



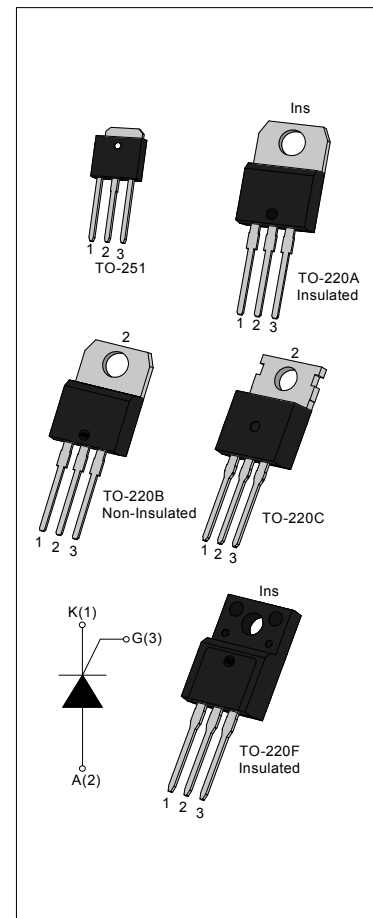
DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT151 series of silicon controlled rectifiers provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

From all three terminals to external heatsink, JCT151A provides a rated insulation voltage of 2500 V_{RMS}, and JCT151F 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	Symbol
V _{DRM} / V _{RRM}	650/800	V
I _{T(RMS)}	12	A
I _{GT}	≤15	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T _{stg}	-40 - 150	°C
Operating junction temperature range		T _j	-40 - 150	°C
Repetitive peak off-state voltage (T _j =25°C)		V _{DRM}	650/800	V
Repetitive peak reverse voltage (T _j =25°C)		V _{RRM}	650/800	V
RMS on-state current	TO-251/ TO-220C/ TO-220B (Non-Ins) (T _C =130°C)	I _{T(RMS)}	12	A
	TO-220A (Ins)/ TO-220F (Ins) (T _C =125°C)			
Non repetitive surge peak on-state current (F=50Hz t _p =10ms)		I _{TSM}	120	A

Non repetitive surge peak on-state current (F=60Hz tp=8.3ms)	I_{TSM}	132	A
I^2t value for fusing (tp=10ms)	I^2t	72	A ² s
Repetitive rate of rise of on-state current ($I_G=2 \times I_{GT}$)	dI_T/dt	50	A/ μ s
Peak gate current	I_{GM}	2	A
Peak gate power	P_{GM}	5	W
Average gate power dissipation	$P_{G(AV)}$	0.5	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	4	15	mA
V_{GT}		-	0.75	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=150^\circ\text{C } R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	12	40	mA
I_H	$I_T=500\text{mA}$	-	12	30	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_j=150^\circ\text{C}$	50	-	-	V/ μ s
dV/dt	$V_D=436\text{V}$ Gate Open $T_j=150^\circ\text{C}$	80	-	-	V/ μ s
t_{on}	$I_{GT}=20\text{mA } I_A=100\text{mA } I_R=10\text{mA}$ $T_j=25^\circ\text{C}$	-	2	-	μ s
t_{off}		-	30	-	μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=23\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
V_{TO}	Threshold voltage	$T_j=150^\circ\text{C}$	0.85	V
R_d	Dynamic resistance	$T_j=150^\circ\text{C}$	30	m Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μ A
I_{RRM}		$T_j=150^\circ\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	TO-251/ TO-220C/ TO-220B (Non-Ins)	1.3	$^{\circ}\text{C/W}$
		TO-220A (Ins)	1.6	
		TO-220F (Ins)	1.7	

ORDERING INFORMATION

<u>J</u>	<u>CT</u>	<u>151</u>	<u>B</u>	<u>-650R</u>	<u>-/</u>
JieJie Microelectronics Co.,Ltd	SCRs	$I_{T(RMS)}: 12A$			Blank: Tube
		B:TO-220B(Non-Ins) H:TO-251 A:TO-220A (Ins) C:TO-220C F:TO-220F(Ins)		650R: $V_{DRM} / V_{RRM} \geq 650V$ 800R: $V_{DRM} / V_{RRM} \geq 800V$	

