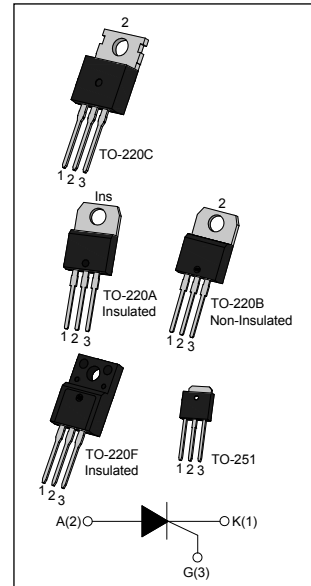




DESCRIPTION:

With high ability to withstand the shock loading of large current, JCTx12 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, JCTx12A provides a rated insulation voltage of 2500 V_{RMS}, and JCTx12F provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	JCT612	JCT812
V _{DRM} / V _{RRM}	600V	800V
I _{T(RMS)}	12A	
I _{GT}	≤15mA	

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}	600/800	V
Repetitive peak reverse voltage(T _j =25°C)	V _{RRM}	600/800	V
Non repetitive surge peak Off-state voltage	V _{DSM}	V _{DRM} +100	V
Non repetitive peak reverse voltage	V _{RSM}	V _{RRM} +100	V
RMS on-state current	TO-251 (T _C =120°C)	12	A
	TO-220A(Ins)/ TO-220F(Ins) (T _C =110°C)		

RMS on-state current	TO-220B(Non-Ins)/ TO-220C (T _C =125°C)	I _{T(RMS)}	12	A
Non repetitive surge peak on-state current (t _p =10ms)		I _{TSM}	140	A
I ² t value for fusing (t _p =10ms)		I ² t	98	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})		di/dt	50	A/μs
Peak gate current		I _{GM}	4	A
Average gate power dissipation		P _{G(AV)}	1	W
Peak gate power		P _{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I _{GT}	V _D =12V R _L =33Ω	-	-	15	mA
V _{GT}		-	-	1.5	V
V _{GD}	V _D =V _{DRM} T _j =150°C R _L =3.3KΩ	0.2	-	-	V
I _L	I _G =1.2I _{GT}	-	-	60	mA
I _H	I _T =500mA	-	-	50	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =150°C	200	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V _{TM}	I _{TM} =24A t _p =380μs	T _j =25°C	1.55	V
V _{TO}	Threshold voltage	T _j =150°C	0.85	V
R _d	Dynamic resistance	T _j =150°C	30	mΩ
I _{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
I _{RRM}		T _j =150°C	2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	junction to case(AC)	TO-220A(Ins)	2.3
		TO-220B(Non-Ins)/ TO-220C	1.3
		TO-220F(Ins)	2.5
		TO-251	1.8

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>CT</p> <p>SCRs</p> <p>6:V_{DRM}/V_{RRM}≥600V 8:V_{DRM}/V_{RRM}≥800V</p>	<p>6</p> <p>I_{T(RMS)}:12A</p>	<p>12</p>	<p>B</p> <p>H:TO-251 C:TO-220C A:TO-220A(Ins) F:TO-220F(Ins) B:TO-220B(Non-Ins)</p>	<p>-/</p> <p>Blank: Tube</p>
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MARKING

