

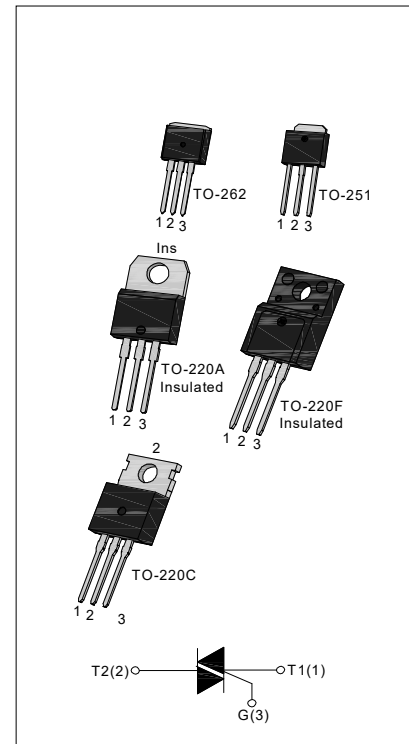


### DESCRIPTION:

With high ability to withstand the shock loading of large current, JST08 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink, JST08A provides a rated insulation voltage of 2500 V<sub>RMS</sub>, and JST08F provides a rated insulation voltage of 2000 V<sub>RMS</sub>, complying with UL standards (File ref: E252906). All the packages above are RoHS compliant.(2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
I <sub>T(RMS)</sub>	8	A
V <sub>DRM</sub> / V <sub>RRM</sub>	600/800/1200	V



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40 - 150	°C
Operating junction temperature range	T <sub>j</sub>	-40 - 125	°C
Repetitive peak off-state voltage (T <sub>j</sub> =25°C)	V <sub>DRM</sub>	600/800/1200	V
Repetitive peak reverse voltage (T <sub>j</sub> =25°C)	V <sub>RRM</sub>	600/800/1200	V
RMS on-state current	TO-251/TO-220C TO-262 (T <sub>C</sub> =105°C)	8	A
	TO-220A(Ins)/ TO-220F(Ins) (T <sub>C</sub> =95°C)		
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I <sub>TSM</sub>	80	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	32	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> )	di/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	4	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Peak gate power	P <sub>GM</sub>	5	W

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	5	10	35	50	mA
$V_{GT}$		I - II -III	MAX	1.5				V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II -III	MIN	0.2				V
$I_L$	$I_G=1.2I_{GT}$	I -III	MAX	20	25	50	70	mA
		II		25	35	70	90	
$I_H$	$I_{TM}=100\text{mA}$		MAX	15	20	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	50	200	500	1000	V/ $\mu\text{s}$

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	25	50	mA
		IV		50	70	
$V_{GT}$		ALL	MAX	1.5		V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2		V
$I_L$	$I_G=1.2I_{GT}$	I -III-IV	MAX	50	70	mA
		II		70	90	
$I_H$	$I_{TM}=200\text{mA}$		MAX	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	200	500	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=11\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.95	V
$R_d$	Dynamic resistance	$T_j=125^{\circ}\text{C}$	40	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	1	mA

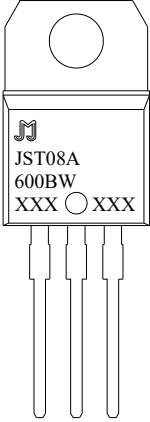
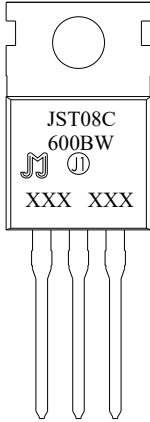
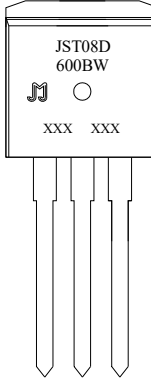
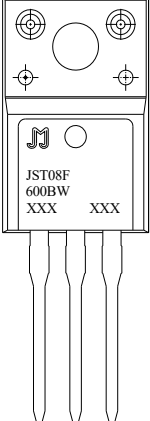
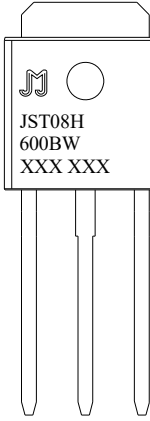
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	junction to case(AC)	TO-251/ TO-220C/TO-262	°C/W
		TO-220A(Ins)/ TO-220F(Ins)	