MARKING

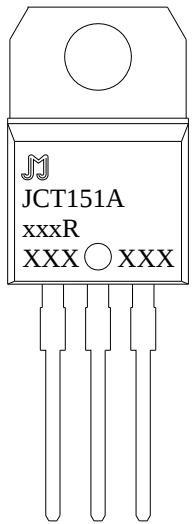
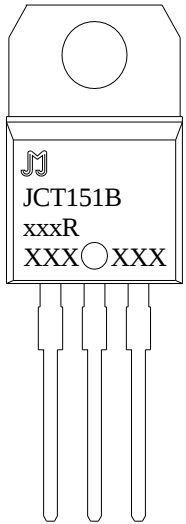
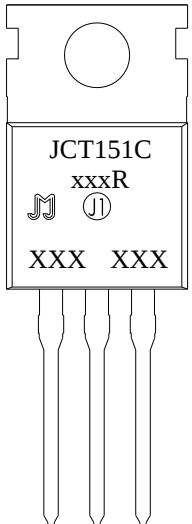
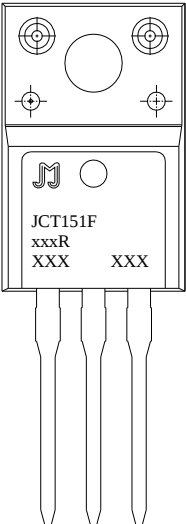
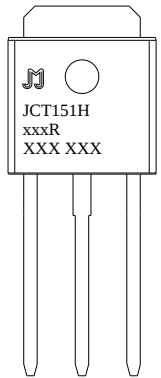
 JCT151A xxxR XXX ○ XXX	 JCT151B xxxR XXX ○ XXX
TO-220A (Ins)	TO-220B (Non-Ins)
 JCT151C xxxR J J XXX XXX	 JCT151F xxxR XXX XXX
TO-220C	TO-220F (Ins)
 JCT151H xxxR XXX XXX	XXX XXX Year ——— Production Month ——— Code NOTE: xxxR--- 650R/800R
TO-251	

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

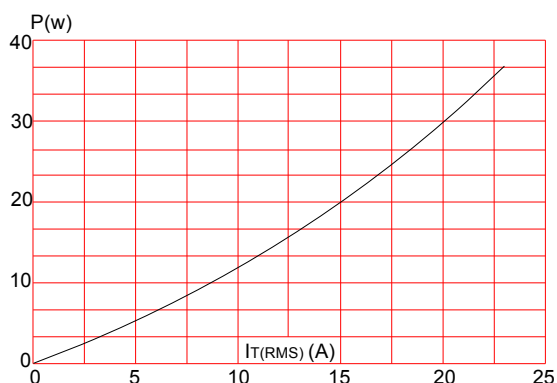


FIG.3: Surge peak on-state current versus number of cycles

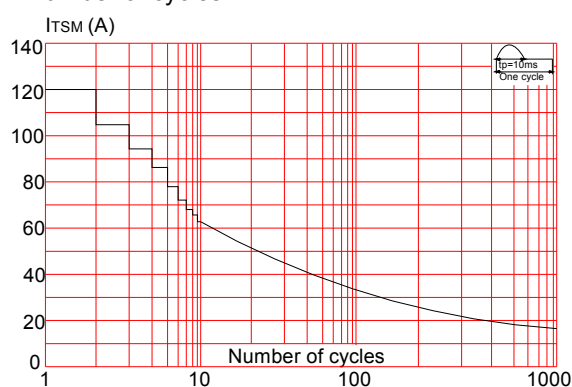


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I^2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

