

High Voltage 3.0A, 52kHz, DC-DC Step-down(Buck) Switching Regulator

DESCRIPTION

The LM2576HV series of regulators are monolithic integrated circuits that provide all the active functions for a step-down (buck) switching regulator, capable of driving 3.0A load with excellent line and load regulation. These devices are available in fixed output voltages of 3.3V, 5.0V, 12.0V, 15.0V and adjustable output versions.

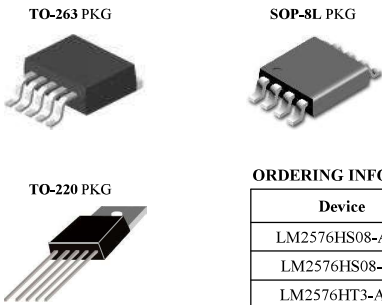
Requiring a minimum number of external components, these regulators are simple to use and include internal frequency compensation and a fixed-frequency oscillator. The LM2576HV series offers a high-efficiency replacement for popular three-terminal linear regulators. It substantially reduces the size of the heat sink, and in some cases no heat sink is required. A standard series of inductors optimized for use with the LM2576HV are available from several different manufacturers. This feature greatly simplifies the design of switch-mode power supplies. Other features include a guaranteed $\pm 4\%$ tolerance on output voltage within specified input voltages and output load conditions, and $\pm 10\%$ on the oscillator frequency. External shutdown is included, featuring 50uA (typical) standby current. The output switch includes cycle-by-cycle current limiting, as well as thermal shutdown for full protection under fault conditions.

FEATURES

- Step-down(Buck) Switching Regulator
- Adjustable Version Output Voltage Range, 1.23V to 52.0V
 $\pm 4\%$ Max over Line and Load conditions
- Guaranteed Output Current of 3.0A
- Fixed Output Voltages : 3.3V, 5.0V, 12.0V and 15.0V
- Wide Input Voltage Range 60.0V
- 52 kHz Fixed Frequency Oscillator
- TTL Shutdown Capability, Low Power Standby Mode
- Requires only 4 External Components
- High Efficiency
- Use Readily Available Standard Inductors
- Available in TO-220, TO-263 and ESOP-8L Packages
- Thermal Shutdown and Current Limit Protection
- Moisture Sensitivity Level 3

APPLICATION

- Simple high-efficiency step-down (buck) regulator
- Efficient pre-regulatorfor linear regulators
- On-card switching regulators
- Positive to negative converter (Buck-Boost)

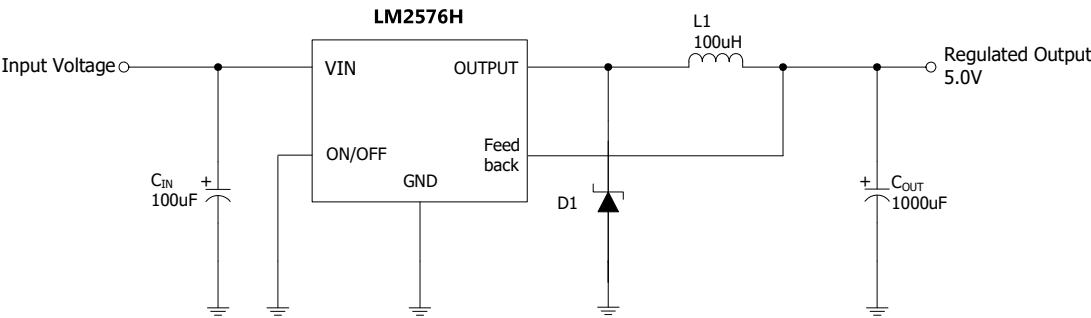


ORDERING INFORMATION	
Device	Package
LM2576HS08-ADJ	ESOP-8L
LM2576HS08-*. *	
LM2576HT3-ADJ	TO-263-5L
LM2576HT3-*. *	
LM2576HT2-ADJ	TO-220-5L
LM2576HT2-*. *	

