



JST137 Series 8A TRIACs

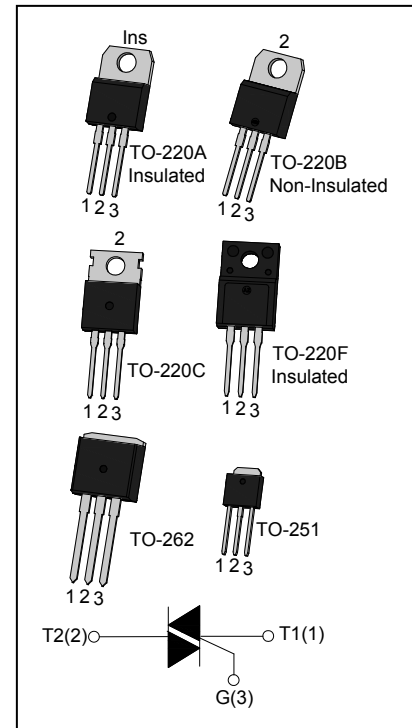
Rev.14.0

DESCRIPTION:

JST137 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load. From all three terminals to external heatsink, JST137A provides a rated insulation voltage of 2500 V_{RMS}, and JST137F 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
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600/800	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($T_j=25^{\circ}\text{C}$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^{\circ}\text{C}$)		V_{RRM}	600/800	V
RMS on-state current	TO-251/ TO-220B(Non-Ins)/ TO-220C($T_c=95^{\circ}\text{C}$)	$I_{T(RMS)}$	8	A
	TO-262/ TO-220A(Ins)/ TO-220F(Ins) ($T_c=85^{\circ}\text{C}$)			
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)		I_{TSM}	65	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	21	A ² s
Peak gate current		I_{GM}	2	A

Critical rate of rise of on-state current($I_G=2 \times I_{GT}$)	I - II -III	dI/dt	50	A/ μ s
	IV		10	
Average gate power dissipation		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	5	W

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

Symbol	Test Condition	Quadrant		Value				Unit
				D	E	F	G	
I_{GT}	$V_D=12\text{V } R_L=30\Omega$	I - II -III	MAX	5	10	25	50	mA
		IV		10	25	70	100	
V_{GT}		ALL	MAX	1.3				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	MAX	10	20	50	70	mA
		II -IV		20	30	70	100	
I_H	$I_T=100\text{mA}$		MAX	10	15	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_J=125^\circ\text{C}$		MIN	20	50	50	200	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=10\text{A } t_p=380\mu\text{s}$	$T_J=25^\circ\text{C}$	1.6	V
V_{TO}	Threshold voltage	$T_J=125^\circ\text{C}$	0.93	V
R_d	Dynamic resistance	$T_J=125^\circ\text{C}$	42	m Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_J=25^\circ\text{C}$	5	μA
I_{RRM}		$T_J=125^\circ\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.1	$^{\circ}\text{C}/\text{W}$
		TO-220B(Non-Ins)/ TO-220C	1.8	
		TO-220A(Ins)/ TO-220F(Ins)	2.9	
		TO-262	3.1	

ORDERING INFORMATION

J	ST	137	D	-600	E	-/
JieJie Microelectronics Co.,Ltd	Triacs	$I_T(\text{RMS}):8\text{A}$	A:TO-220A(Ins) B:TO-220B(Non-Ins) C:TO-220C D:TO-262 F:TO-220F(Ins) H:TO-251	600: $V_{\text{DRM}}/V_{\text{RRM}}\geq 600\text{V}$ 800: $V_{\text{DRM}}/V_{\text{RRM}}\geq 800\text{V}$	D: $I_{\text{GT}1-3}\leq 5\text{mA}$ $I_{\text{GT}4}\leq 10\text{mA}$ E: $I_{\text{GT}1-3}\leq 10\text{mA}$ $I_{\text{GT}4}\leq 25\text{mA}$ F: $I_{\text{GT}1-3}\leq 25\text{mA}$ $I_{\text{GT}4}\leq 70\text{mA}$ G: $I_{\text{GT}1-3}\leq 50\text{mA}$ $I_{\text{GT}4}\leq 100\text{mA}$	Blank: Tube

MARKING

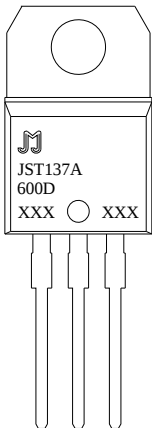
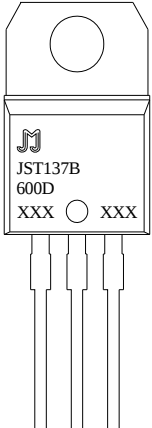
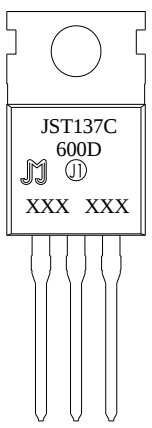
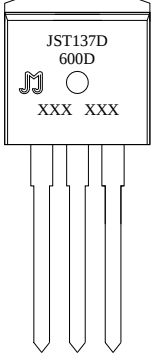
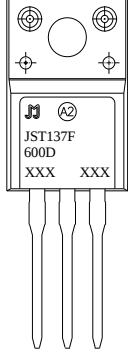
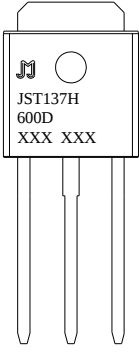
 TO-220A (Ins)	 TO-220B (Non-Ins)	 TO-220C
 TO-262	 TO-220F (Ins)	 TO-251
<u>XXX XXX</u> Year Month Production Code		

