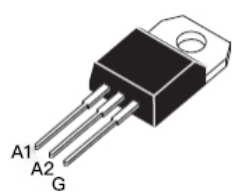
Description

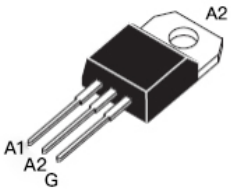
Available in high power packages, the suitable for general purpose AC switching.

Features

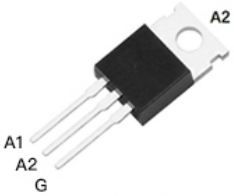
- High current TRIAC
- Low thermal resistance with clip bonding
- High commutation capability



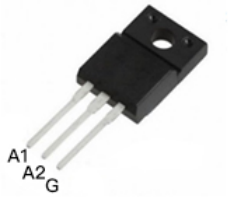
ITO-220



TO-220B



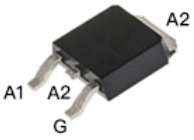
TO-220C



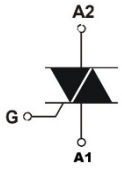
TO-220F

Applications

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



TO-263



Absolute Maximum Ratings (T_A=25℃)

Rating		Symbol	Value
Peak repetitive off-state voltage (T_J = -40 to +150℃, Full sine wave, 50Hz to 60Hz; Gate open) (Note 1)		V_{DRM} V_{RRM}	800V
On-state RMS current (full sine wave)		$I_{T(RMS)}$	12A
Non repetitive surge peak on-state current (full cycle, T initial = 25℃)	F=50Hz, t=20ms	I_{TSM}	100A
	F=60Hz, t=16.7ms		110A
I^2t Value for fusing	t_P=10ms	I^2t	41.5A^2s
Critical rate of rise of on-state current I_G=2I_{GT}	F=120Hz, T_J=150℃	di/dt	50A/μs
Non repetitive surge peak off-state voltage	t_P=10ms, T_J=25℃	V_{DSM}/V_{RSM}	V_{DRM}/V_{RRM}+100V
Peak gate current	t_P=20μs, T_J=150℃	I_{GM}	8A
Average gate power dissipation	T_J=150℃	$P_{G(AV)}$	1W
Operating junction and storage temperature ranges		T_J,T_{STG}	-40℃ to +150℃

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℃, unless otherwise specified)

Parameter		Symbol	Value	
V_D=12V, R_L=33Ω	I-II-III	$I_{GT\ Max.}$	10mA	35mA
	ALL	$V_{GT\ Max.}$	1.2V	1.2V
V_D=V_{DRM}, R_L=100Ω, T_J=125℃	ALL	$V_{GD\ Min.}$	0.2V	0.2V
I_T=100mA		$I_{H\ Max.}$ (1)	15mA	35mA
I_G=1.2I_{GT}	I-III	$I_{L\ Max.}$	20mA	50mA
	II		35mA	80mA
V_D=67%V_{DRM} gate open, T_J=150℃		dv/dt $_{Min.}$ (1)	200V/μs	1000V/μs

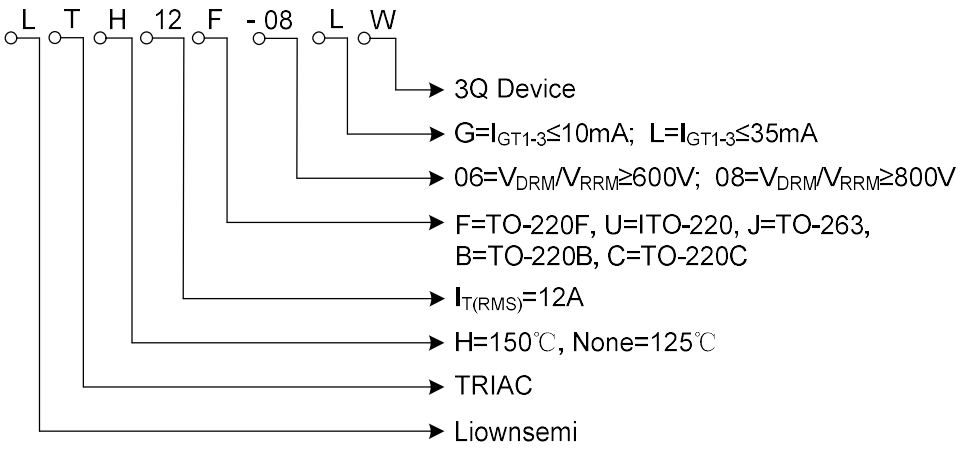
1. for both polarities of A2 referenced to A1