, =Output Voltage = 3.3, 5.0, 12.0, 15.0

■ TYPICAL APPLICATION

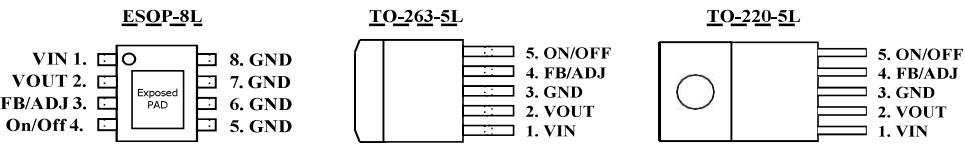
- Fixed Output Voltage Version



■ Absolute Maximum Ratings (Note 1)

CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Supply Voltage	VIN	-	63.0	V
ON/OFF Pin Input Voltage		-0.3	+VIN	V
Output Voltage to Ground (Steady State)		-0.75		V
Lead Temperature (Soldering, 5 sec)	TSOL		260	°C
Storage Temperature Range	TSTG	-65	150	°C
Maximum Junction Temperature Range	TJOPR	-	150	°C

PIN CONFIGURATION



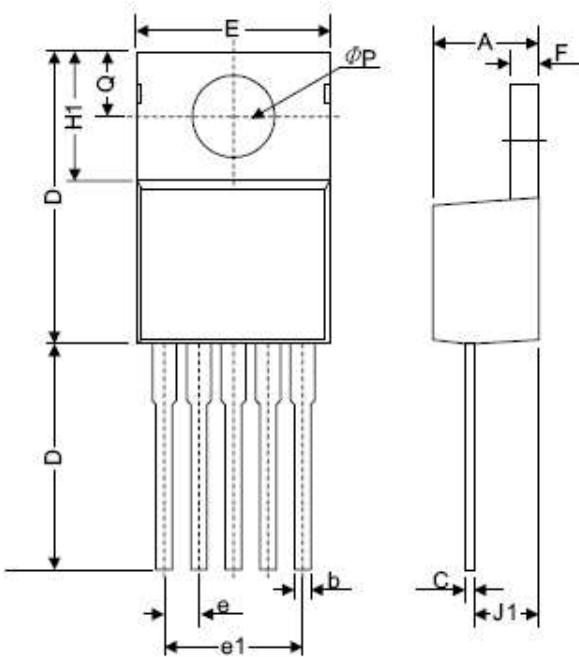
PIN DESCRIPTION

Pin No.	TO-263 / TO-220 5 LEAD		SOP-8PP 8 LEAD	
	Name	Function	Name	Function
1	VIN	Input Supply	VIN	Input Supply
2	VOUT	Output Voltage	VOUT	Output Voltage
3	GND	Ground	FB/ADJ	Output Voltage Feedback or Output Adjust
4	FB/ADJ	Output Voltage Feedback or Output Adjust	ON/OFF	ON/OFF Shutdown
5/ 6/ 7/ 8	ON/OFF	ON/OFF Shutdown	GND	Ground

* Exposed Pad of ESOP-8 package should be externally connected to GND.

