

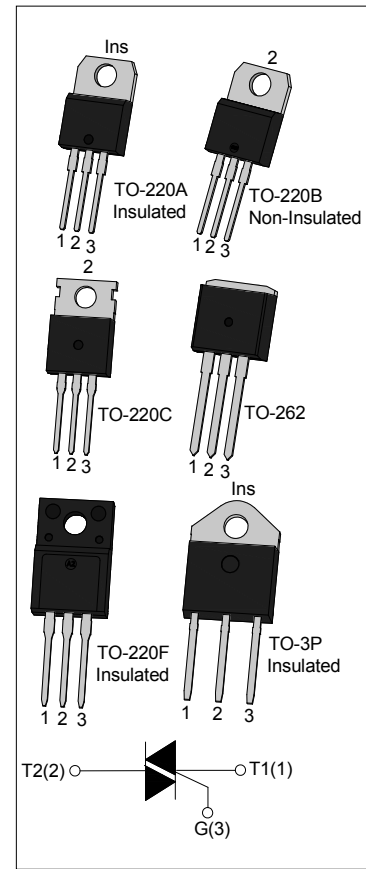


DESCRIPTION:

With high ability to withstand the shock loading of large current, JST24 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended focus on inductive load. From all three terminals to external heatsink, JST24A and JST24Z provide a rated insulation voltage of 2500 V_{RMS}, and JST24F provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards (File ref: E252906). All the packages listed above are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
I _{T(RMS)}	25	A
V _{DRM} / V _{RRM}	600/800/1200/1600	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40-150	°C
Operating junction temperature range	T _j	-40-125	°C
Repetitive peak off-state voltage (T _j =25°C)	V _{DRM}	600/800/1200/1600	V
Repetitive peak reverse voltage (T _j =25°C)	V _{RRM}	600/800/1200/1600	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) (T _c =70°C)	25	A
	TO-220C/ TO-220B(Non-Ins) (T _c =85°C)		
	TO-262 (T _c =50°C)		
	TO-3P(Ins) (T _c =95°C)		
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	250	A
I ² t value for fusing (t _p =10ms)	I ² t	340	A ² s

Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/dt	50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

V_{DRM}/V_{RRM} : 600/800V

Symbol	Test Condition	Quadrant		JST24-600/800V		Unit
				BW	CW	
I_{GT}	$V_D = 12V$ $R_L = 33\Omega$	I - II - III	MAX	50	35	mA
V_{GT}		I - II - III	MAX	1.3		V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III	MAX	80	70	mA
		II		100	80	
I_H	$I_T = 100\text{mA}$		MAX	75	50	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1000	500	V/ μ s

V_{DRM}/V_{RRM} : 1200/1600V

Symbol	Test Condition	Quadrant		JST24-1200V/1600V		Unit
				BW	CW	
I_{GT}	$V_D = 12V$ $R_L = 33\Omega$	I - II - III	MAX	50	35	mA
V_{GT}		I - II - III	MAX	1.5		V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III	MAX	90	70	mA
		II		100	80	
I_H	$I_T = 100\text{mA}$		MAX	80	60	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1500	1000	V/ μ s

V_{DRM}/V_{RRM} : 600/800V

Symbol	Test Condition	Quadrant	JST24-600/800V		Unit	
			B	C		
I_{GT}	$V_D = 12V R_L = 33\Omega$	I - II - III	MAX	50	25	mA
		IV		70	50	
V_{GT}		ALL	MAX	1.3		V
V_{GD}	$V_D = V_{DRM} T_j = 125^\circ C$ $R_L = 3.3K\Omega$	ALL	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III - IV	MAX	80	70	mA
		II		100	90	
I_H	$I_T = 100mA$		MAX	75	60	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN	500	200	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 35A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.5	V
V_{TO}	Threshold voltage	$T_j = 125^\circ C$	0.95	V
R_d	Dynamic resistance	$T_j = 125^\circ C$	13	m Ω
I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_j = 25^\circ C$	5	μA
I_{RRM}		$T_j = 125^\circ C$	3	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.5	$^\circ C/W$
		TO-220C/ TO-220B(Non-Ins)	1.1	
		TO-220F(Ins)	1.7	
		TO-262	2.1	
		TO-3P(Ins)	0.67	

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>ST</p> <p>Triacs</p> <p>$I_{T(RMS)}:25A$</p> <p>D:TO-262</p> <p>C:TO-220C</p> <p>Z:TO-3P(Ins)</p> <p>A:TO-220A(Ins)</p> <p>F:TO-220F(Ins)</p> <p>B:TO-220B(Non-Ins)</p>	<p>24</p>	<p>A</p>	<p>-600</p> <p>600:$V_{DRM}/V_{RRM} \geq 600V$</p> <p>800:$V_{DRM}/V_{RRM} \geq 800V$</p> <p>1200:$V_{DRM}/V_{RRM} \geq 1200V$</p> <p>1600:$V_{DRM}/V_{RRM} \geq 1600V$</p>	<p>BW</p> <p>BW:$I_{GT1-3} \leq 50mA$</p> <p>CW:$I_{GT1-3} \leq 35mA$</p> <p>B:$I_{GT1-3} \leq 50mA$ $I_{GT4} \leq 70mA$</p> <p>C:$I_{GT1-3} \leq 25mA$ $I_{GT4} \leq 50mA$</p>	<p>-/</p> <p>Blank: Tube</p>
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MARKING

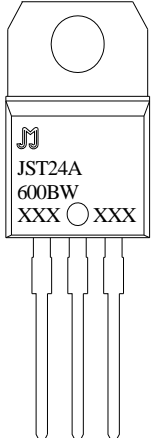
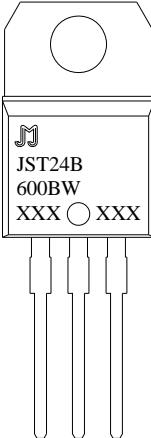
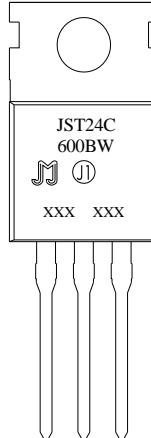
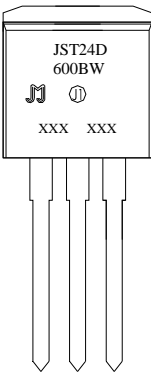
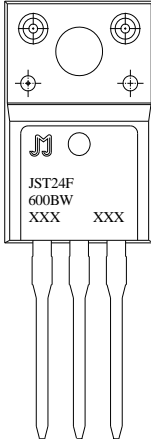
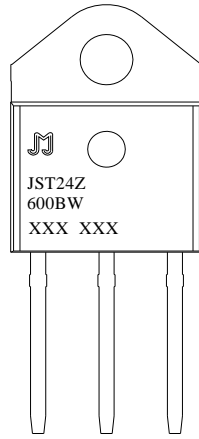
 <p>JST24A 600BW XXX ○ XXX</p>	 <p>JST24B 600BW XXX ○ XXX</p>	 <p>JST24C 600BW XXX ○ XXX</p>
 <p>JST24D 600BW XXX ○ XXX</p>	 <p>JST24F 600BW XXX ○ XXX</p>	 <p>JST24Z 600BW XXX ○ XXX</p>
<p>XXX XXX</p> <p>Year _____ Production Code _____</p> <p>Month _____</p>		

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

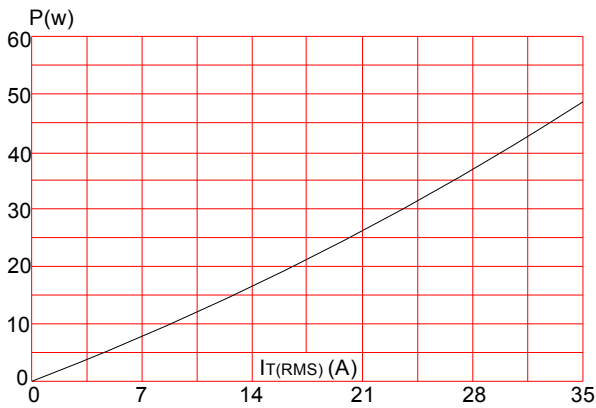


FIG.3: Surge peak on-state current versus number of cycles

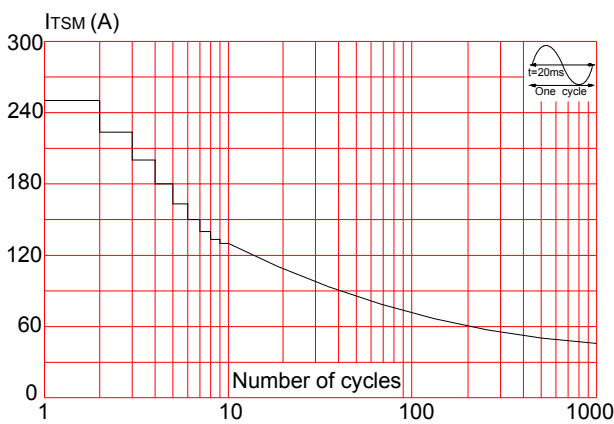


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

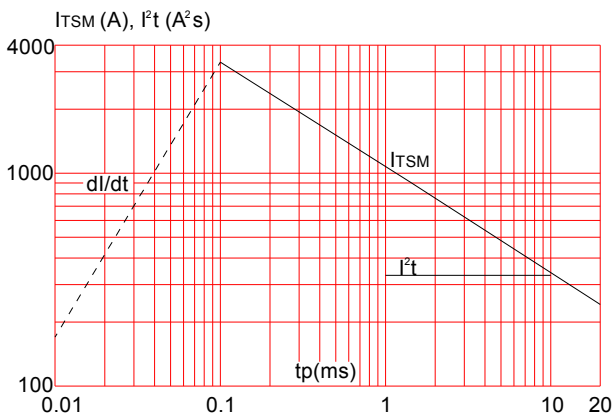


FIG.2: RMS on-state current versus case temperature

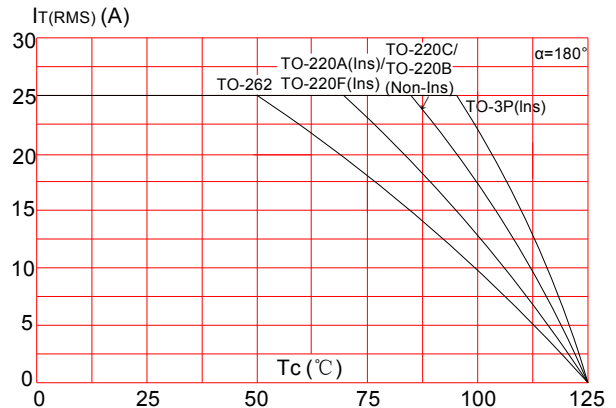


FIG.4: On-state characteristics (maximum values)

