

## Description

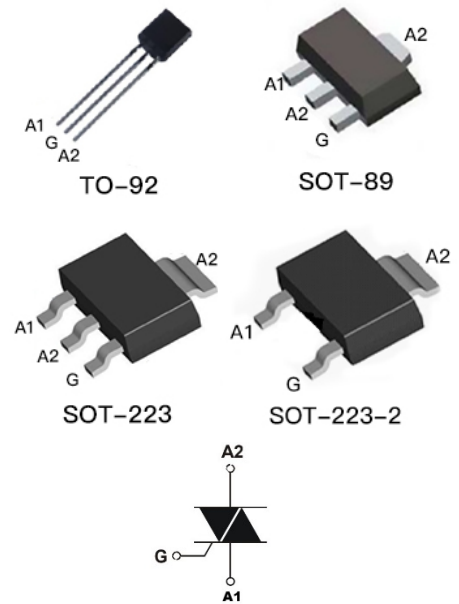
Available in high power packages, the suitable for general purpose AC switching.

## Features

- Good performance at dv/dt and reliability
- Low thermal resistance with clip bonding
- High commutation capability

## Applications

- General purpose AC switch control
- Control loads in Motor, Fan, and Pump.
- Solenoid drivers
- LED Dimming
- Inrush current limiting circuits



## Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ )

Rating		Symbol	Value
Peak repetitive off-state voltage ( $T_J = -40$ to $+125^\circ\text{C}$ , Full sine wave, 50Hz to 60Hz; Gate open) (Note 1)		$V_{\text{DRM}}$ $V_{\text{RRM}}$	800V
On-state RMS current (full sine wave)		$I_{\text{T(RMS)}}$	1A
Non repetitive surge peak on-state current (full cycle, $T_{\text{initial}} = 25^\circ\text{C}$ )	F=60Hz, t=16.7ms	$I_{\text{TSM}}$	9A
$I^2t$ Value for fusing	$t_p=10\text{ms}$	$I^2t$	$0.6\text{A}^2\text{s}$
Non repetitive surge peak off-state voltage	$t_p=10\text{ms}$ , $T_J=25^\circ\text{C}$	$V_{\text{DSM}}/V_{\text{RSM}}$	$V_{\text{DRM}}/V_{\text{RRM}}+100\text{V}$
Peak gate current	$t_p=20\mu\text{s}$ , $T_J=125^\circ\text{C}$	$I_{\text{GM}}$	1A
Average gate power dissipation	$T_J=150^\circ\text{C}$	$P_{\text{G(AV)}}$	0.5W
Operating junction temperature ranges		$T_J, T_{\text{STG}}$	$-40^\circ\text{C}$ to $+125^\circ\text{C}$
Storage junction temperature range		$T_{\text{STG}}$	$-40^\circ\text{C}$ to $+150^\circ\text{C}$

Note:

1.  $V_{\text{DRM}}$  and  $V_{\text{RRM}}$  for all types can be applied on a continuous basis.

Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

### Electrical Characteristics ( $T_J=25^\circ\text{C}$ , unless otherwise specified)

Parameter		Symbol	Value
$V_D=12\text{V}, R_L=100\Omega$	I-II-III	$I_{GT \text{ Max.}}$	10mA
	ALL	$V_{GT \text{ Max.}}$	1.1V
$V_D=V_{DRM}, R_L=100\Omega, T_J=125^\circ\text{C}$	ALL	$V_{GD \text{ Min.}}$	0.25V
$I_T=100\text{mA}$		$I_H \text{ Max.}^{(1)}$	20mA
$I_G=1.2I_{GT}$	I-III	$I_L \text{ Max.}$	20mA
	II		40mA
$V_D=67\%V_{DRM}$ gate open, $T_J=125^\circ\text{C}$		$dv/dt \text{ Min.}^{(1)}$	100V/ $\mu\text{s}$

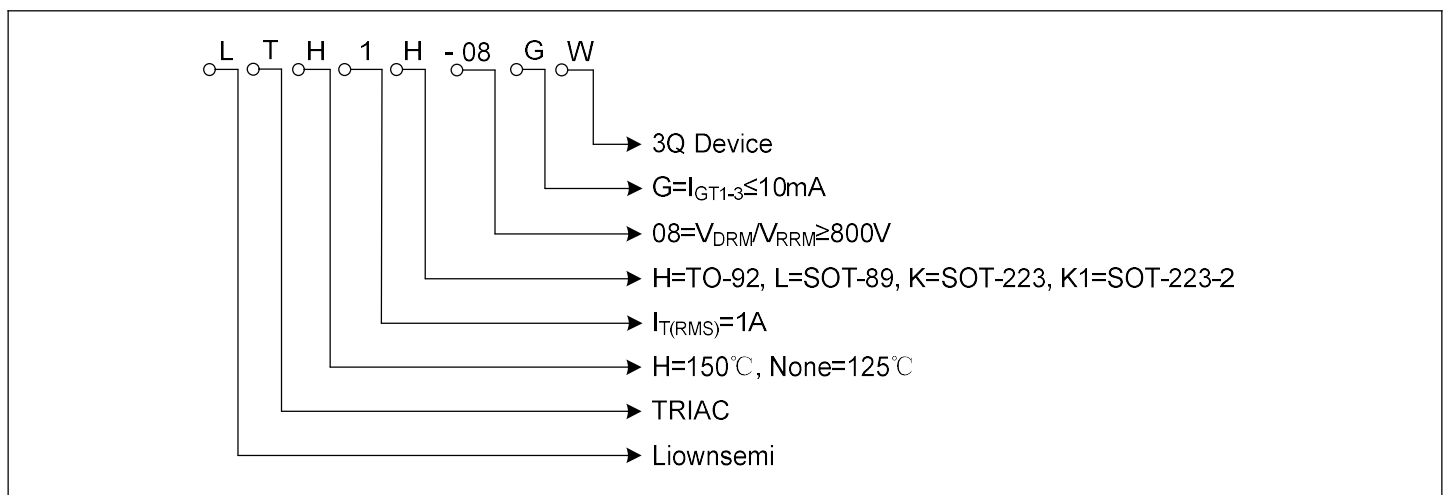
1. for both polarities of A2 referenced to A1

