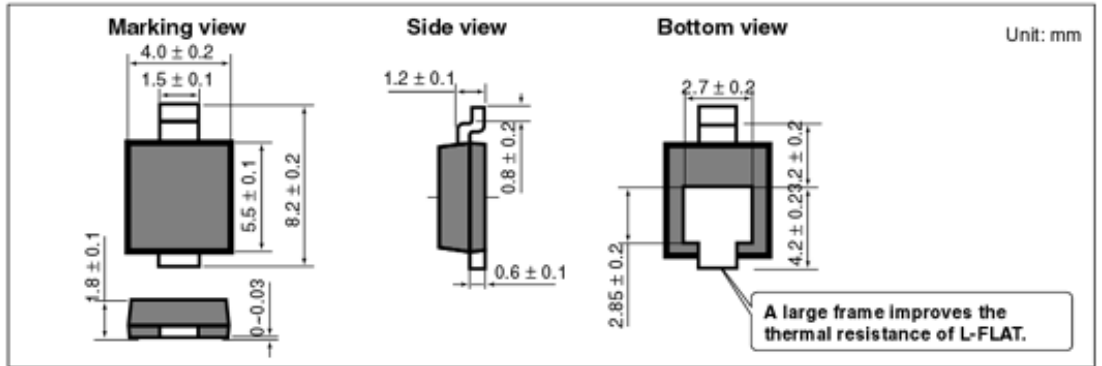
Lineup

Part Number	Maximum rating		Characteristics		
	$I_{F(AV)}$ (A)	V_{RRM} (V)	V_F (V)Max	I_{RRM} (μA)Max	$t_{rr}(\text{ns})\text{Max}^*$
CLH01	3	200	$0.98@I_F=3\text{A}$	$10@V_{RRM}=200\text{V}$	35
CLH02		300	$1.3@I_F=3\text{A}$	$10@V_{RRM}=300\text{V}$	
CLH03		400	$1.8@I_F=3\text{A}$	$10@V_{RRM}=400\text{V}$	
CLH05	5	200	$0.98@I_F=5\text{A}$	$10@V_{RRM}=200\text{V}$	
CLH06		300	$1.3@I_F=5\text{A}$	$10@V_{RRM}=300\text{V}$	

CLH07		400	1.8@I _F =5A	10@V _{RRM} =400V	
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*Note: Measurement conditions: T_a=25°C, I_F=2A, di/dt=-50A/μs

Dimensions of L-FLAT Package



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