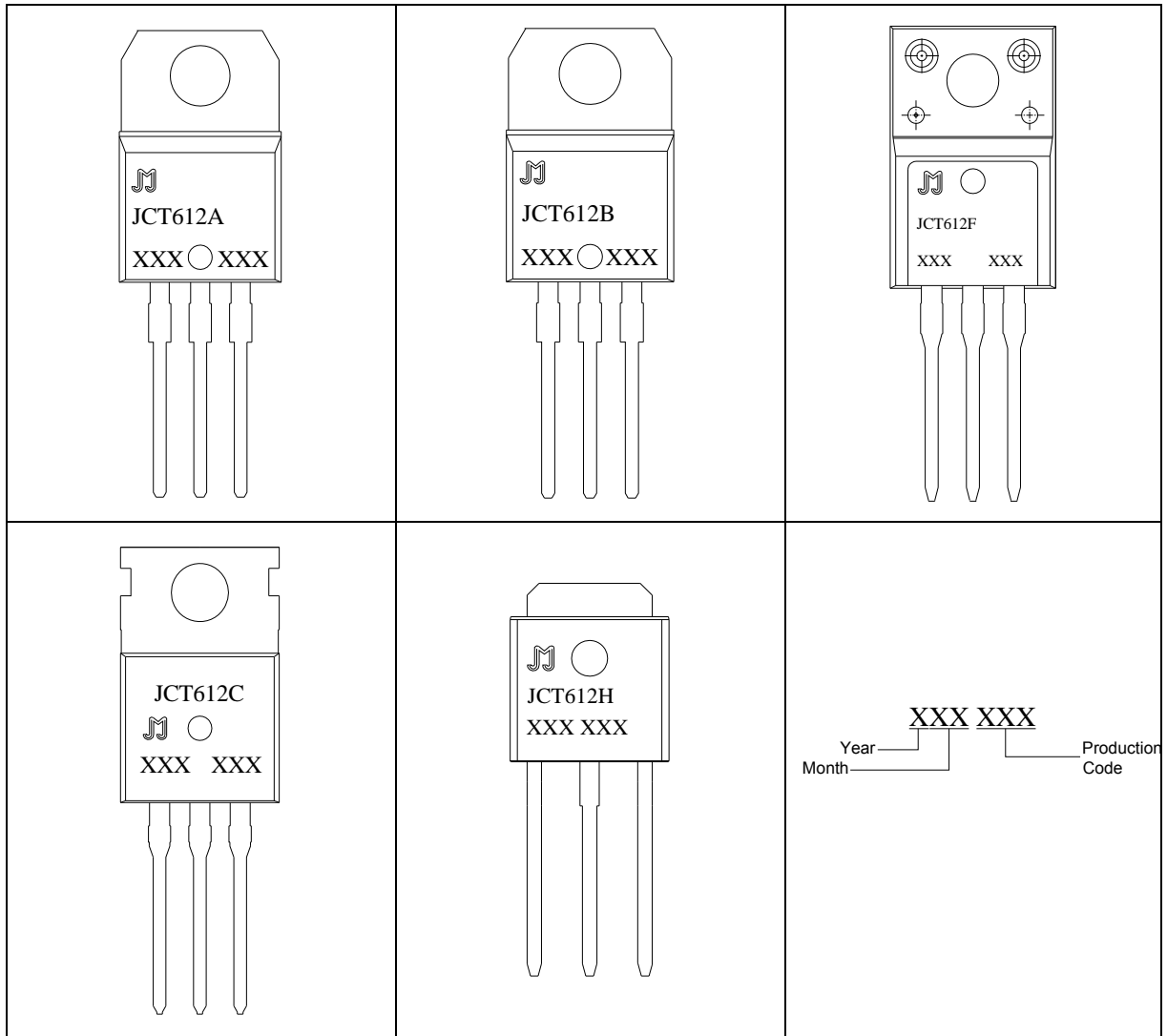


FIG.1: Maximum power dissipation versus RMS on-state current

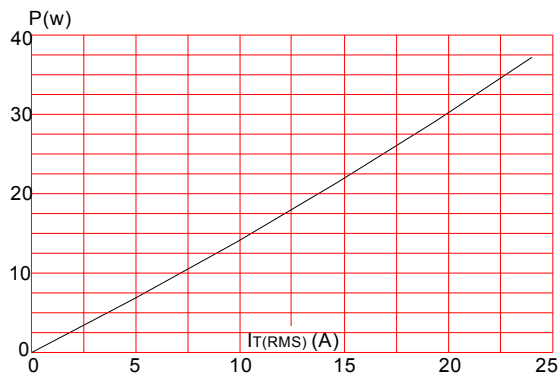


FIG.2: RMS on-state current versus case temperature

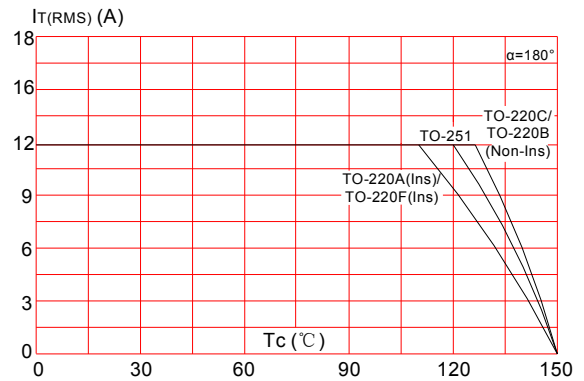


FIG.3: Surge peak on-state current versus number of cycles

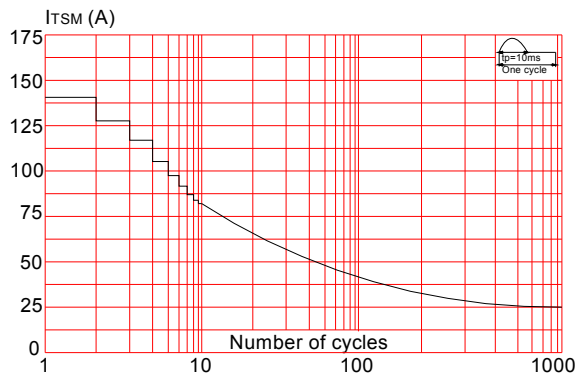


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

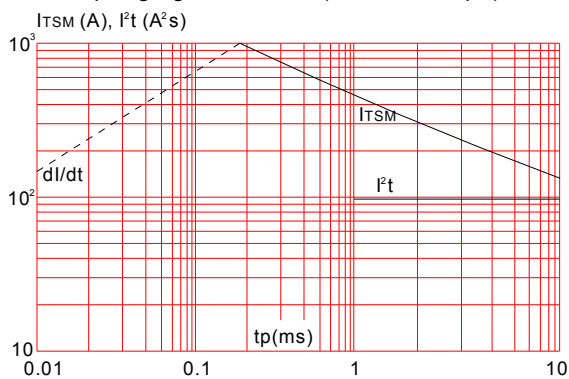