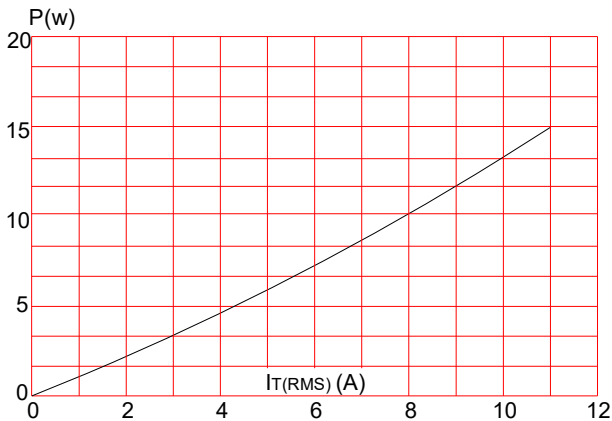
ORDERING INFORMATION

<p><b>J</b></p> <p>JieJie Microelectronics Co.,Ltd</p>	<p><b>ST</b></p> <p>Triacs</p> <p>I<sub>T(RMS)</sub>:8A</p> <p>A:TO-220A(Ins) F:TO-220F(Ins) C:TO-220C H:TO-251 D:TO-262</p>	<p><b>08</b></p> <p>600:V<sub>DRM</sub> /V<sub>RRM</sub>≥600V 800:V<sub>DRM</sub> /V<sub>RRM</sub>≥800V 1200:V<sub>DRM</sub> /V<sub>RRM</sub>≥1200V</p>	<p><b>C</b></p>	<p><b>-800</b></p>	<p><b>SW</b></p> <p>TW: I<sub>GT1-3</sub>≤5mA SW: I<sub>GT1-3</sub>≤10mA CW: I<sub>GT1-3</sub>≤35mA BW: I<sub>GT1-3</sub>≤50mA C: I<sub>GT1-3</sub>≤25mA I<sub>GT4</sub>≤50mA B: I<sub>GT1-3</sub>≤50mA I<sub>GT4</sub>≤70mA</p>	<p><b>-/</b></p> <p>Blank: Tube</p>
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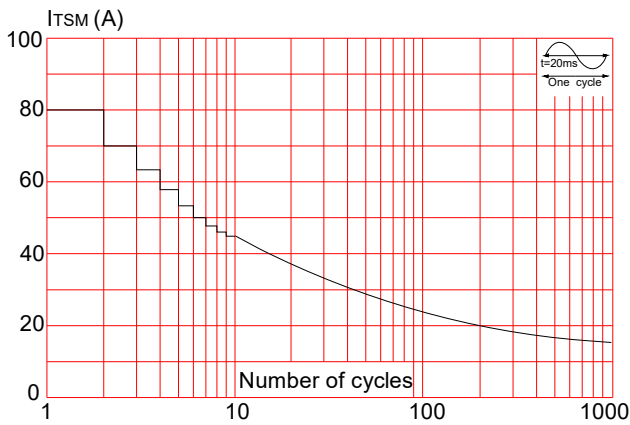
MARKING

 <p>JST08A 600BW XXX ○ XXX</p>	 <p>JST08C 600BW XXX XXX</p>	 <p>JST08D 600BW XXX XXX</p>
 <p>JST08F 600BW XXX XXX</p>	 <p>JST08H 600BW XXX XXX</p>	<p>XXX XXX</p> <p>Year _____ Month _____      Production Code</p>