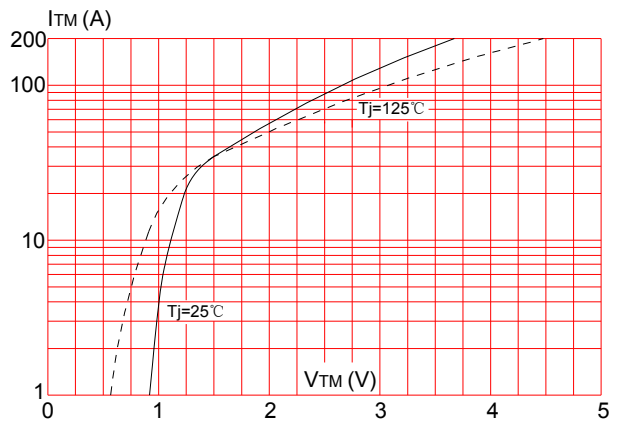
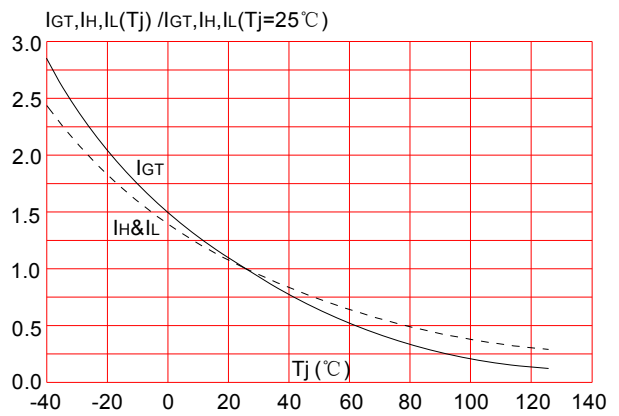


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



ORDERING INFORMATION

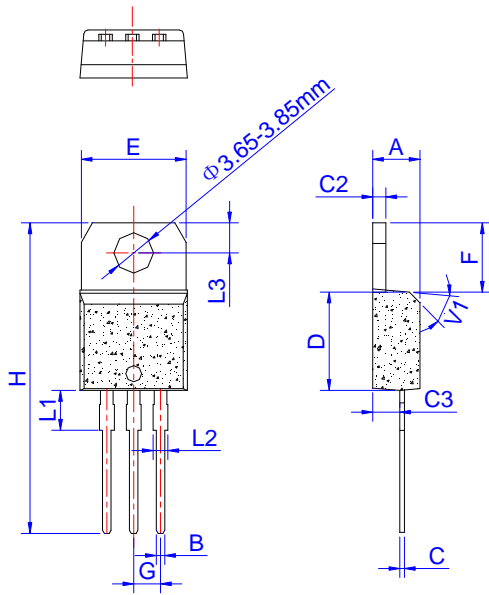
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT (mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III				
JST24※ -600(800/1200/1600)BW	600/800/ 1200/1600	50		TO-220A(Ins)/ TO-220F(Ins)/ TO-220B/ TO-220C/ TO-262	50	Tube
JST24※ -600(800/1200/1600)CW	600/800/ 1200/1600	35				
JST24Z- 600(800/1200/1600)BW	600/800/ 1200/1600	50		TO-3P	30	Tube
JST24Z -600(800/1200/1600)CW	600/800/ 1200/1600	35				
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
JST24※-600(800)B	600/800	50	70	TO-220A(Ins)/ TO-220F(Ins)/ TO-220B/ TO-220C/ TO-262	50	Tube
JST24※-600(800)C	600/800	25	50			
JST24Z-600(800)B	600/800	50	70	TO-3P	30	Tube
JST24Z-600(800)C	600/800	25	50			

※ refers to a series of packages

Document Revision History

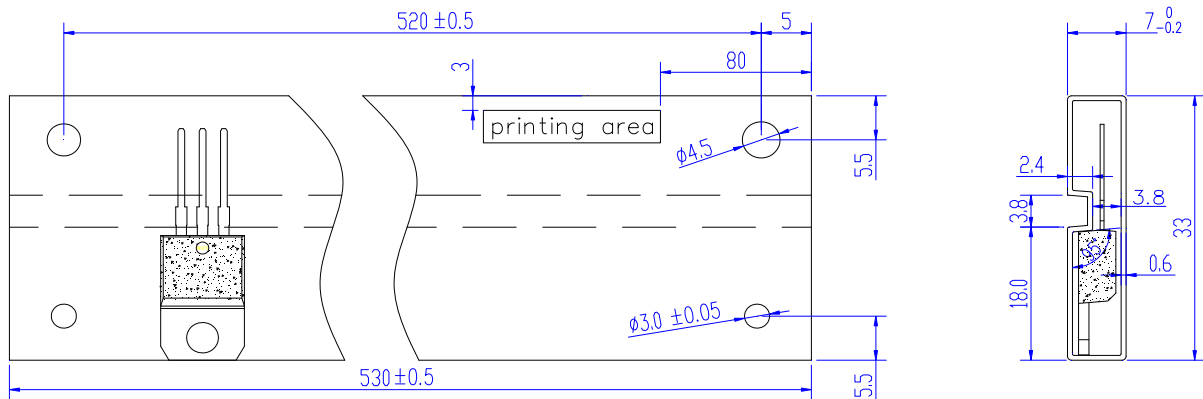
Date	Revision	Changes
April 9, 2021	8	Last update
Sep 23, 2021	9	Add Vto & Rd value

PACKAGE MECHANICAL DATA



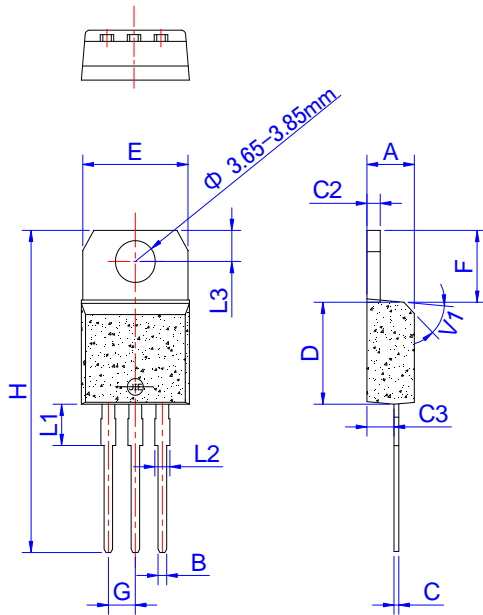
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	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

DELIVERY MODE



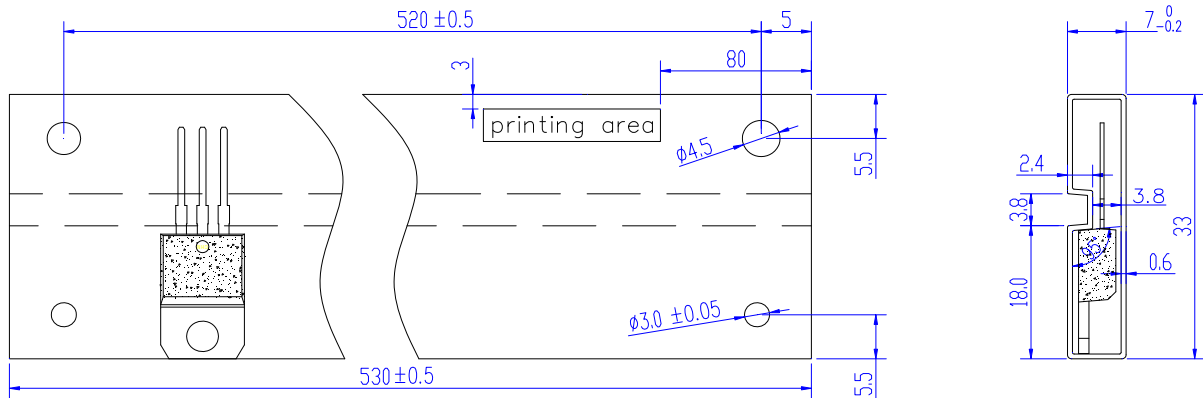
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



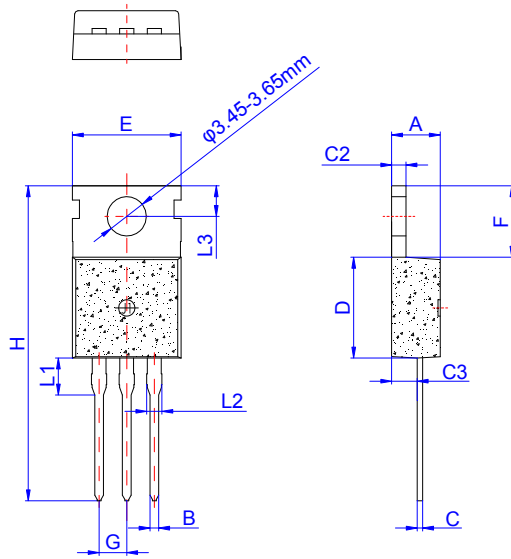
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.147	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

DELIVERY MODE



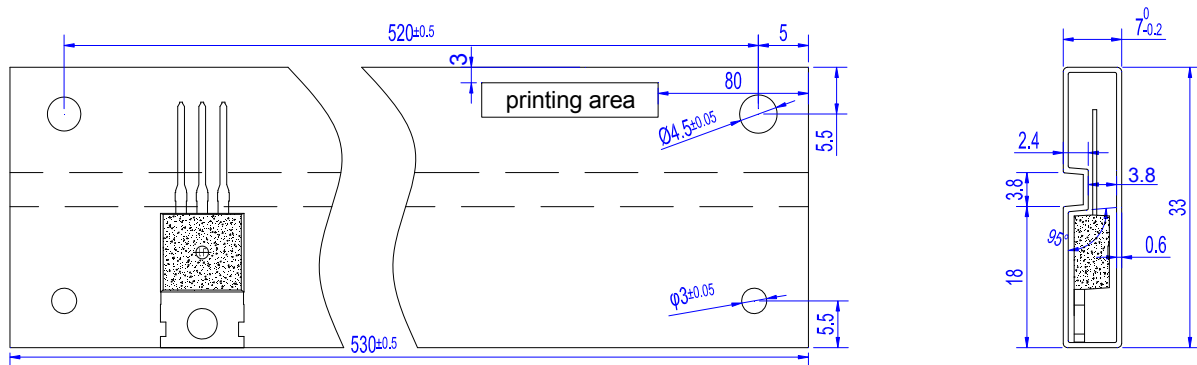
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TO-220B	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



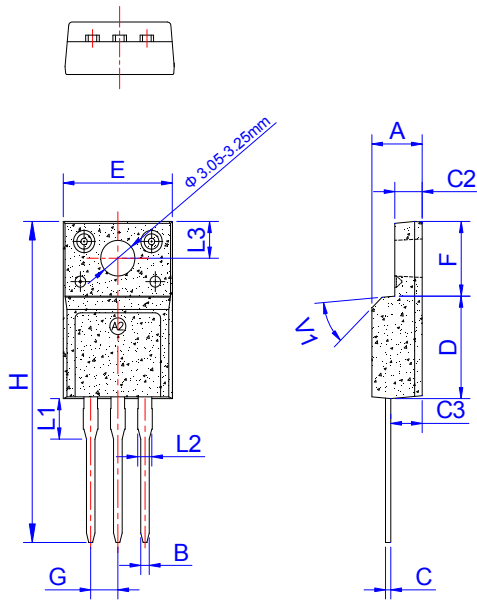
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