FIG.4: On-state characteristics (maximum values)

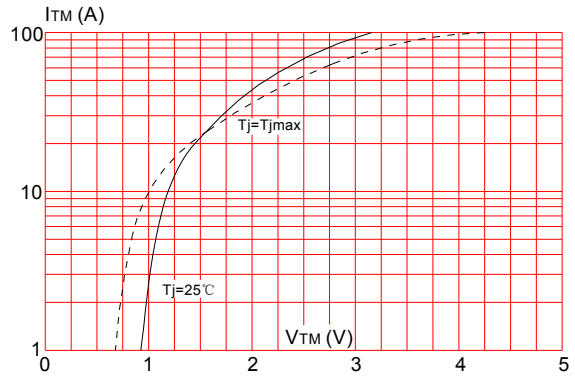
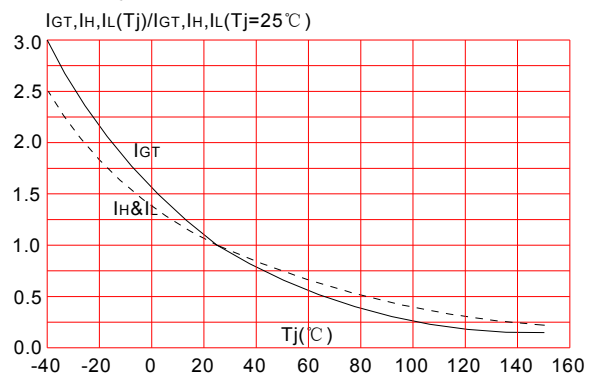


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



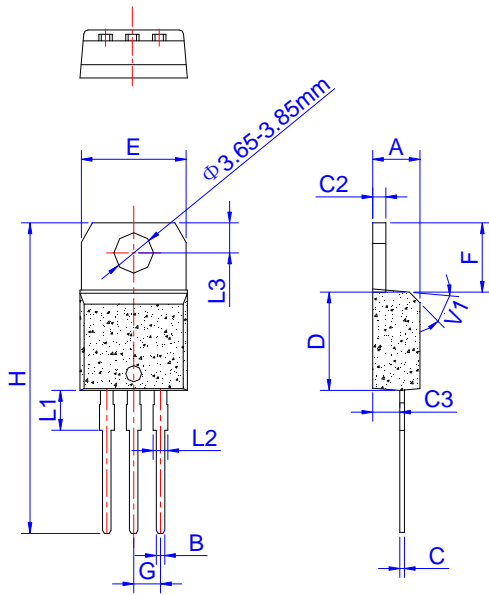
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT612A/812A	600/800	15	TO-220A	50	Tube
JCT612B/812B			TO-220B		
JCT612C/812C			TO-220C		
JCT612F/812F			TO-220F		
JCT612H/812H			TO-251	80	