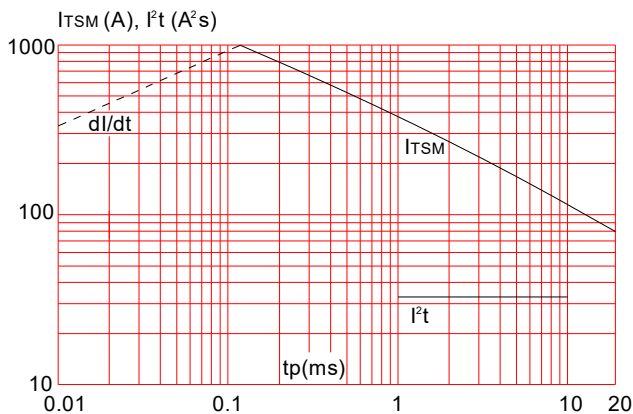
**FIG.1:** Maximum power dissipation versus RMS on-state current



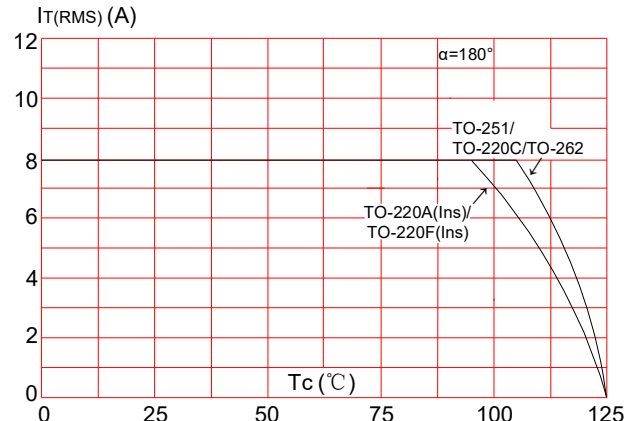
**FIG.3:** Surge peak on-state current versus number of cycles



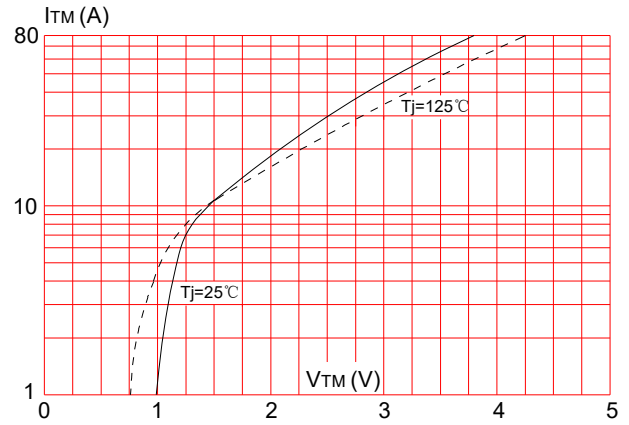
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



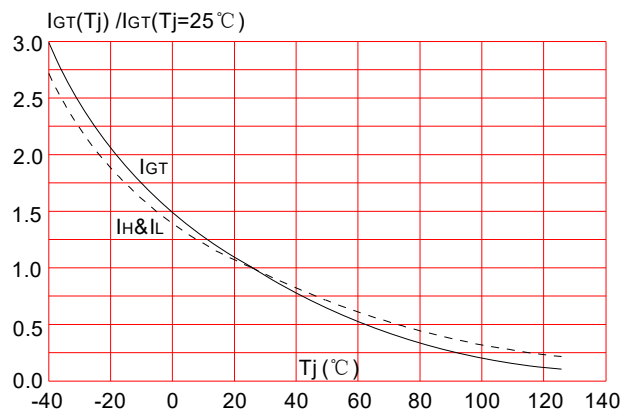
**FIG.2:** RMS on-state current versus case temperature



**FIG.4:** On-state characteristics (maximum values)



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature



## ORDERING INFORMATION

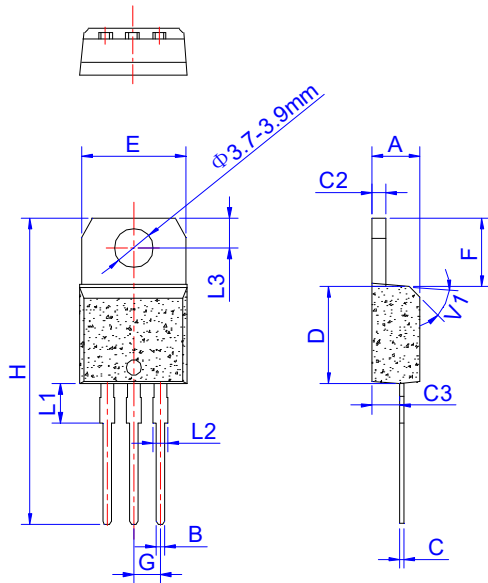
Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II -III			
JST08A-600(800/1200)TW	600/800/1200	5	TO-220A(Ins)	50	Tube
JST08A-600(800/1200)SW		10			
JST08A-600(800/1200)CW		35			
JST08A-600(800/1200)BW		50			
JST08C-600(800/1200)TW		5	TO-220C		
JST08C-600(800/1200)SW		10			
JST08C-600(800/1200)CW		35			
JST08C-600(800/1200)BW		50			
JST08F-600(800/1200)TW		5	TO-220F(Ins)		
JST08F-600(800/1200)SW		10			
JST08F-600(800/1200)CW		35			
JST08F-600(800/1200)BW		50			
JST08D-600(800/1200)TW		5	TO-262		
JST08D-600(800/1200)SW		10			
JST08D-600(800/1200)CW		35			
JST08D-600(800/1200)BW		50			
JST08H-600(800/1200)TW		5	TO-251	80	
JST08H-600(800/1200)SW		10			
JST08H-600(800/1200)CW		35			
JST08H-600(800/1200)BW		50			

Order code	Voltage V <sub>DRM</sub> /V <sub>RRM</sub> (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode	
		I - II -III	IV				
JST08A-600(800/1200)B	600/800/1200	50	70	TO-220A(Ins)	50	Tube	
JST08A-600(800/1200)C		25	50				
JST08C-600(800/1200)B		50	70	TO-220C			
JST08C-600(800/1200)C		25	50				
JST08F-600(800/1200)B		50	70	TO-220F(Ins)			
JST08F-600(800/1200)C		25	50				
JST08D-600(800/1200)B		50	70	TO-262			
JST08D-600(800/1200)C		25	50				
JST08H-600(800/1200)B		50	70	TO-251			80
JST08H-600(800/1200)C		25	50				

### Document Revision History

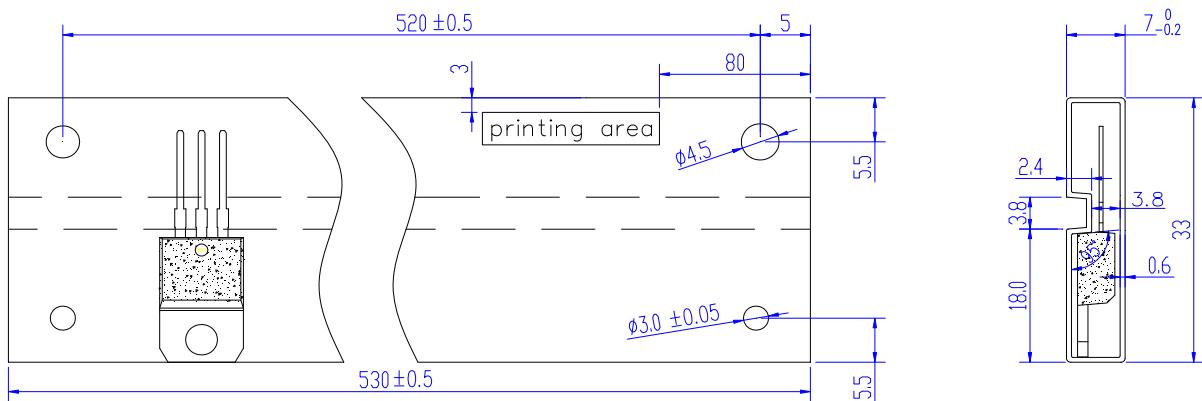
Date	Revision	Changes
March 29, 2021	9	Last update
Dec 7, 2021	10	Add V <sub>to</sub> & R <sub>d</sub> value
Jul 4, 2022	11	Delete Package TO-220B

**PACKAGE MECHANICAL DATA**



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.25		6.85	0.246		0.270
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	3.45		4.05	0.136		0.159
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

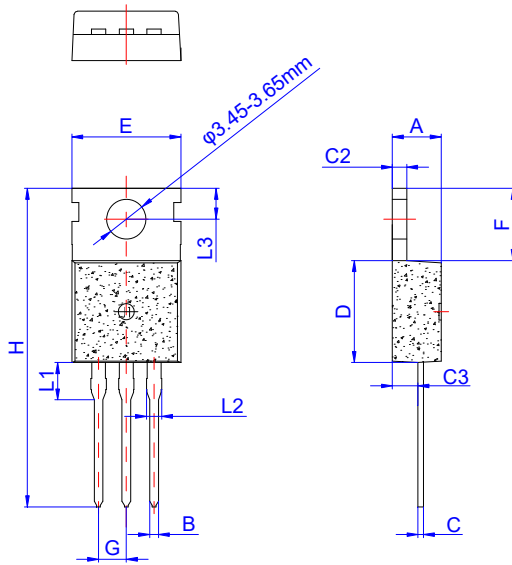
**DELIVERY MODE**



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	5,000

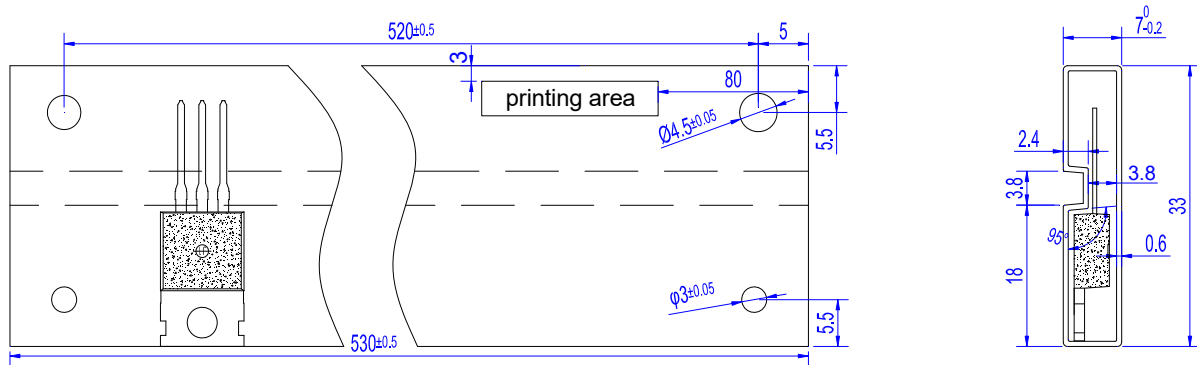


PACKAGE MECHANICAL DATA



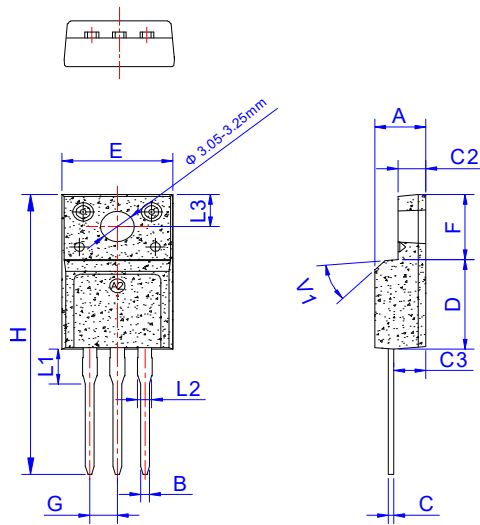
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