■ Package Information

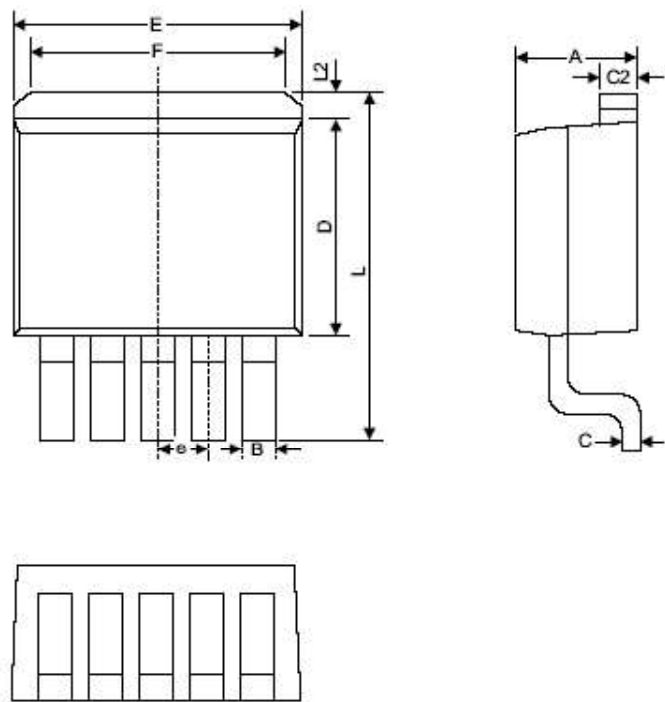
- Type: TO-220-5L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	0.160	0.190
b	0.76	1.02	0.030	0.040
C	0.36	0.64	0.014	0.025
D	14.22	15.49	0.560	0.610
E	9.78	10.54	0.385	0.415
e	1.57	1.85	0.062	0.073
e(1)	6.68	6.93	0.263	0.273
F	1.14	1.40	0.045	0.055
H(1)	5.46	6.86	0.215	0.270
J(1)	2.29	3.18	0.090	0.125
L	13.21	14.73	0.520	0.580
ϕP	3.68	3.94	0.145	0.155
Q	2.54	2.92	0.100	0.115