Document Revision History

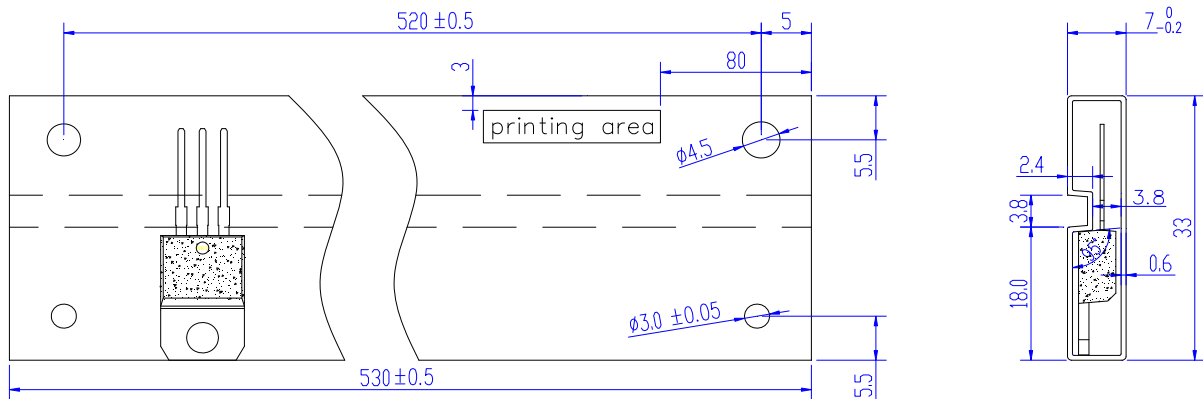
Date	Revision	Changes
March 24, 2021	11	Last update
Nov 8, 2021	12	Add Vto & Rd value

PACKAGE MECHANICAL DATA



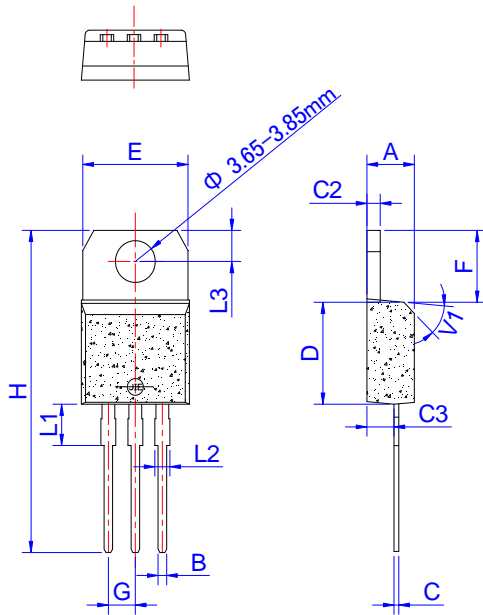
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094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



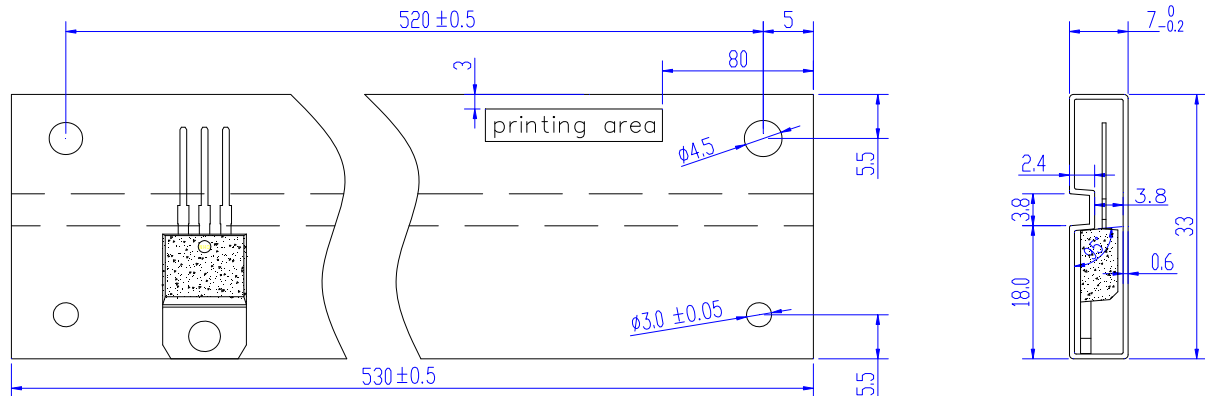
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TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



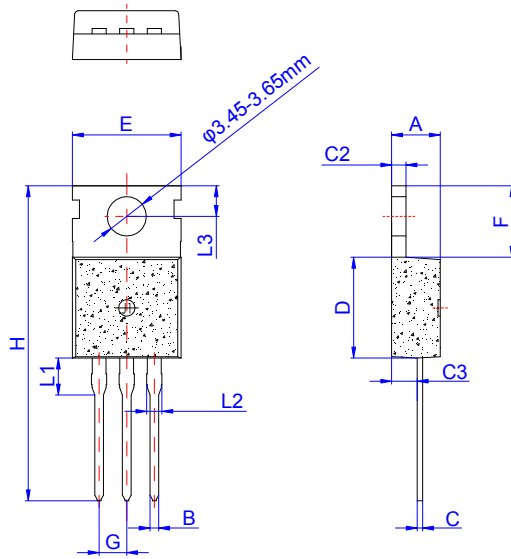
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40		2.70	0.094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



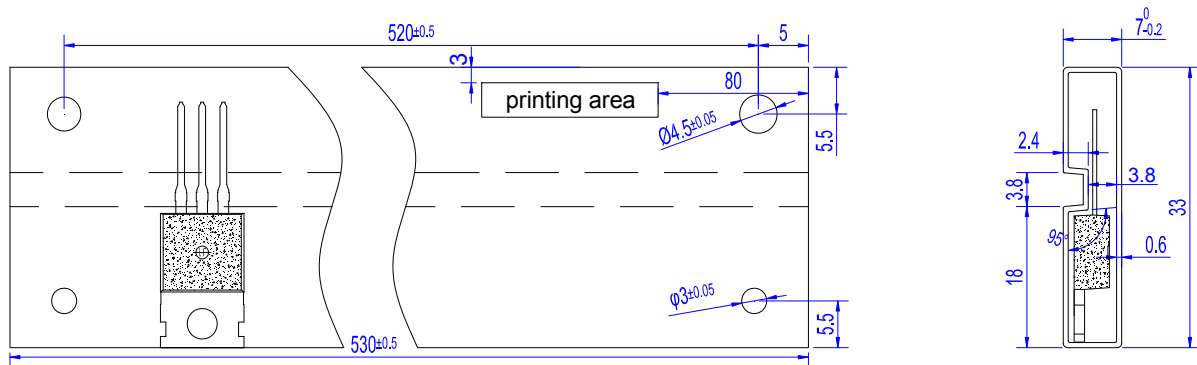
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220B	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



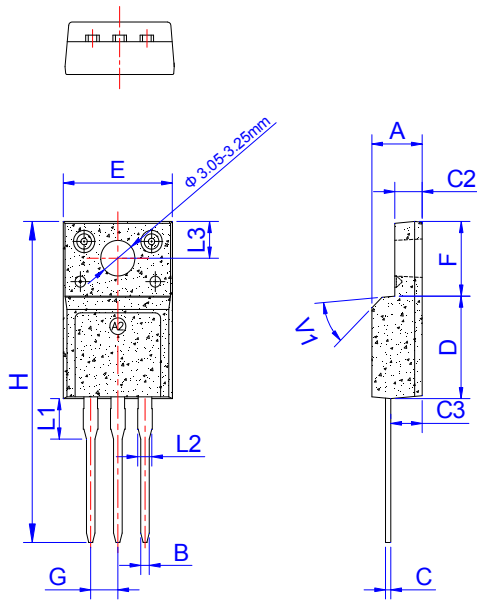
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	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



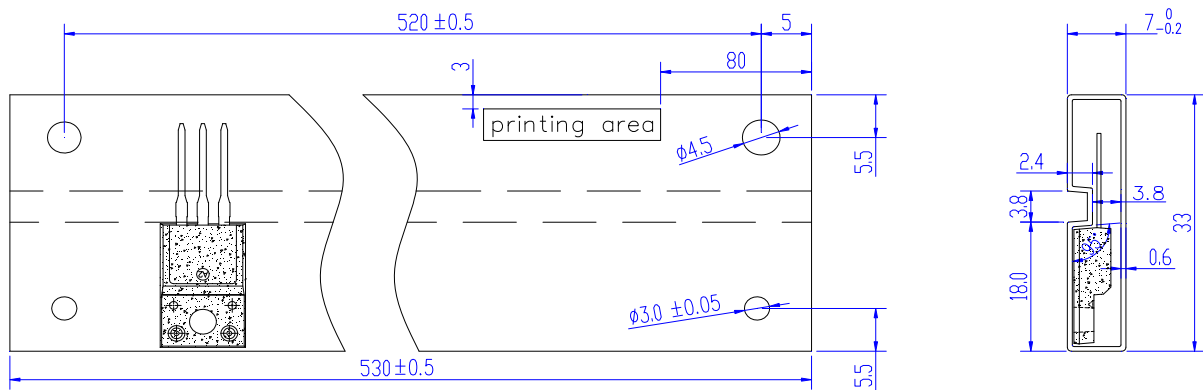
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



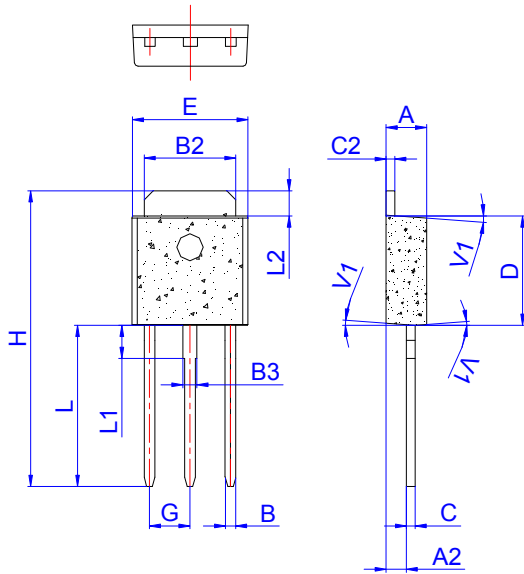
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		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



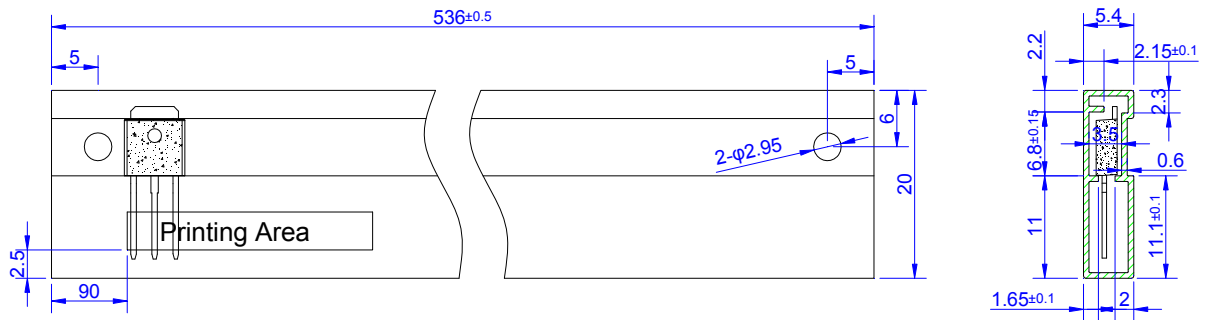
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220F	TUBE	50	1,000	5,000

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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