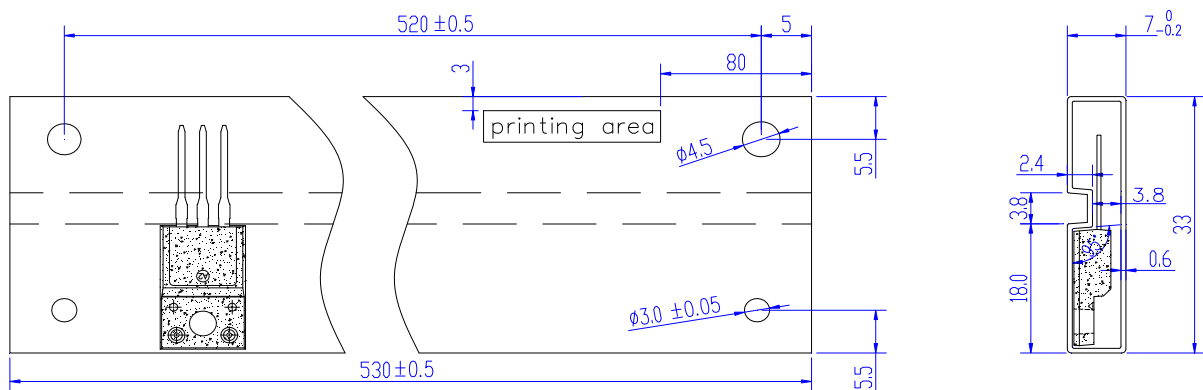
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TO-220C	TUBE	50	1,000	5,000

**PACKAGE MECHANICAL DATA**



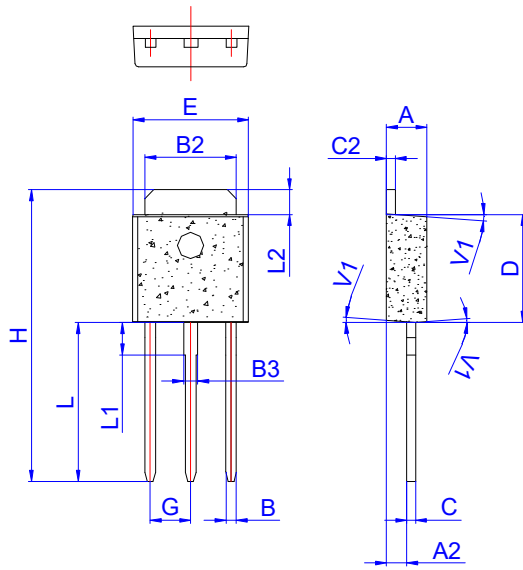
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	3.20		3.80	0.126		0.150
L2	1.14		1.70	0.045		0.067
L3	3.20		3.60	0.126		0.142
V1		45°			45°	

**DELIVERY MODE**



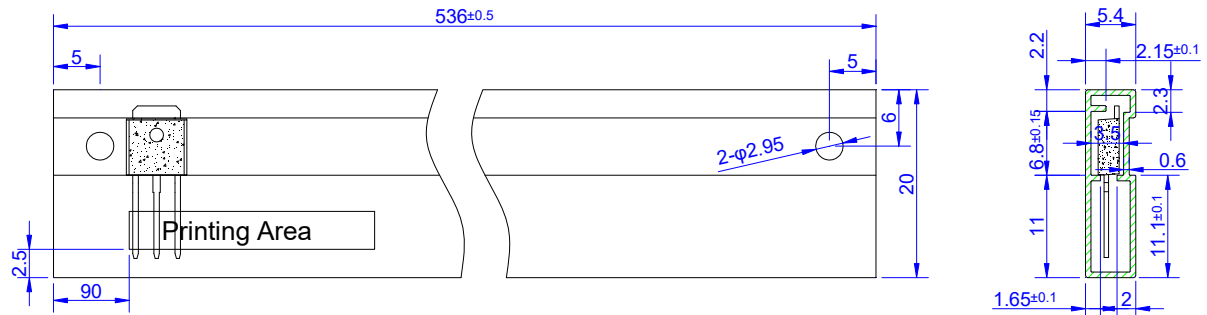
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TO-220F	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