■ Package Information

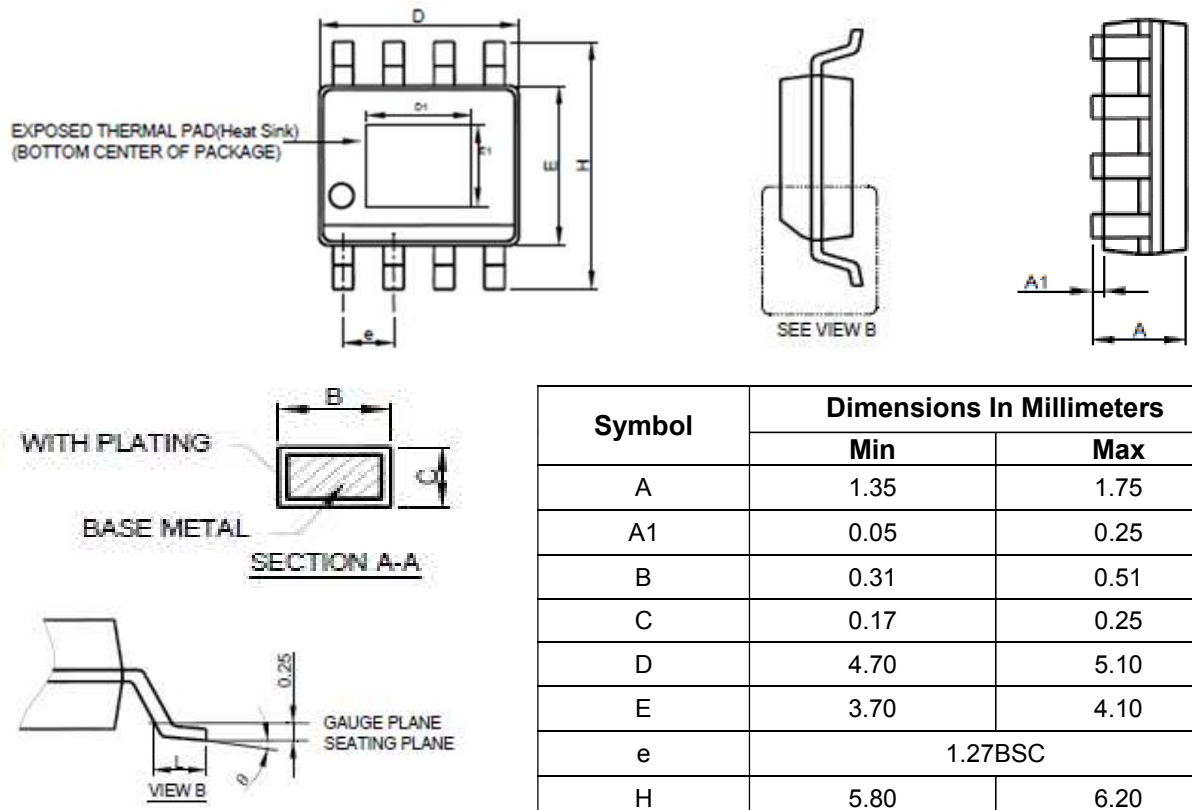
- Type: TO-263-SL



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.440	4.650	0.175	0.183
B	0.710	0.970	0.028	0.038
C	0.360	0.640	0.014	0.025
C2	1.255	1.285	0.049	0.051
D	8.390	8.890	0.330	0.350
E	9.960	10.360	0.392	0.408
e	1.550	1.850	0.061	0.073
F	6.360	7.360	0.250	0.290
L	13.950	14.750	0.549	0.581
L2	1.120	1.420	0.044	0.056

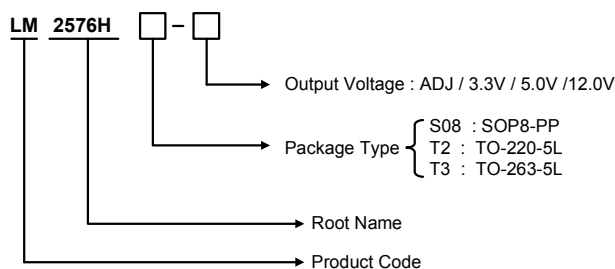
■ Package Information

- Type: ESOP-8L



Symbol	Dimensions In Millimeters	
	Min	Max
A	1.35	1.75
A1	0.05	0.25
B	0.31	0.51
C	0.17	0.25
D	4.70	5.10
E	3.70	4.10
e	1.27BSC	
H	5.80	6.20
L	0.40	1.27
θ	0°	8°
D1	3.10REF	
E1	2.21REF	

■ Ordering Information



V _{OUT}	Package	Order No.	Description	Supplied As	Status
ADJ	ESOP-8L	LM2576HS08-ADJ	3.0A, 52kHz, Adjustable	Reel	Contact us
	TO-263 5L	LM2576HT3-ADJ			Active
	TO-220 5L	LM2576HT2-ADJ		Tube	Active
3.3V	ESOP-8L	LM2576HS08-3.3	3.0A, 52kHz, Fixed	Reel	Contact us
	TO-263 5L	LM2576HT3-3.3			Active
	TO-220 5L	LM2576HT2-3.3		Tube	Active
5.0V	ESOP-8L	LM2576HS08-5.0	3.0A, 52kHz, Fixed	Reel	Contact us
	TO-263 5L	LM2576HT3-5.0			Active
	TO-220 5L	LM2576HT2-5.0		Tube	Active
12.0V	ESOP-8L	LM2576HS08-120	3.0A, 52kHz, Fixed	Reel	Contact us
	TO-263 5L	LM2576HT3-120			Active
	TO-220 5L	LM2576HT2-120		Tube	Active
15.0V	ESOP-8L	LM2576HS08-150	3.0A, 52kHz, Fixed	Reel	Contact us
	TO-263 5L	LM2576HT3-150			Contact us
	TO-220 5L	LM2576HT2-150		Tube	Contact us

- LM2576H devices are Pb-free and RoHS compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.

Note:

- The information described herein is subject to change without notice.
- ForDevices Inc. is not responsible for any problems caused by circuits or diagrams described herein whose related industrial properties, patents, or other rights belong to third parties. The application circuit examples explain typical applications of the products, and do not guarantee the success of any specific mass-production design.
- Use of the information described herein for other purposes and/or reproduction or copying without the express permission of ForDevices Inc. is strictly prohibited.
- The products described herein cannot be used as part of any device or equipment affecting the human body, such as exercise equipment, medical equipment, security systems, gas equipment, or any apparatus installed in airplanes and other vehicles, without prior written permission of ForDevices Inc.
- Although ForDevices Inc. exerts the greatest possible effort to ensure high quality and reliability, the failure or malfunction of semiconductor products may occur. The user of these products should therefore give thorough consideration to safety design, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue.