

## Description

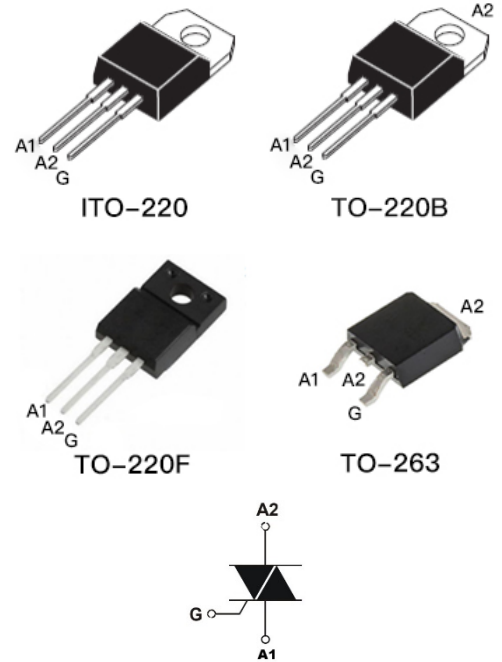
Available in high power packages, the suitable for general purpose AC switching.

## Features

- High current TRIAC
- 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)		$I_{\text{T(RMS)}}$	20A
Non repetitive surge peak on-state current (full cycle, $T_{\text{initial}} = 25^\circ\text{C}$ )	F=50Hz, t=20ms	$I_{\text{TSM}}$	150A
	F=60Hz, t=16.7ms		160A
$I^2t$ Value for fusing	$t_p=10\text{ms}$	$I^2t$	134A <sup>2</sup> s
Critical rate of rise of on-state current $I_G=2I_{GT}$	F=120Hz, $T_J=125^\circ\text{C}$	di/dt	80A/ $\mu\text{s}$
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	$t_p=20\mu\text{s}$ , $T_J=125^\circ\text{C}$	$I_{\text{GM}}$	8A
Average gate power dissipation	$T_J=125^\circ\text{C}$	$P_{\text{G(AV)}}$	4W
Operating junction and storage temperature ranges		$T_J, T_{\text{STG}}$	$-40^\circ\text{C}$ 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	
$V_D=12\text{V}, R_L=33\Omega$	I-II-III	$I_{GT \text{ Max.}}$	35mA	50mA
	ALL	$V_{GT \text{ Max.}}$	1.2V	1.2V
$V_D=V_{DRM}, R_L=100\Omega, T_J=150^\circ\text{C}$	ALL	$V_{GD \text{ Min.}}$	0.2V	0.2V
$I_T=100\text{mA}$		$I_H \text{ Max.}^{(1)}$	35mA	75mA
$I_G=1.2I_{GT}$	I-III	$I_L \text{ Max.}$	50mA	80mA
	II		80mA	100mA
$V_D=67\%V_{DRM}$ gate open, $T_J=125^\circ\text{C}$		$dv/dt \text{ Min.}^{(1)}$	1000V/ $\mu\text{s}$	1000V/ $\mu\text{s}$

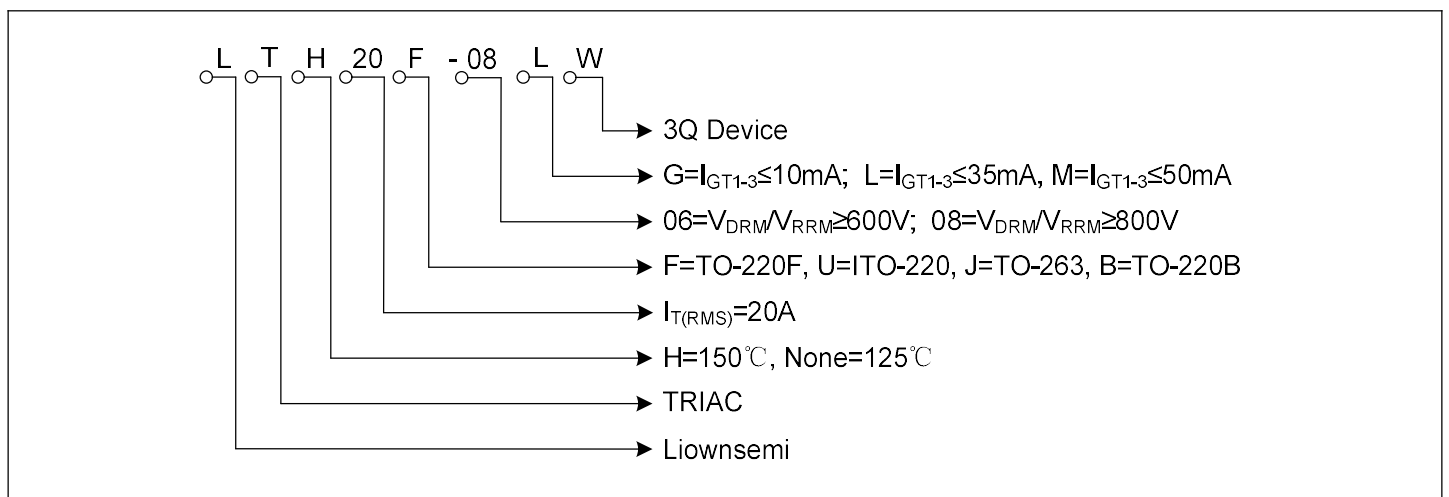
1. for both polarities of A2 referenced to A1

