

## Description

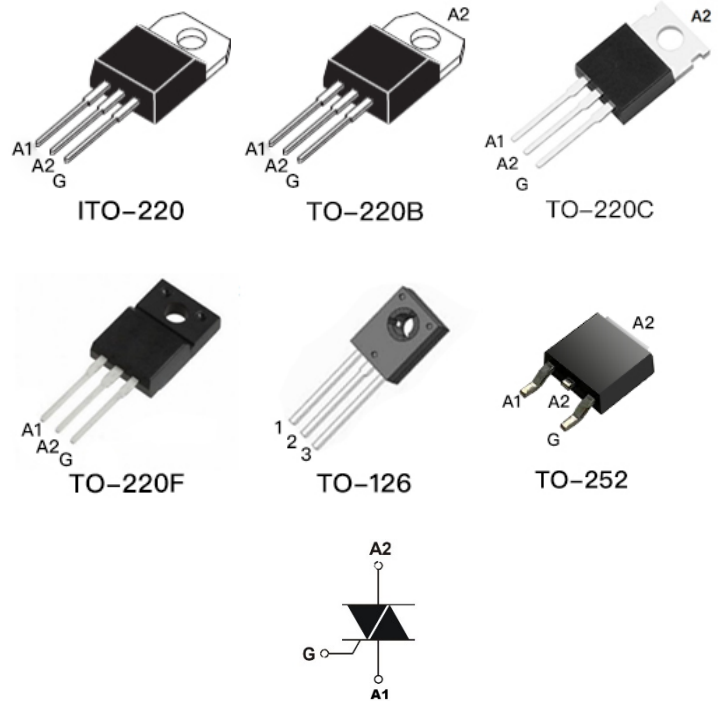
Available in high power packages, the suitable for general purpose AC switching.

## 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		$V_{DRM}$ $V_{RRM}$	800V
On-state RMS current (full sine wave)		$I_{T(RMS)}$	4A
Non repetitive surge peak on-state current (full cycle, $T_{initial} = 25^\circ\text{C}$ )	F=60Hz, $t=16.7\text{ms}$	$I_{TSM}$	20A
$I^2t$ Value for fusing	$t_p=10\text{ms}$	$I^2t$	12A <sup>2</sup> s
Critical rate of rise of on-state current $I_G=2I_{GT}$	F=120Hz, $T_J=150^\circ\text{C}$	di/dt	50A/ $\mu\text{s}$
Non repetitive surge peak off-state voltage	$t_p=10\text{ms}$ , $T_J=25^\circ\text{C}$	$V_{DSM}/V_{RSM}$	$V_{DRM}/V_{RRM}+100\text{V}$
Peak gate current	$t_p=20\mu\text{s}$ , $T_J=150^\circ\text{C}$	$I_{GM}$	2A
Average gate power dissipation	$T_J=150^\circ\text{C}$	$P_{G(AV)}$	4W
Operating junction temperature ranges		$T_J, T_{STG}$	-40 $^\circ\text{C}$ to +125 $^\circ\text{C}$
Storage junction temperature range		$T_{STG}$	-40 $^\circ\text{C}$ to +150 $^\circ\text{C}$

Note:

1.  $V_{DRM}$  and  $V_{RRM}$  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	$I_{GT \text{ Max.}}$	25mA
	IV	$I_{GT \text{ Max.}}$	50mA
	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-IV	$I_L \text{ Max.}$	20mA
	II		40mA
$V_D=67\%V_{DRM}$ gate open, $T_J=125^\circ\text{C}$		$dv/dt \text{ Min.}^{(1)}$	200V/ $\mu\text{s}$