Static Characteristics

Test conditions	Symbol	Value
I_{TM}=12A, t_P=380μs, T_J=25℃	$V_{T\ Max.}$ (1)	1.4V
Threshold voltage, T_J=150℃	$V_{t0\ Max.}$ (1)	0.95V
Dynamic resistance, T_J=150℃	$R_{D\ Max.}$ (1)	45mΩ
V_{DRM}=V_{RRM}, T_J=25℃	$I_{DRM\ Max.}$	5μA
V_{DRM}=V_{RRM}, T_J=150℃	$I_{RRM\ Max.}$	3mA

1. for both polarities of A2 referenced to A1

Part Number Code

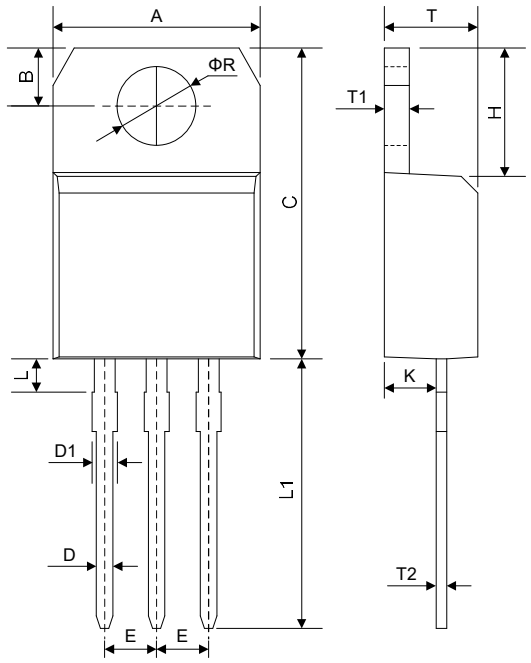


Ordering Information

Part Number	Marking	Package
LTH12U-08GW	LTH12U-08GW	ITO-220
LTH12U-08LW	LTH12U-08LW	ITO-220
LTH12B-08GW	LTH12B-08GW	TO-220B
LTH12B-08LW	LTH12B-08LW	TO-220B
LTH12C-08GW	LTH12C-08GW	TO-220C
LTH12F-08GW	LTH12F-08GW	TO-220F
LTH12F-08LW	LTH12F-08LW	TO-220F
LTH12J-08GW	LTH12J-08GW	TO-263
LTH12J-08LW	LTH12J-08LW	TO-263