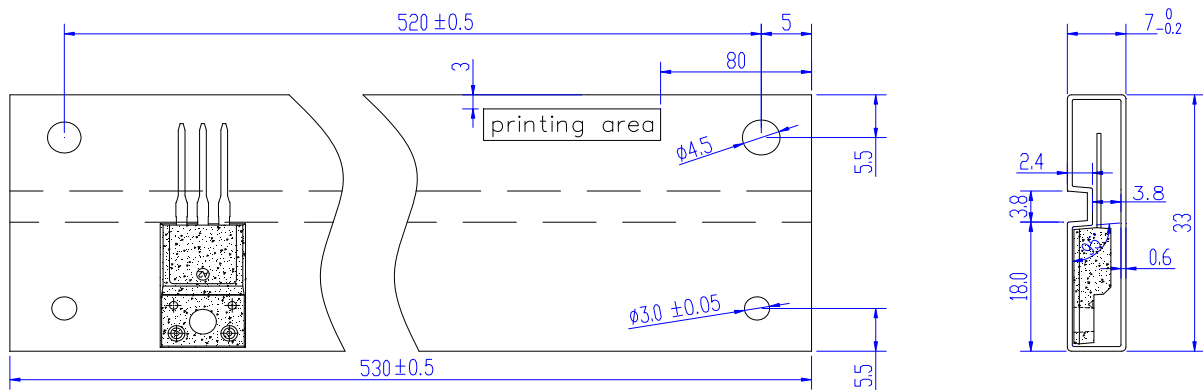
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TO-220C	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



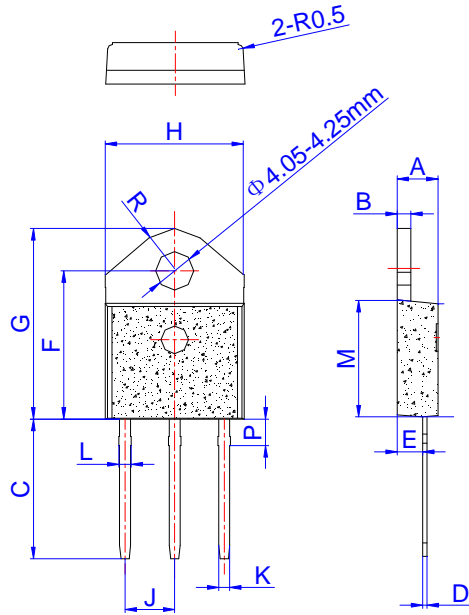
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	Millimeters			Inches		
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B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		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		3.63			0.143	
L2		1.14	1.70		0.045	0.067
L3		3.30			0.130	
V1		45°			45°	

DELIVERY MODE



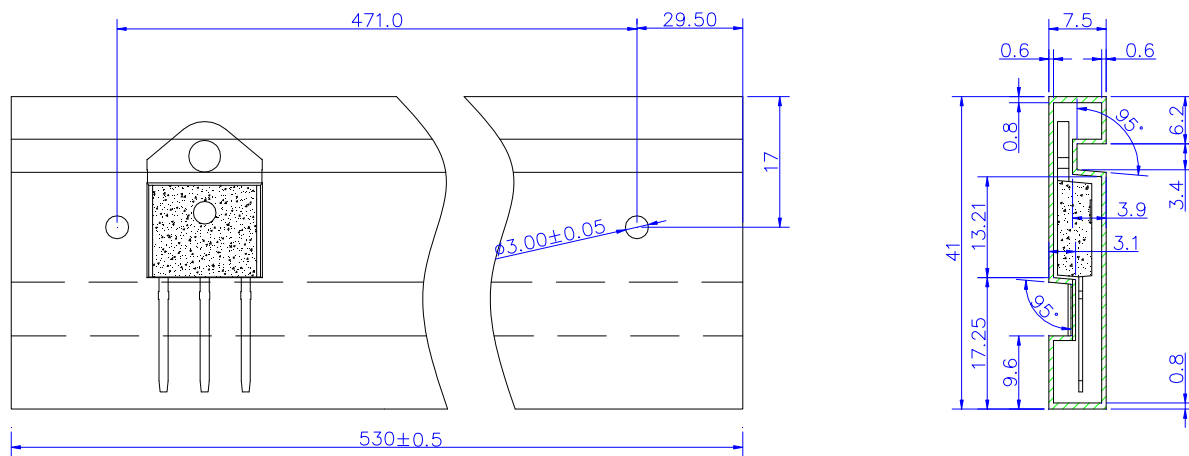
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TO-220F	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



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	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.25		1.45	0.049		0.057
M	12.37		12.77	0.487		0.503
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-3P	TUBE	30	450	2,250



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