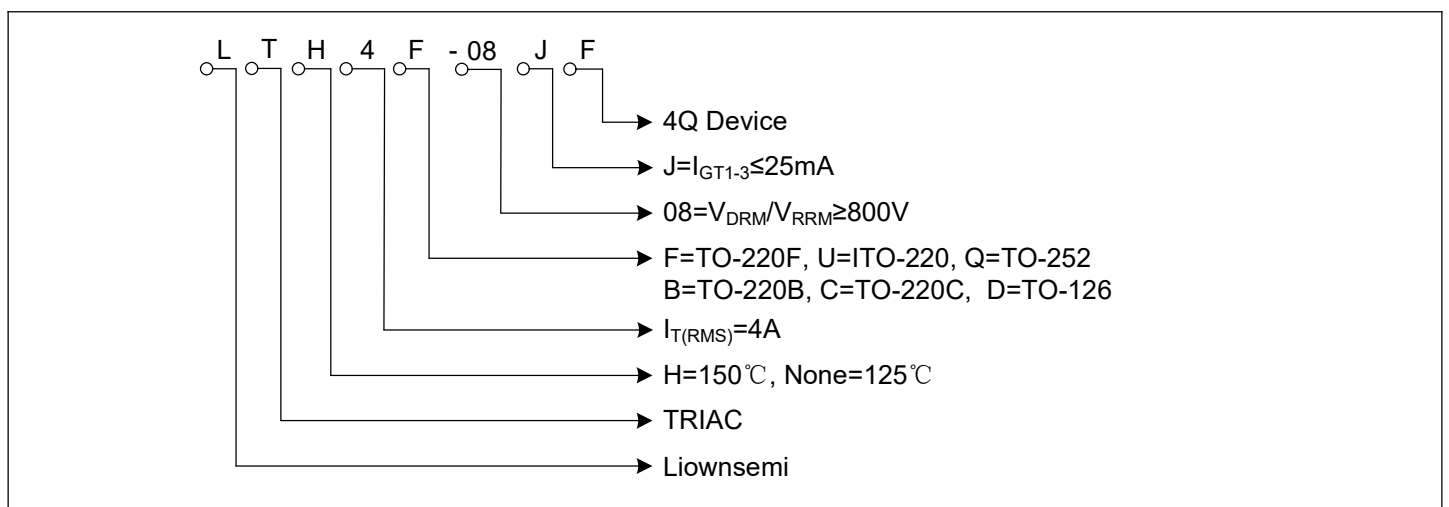
1. for both polarities of A2 referenced to A1

### Static Characteristics

Test conditions	Symbol	Value
$I_{TM}=4\text{A}, t_p=380\mu\text{s}, T_J=25^\circ\text{C}$	$V_T \text{ Max.}^{(1)}$	1.6V
$V_{DRM}=V_{RRM}, T_J=25^\circ\text{C}$	$I_{DRM \text{ Max.}}$	5 $\mu\text{A}$
$V_{DRM}=V_{RRM}, T_J=125^\circ\text{C}$	$I_{RRM \text{ Max.}}$	1mA

1. for both polarities of A2 referenced to A1

### Part Number Code



## Ordering Information

Part Number	Marking	Package
LTH4U-08JF	LTH4U-08JF	ITO-220
LTH4B-08JF	LTH4B-08JF	TO-220B
LTH4C-08JF	LTH4C-08JF	TO-220C
LTH4F-08JF	LTH4F-08JF	TO-220F
LTH4Q-08JF	LTH4Q-08JF	TO-252
LTH4D-08JF	LTH4D-08JF	TO-126

## 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-220C	Symbol	Millimeters	
		Min.	Max.
	A	9.70	10.40
	B	6.13	6.82
	C	9.00	9.40
	D	0.70	0.92
	D1	1.18	1.45
	D2	1.22	1.32
	E	2.34	2.74
	L	15.70	16.14
	L1	9.60	10.60
	L2	12.60	13.60
	K	2.20	2.75
	T	4.30	4.71
	T1	1.20	1.42
	T2	0.38	0.65
	ΦR	3.55	3.78

**Dimensions**

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.		

TO-252	Symbol	Millimeters	
		Min.	Max.
	A	6.50	6.70
	B	6.00	6.20
	C	5.284	5.384
	D	0.71	0.81
	D1	0.81	0.91
	E	2.236	2.336
	K	0.967	1.087
	L	9.80	10.10
	L1	0.70	0.90
	L2	1.40	1.60
	T	2.20	2.40
	T1	0.498	0.518

## Dimensions

TO-126	Symbol	Millimeters	
		Min.	Max.
	A	7.50	8.20
	B	10.80	11.04
	C	3.76	4.01
	D	0.64	0.88
	D1	0.51	0.66
	E	2.39BSC	
	F	1.27	2.41
	H	14.61	16.63
	K	1.15	1.65
	T	2.54	3.00
	T1	0.39	0.63
	ΦR	2.93	3.30

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