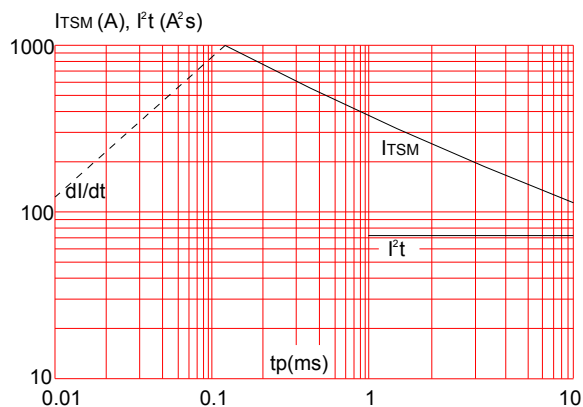


FIG.2: RMS on-state current versus case temperature

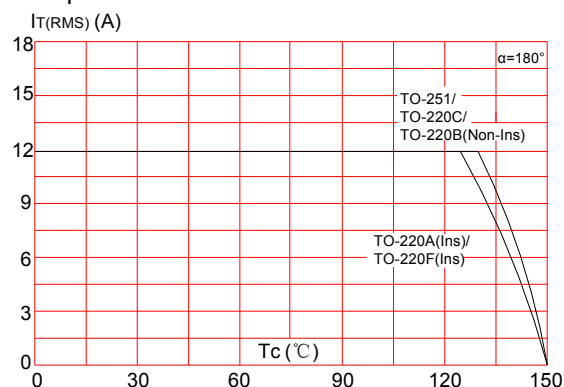


FIG.4: On-state characteristics (maximum values)

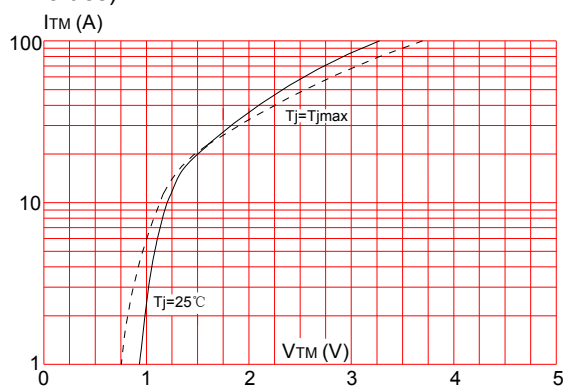
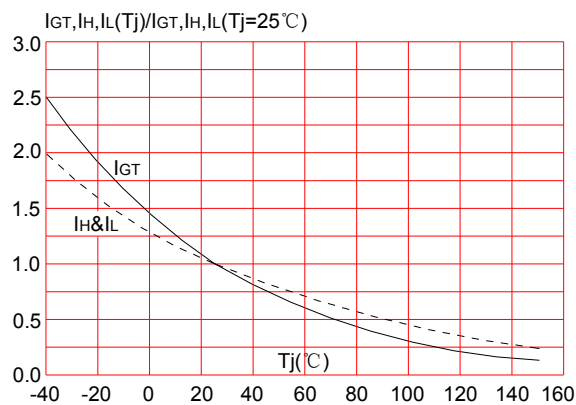


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



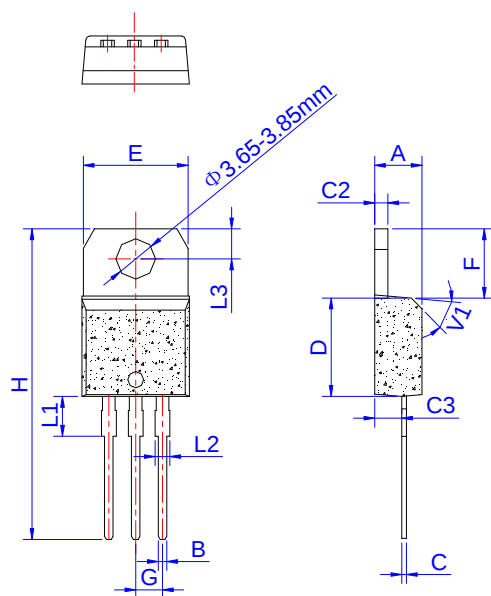
ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT151A-650/800R	650/800	15	TO-220A(Ins)	50	Tube
JCT151B-650/800R			TO-220B(Non-Ins)		
JCT151C-650/800R			TO-220C		
JCT151F-650/800R			TO-220F(Ins)		
JCT151H-650/800R			TO-251	80	