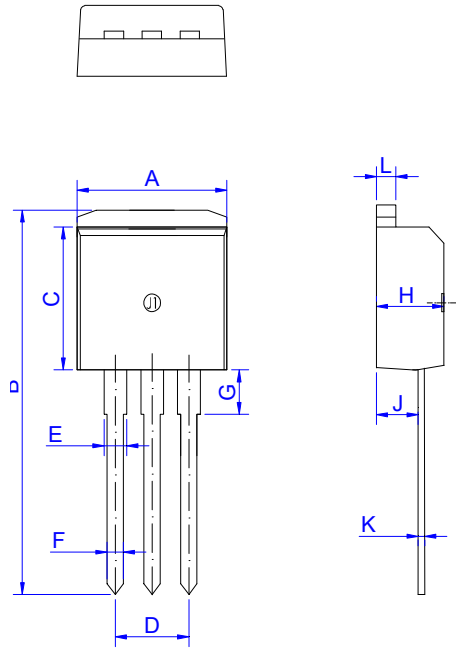
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	1.00		1.30	0.039		0.051
B	0.50		0.70	0.020		0.028
B2	5.10		5.40	0.200		0.213
B3	0.70		1.00	0.028		0.039
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	2.20		2.40	0.087		0.094
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		2.20	0.071		0.087
L2	1.25		1.55	0.049		0.061
V1		4°			4°	

DELIVERY MODE



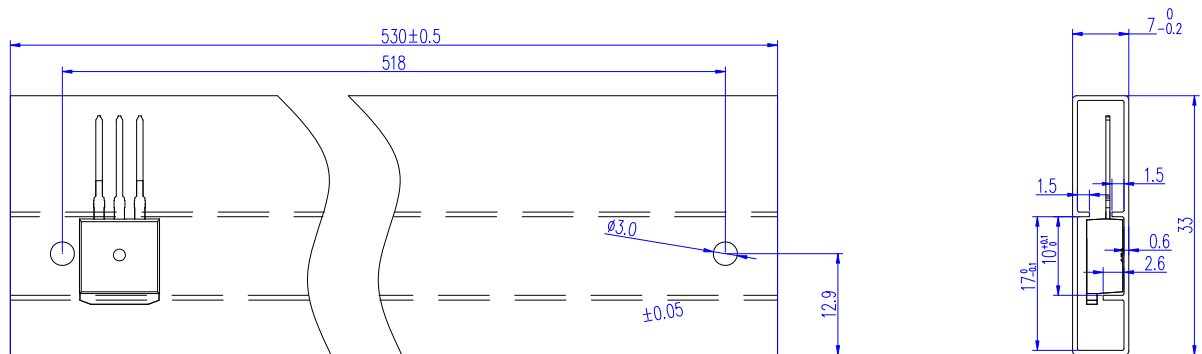
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TO-251	TUBE	80	4,000	20,000

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.95		10.20	0.392		0.402
B	23.85		24.05	0.939		0.947
C	9.40		9.60	0.370		0.378
D	4.95		5.25	0.195		0.207
E	1.35		1.40	0.053		0.055
F	0.80		0.85	0.031		0.033
G	2.70		3.40	0.106		0.134
H	4.45		4.55	0.175		0.179
J	2.20		2.60	0.087		0.102
K	0.48		0.52	0.019		0.020
L	1.30		1.35	0.051		0.053


DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-262	TUBE	50	1,000	5,000



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