Dimensions

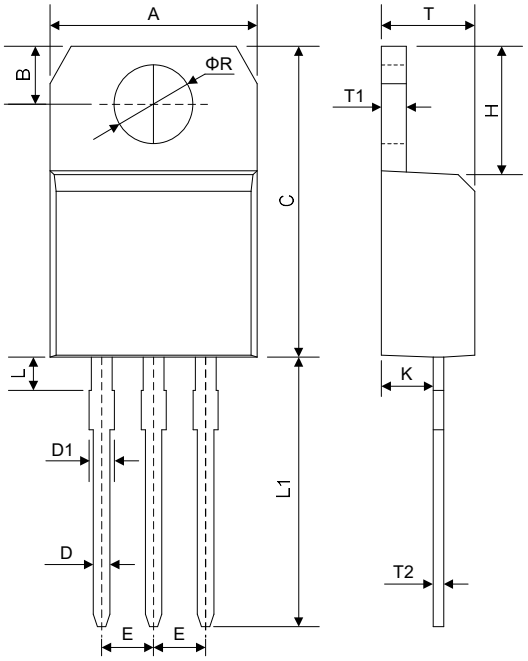
ITO-220



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

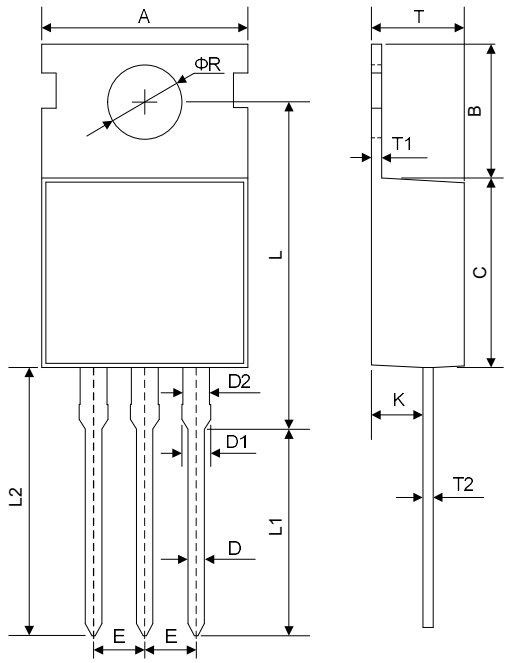
Dimensions

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

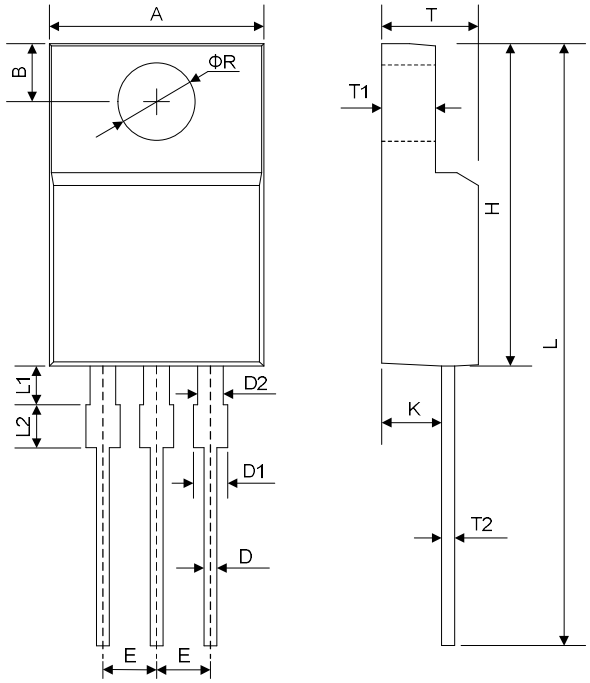
TO-220C



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

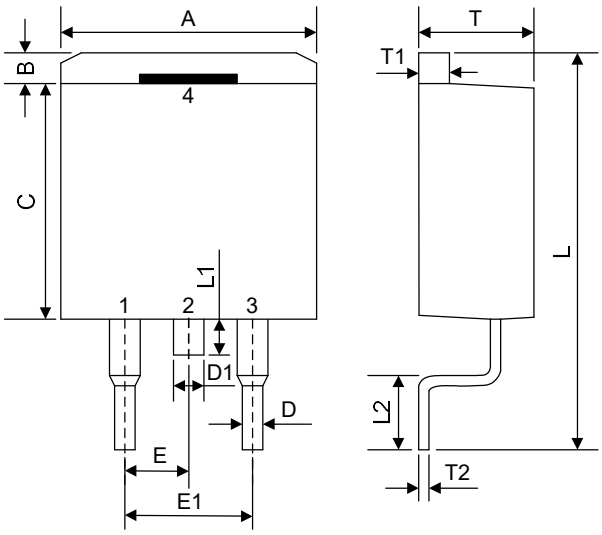
Dimensions

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-263



Symbol	Millimeters	
	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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