Document Revision History

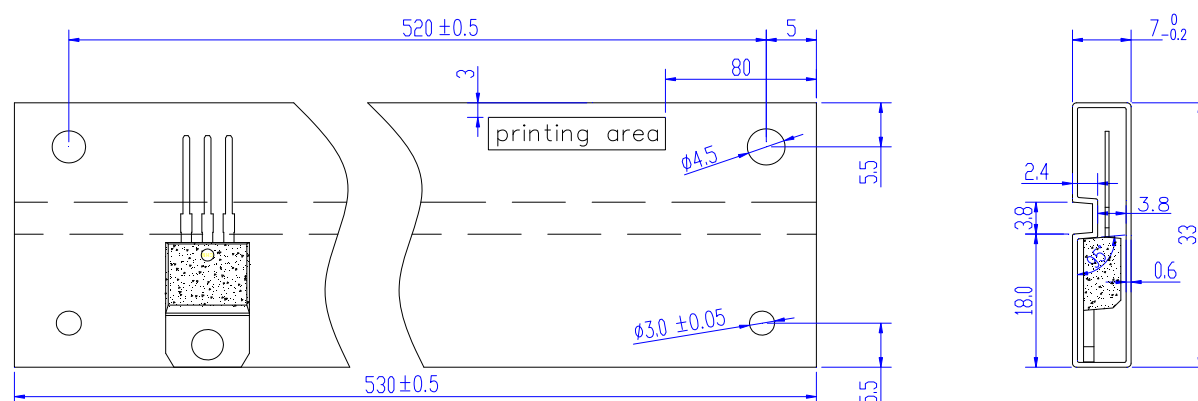
Date	Revision	Changes
Apr 1, 2019	14	Last update
Nov 15, 2021	15	Renew VTO & Rd

PACKAGE MECHANICAL DATA



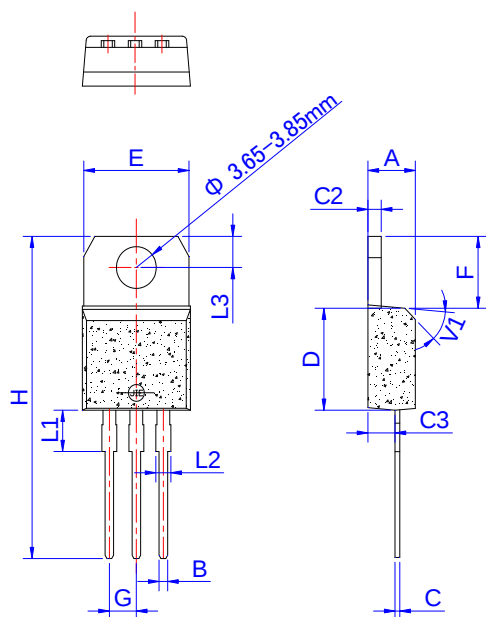
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094		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



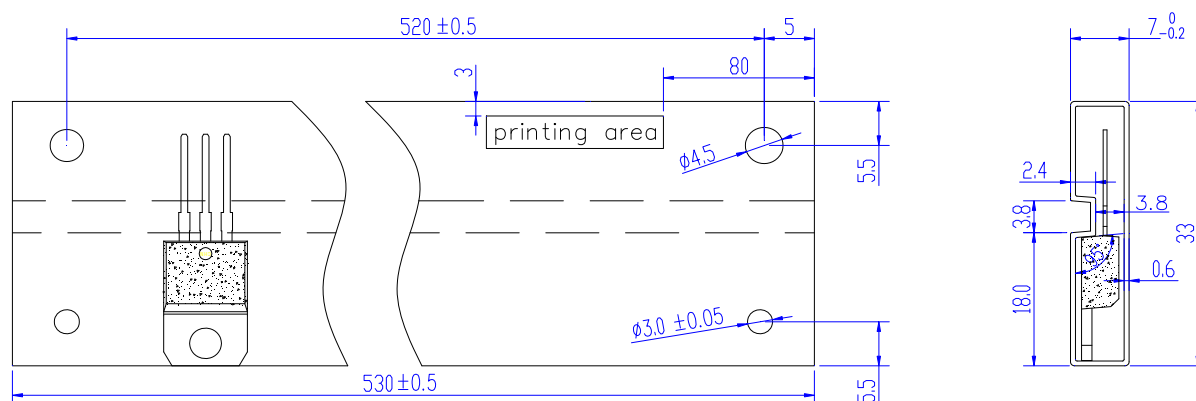
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TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



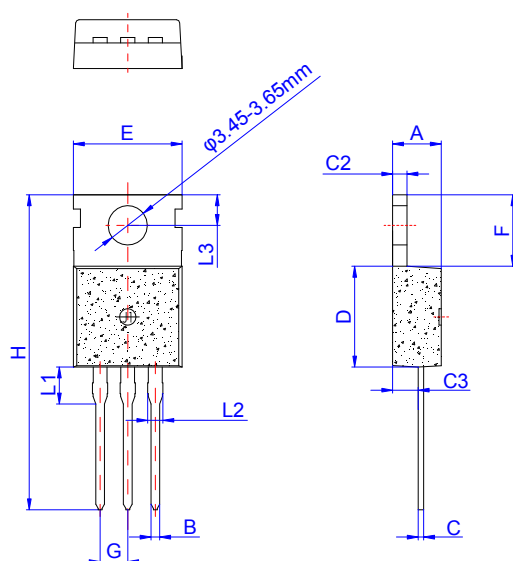
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40		2.70	0.094		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



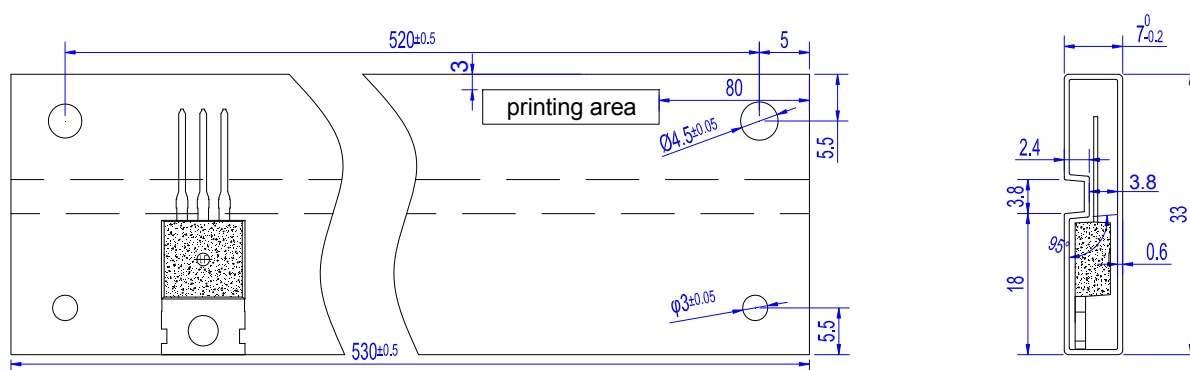
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TO-220B	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



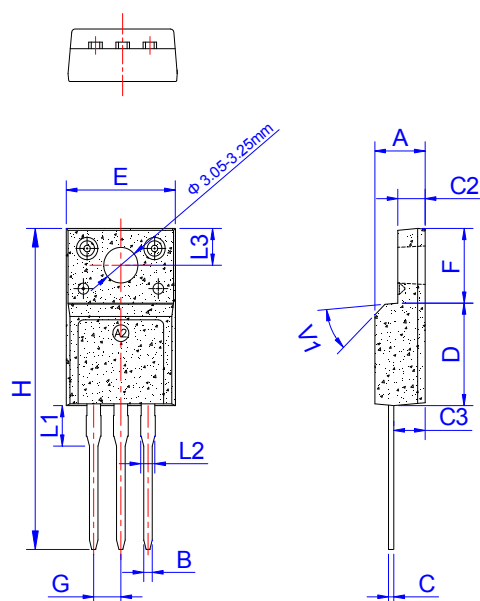
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
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