### Static Characteristics

Test conditions	Symbol	Value
$I_{TM}=20\text{A}, t_P=380\mu\text{s}, T_J=25^\circ\text{C}$	$V_T \text{ Max.}^{(1)}$	1.4V
Threshold voltage, $T_J=150^\circ\text{C}$	$V_{t0} \text{ Max.}^{(1)}$	0.95V
Dynamic resistance, $T_J=150^\circ\text{C}$	$R_D \text{ Max.}^{(1)}$	50m $\Omega$
$V_{DRM}=V_{RRM}, T_J=25^\circ\text{C}$	$I_{DRM} \text{ Max.}$	5 $\mu\text{A}$
$V_{DRM}=V_{RRM}, T_J=125^\circ\text{C}$	$I_{RRM} \text{ Max.}$	5mA

1. for both polarities of A2 referenced to A1

### Part Number Code



## Ordering Information

Part Number	Marking	Package
LTH20U-08LW	LTH20U-08LW	ITO-220
LTH20U-08MW	LTH20U-08MW	ITO-220
LTH20B-08LW	LTH20B-08LW	TO-220B
LTH20B-08MW	LTH20B-08MW	TO-220B
LTH20F-08LW	LTH20F-08LW	TO-220F
LTH20F-08MW	LTH20F-08MW	TO-220F
LTH20J-08LW	LTH20J-08LW	TO-263
LTH20J-08MW	LTH20J-08MW	TO-263

## Dimensions

ITO-220	Symbol	Millimeters	
		Min.	Max.
	A	9.80	10.40
	B	2.65	3.10
	C	14.80	16.10
	D	0.70	0.92
	D1	1.18	1.42
	E	2.40	2.70
	L	2.80	4.20
	L1	13.05	13.60
	H	5.85	6.82
	K	2.35	2.75
	T	4.38	4.61
	T1	1.15	1.36
	T2	0.35	0.65
	ΦR	3.75	3.95

Dimensions

TO-220B	Symbol	Millimeters	
		Min.	Max.
	A	9.80	10.40
	B	2.65	3.10
	C	14.80	16.10
	D	0.70	0.92
	D1	1.18	1.42
	E	2.40	2.70
	L	2.80	4.20
	L1	13.05	13.60
	H	5.85	6.82
	K	2.35	2.75
	T	4.38	4.61
	T1	1.15	1.36
	T2	0.35	0.65
	ΦR	3.75	3.95

TO-220F	Symbol	Millimeters	
		Min.	Max.
	A	9.96	10.36
	B	2.70 REF.	
	D	0.50	0.75
	D1	1.50	1.75
	D2	1.10	1.35
	E	2.54 TYP.	
	H	14.80	15.20
	K	2.50	2.90
	L	28.00	28.40
	L1	1.70	1.90
	L2	1.90	2.10
	T	4.30	4.70
	T1	2.80	3.20
	T2	0.50	0.75
	ΦR	3.50 REF.	

**Dimensions**

TO-263	Millimeters		
	Symbol	Min.	Max.
	A	9.80	10.20
	B	1.00	1.40
	C	9.00	9.40
	D	0.70	0.90
	D1	1.15	1.35
	E	2.34	2.74
	E1	4.88	5.28
	L	15.00	16.00
	L1	1.20	1.60
	L2	2.24	2.84
	T	4.30	4.70
	T1	1.20	1.40
	T2	0.40	0.60

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