### Static Characteristics

Test conditions	Symbol	Value
$I_{TM}=1\text{A}, t_P=380\mu\text{s}, T_J=25^\circ\text{C}$	$V_T \text{ Max.}^{(1)}$	1.7V
Threshold voltage, $T_J=125^\circ\text{C}$	$V_{T0} \text{ Max.}^{(1)}$	0.95V
Dynamic resistance, $T_J=125^\circ\text{C}$	$R_D \text{ Max.}^{(1)}$	420m $\Omega$
$V_{DRM}=V_{RRM}, T_J=25^\circ\text{C}$	$I_{DRM} \text{ Max.}$	5 $\mu\text{A}$
$V_{DRM}=V_{RRM}, T_J=125^\circ\text{C}$	$I_{RRM} \text{ Max.}$	0.5mA

1. for both polarities of A2 referenced to A1

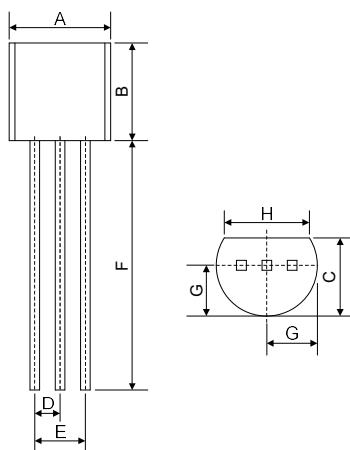
### Part Number Code

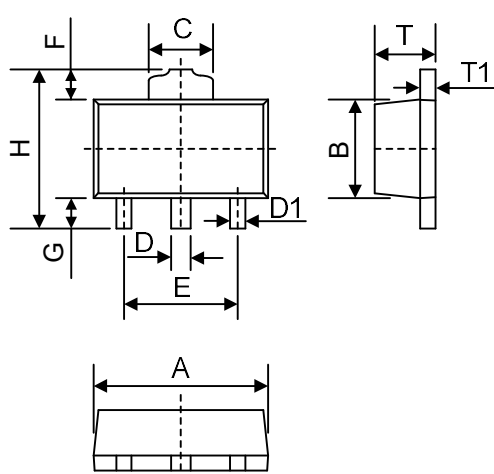


## Ordering Information

Part Number	Marking	Package
LTH1H-08GW	LTH1H-08GW	TO-92
LTH1L-08GW	LTH1L-08GW	SOT-89
LTH1K-08GW	LTH1K-08GW	SOT-223
LTH1K1-08GW	LTH1K1-08GW	SOT-223-2

## Dimensions

TO-92	Symbol	Millimeters	
		Min.	Max.
	A	4.45	5.20
	B	4.32	5.33
	C	3.175	4.191
	D	1.143	1.397
	E	2.413	2.667
	F	12.70	-
	G	2.04	2.66
	H	3.43	-

SOT-89	Symbol	Millimeters	
		Min.	Max.
	A	4.40	4.60
	B	2.40	2.60
	C	1.65	1.75
	D	0.43	0.53
	D1	0.35	0.45
	E	2.95	3.05
	F	0.82	0.83
	G	0.82	0.83
	H	4.05	4.25
	T	1.40	1.60
	T1	0.35	0.45

**Dimensions**

SOT-223	Symbol	Millimeters	
		Min.	Max.
	A	6.40	6.60
	B	3.30	3.70
	B1	6.80	7.20
	C	2.90	3.10
	D	0.65	0.75
	E	2.30 BSC	
	T	1.50	1.70
	T1	0.02	0.10
	T2	0.20	0.30

SOT-223-2	Symbol	Millimeters	
		Min.	Max.
	A	6.40	6.60
	B	3.40	3.60
	B1	6.85	7.15
	C	2.95	3.05
	D	0.66	0.76
	E	2.286 BSC	
	T	1.45	1.65
	T1	0.03	0.15
	T2	0.20	0.35

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