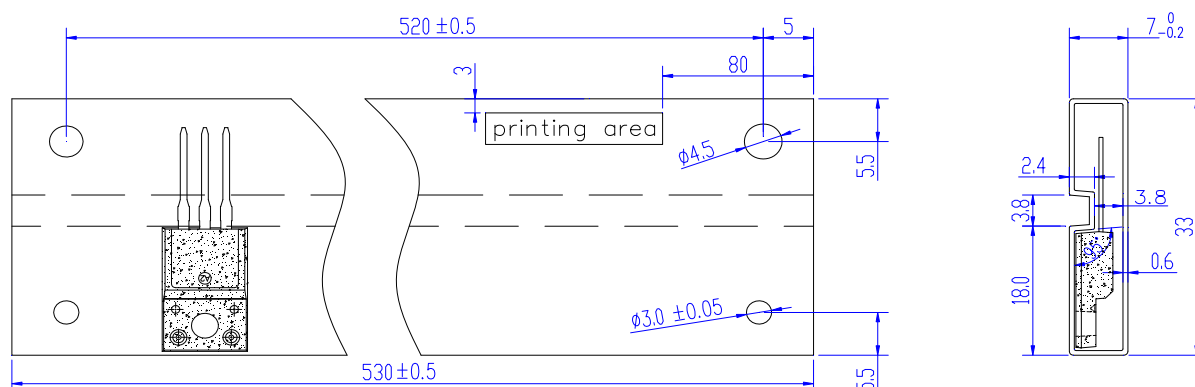
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



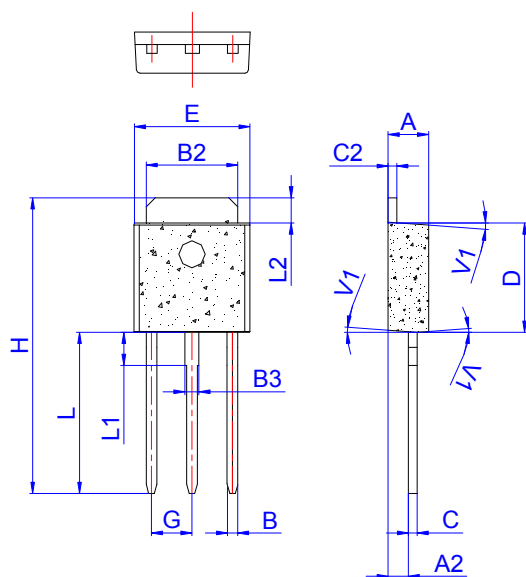
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

DELIVERY MODE



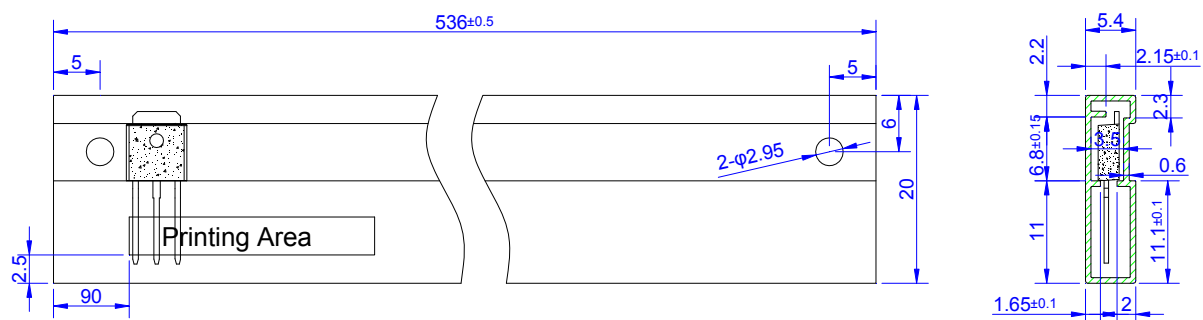
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TO-220F	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
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		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-251	TUBE	80	4,000	20,000



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