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

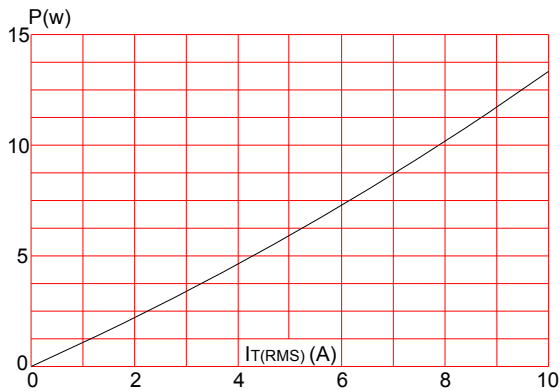


FIG.2: RMS on-state current versus case temperature

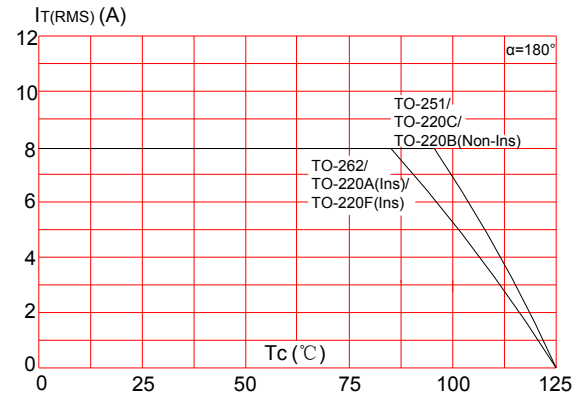


FIG.3: Surge peak on-state current versus number of cycles

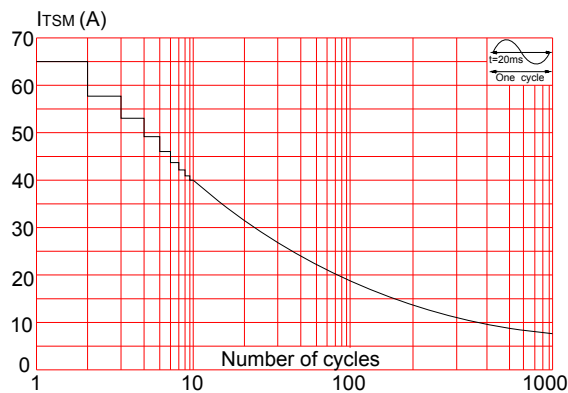


FIG.4: On-state characteristics (maximum values)

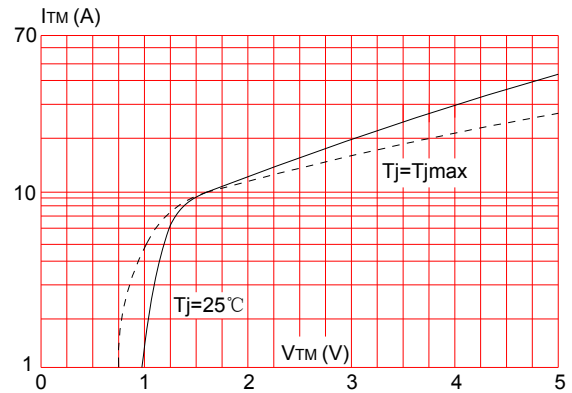


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II - III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

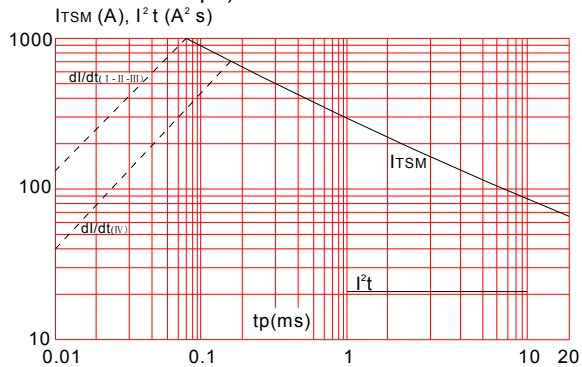


FIG.6: Relative variations of gate trigger current versus junction temperature

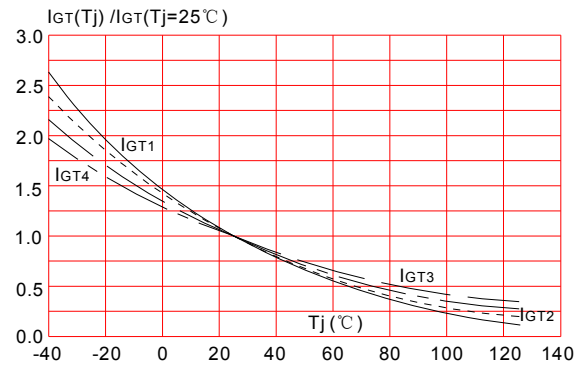
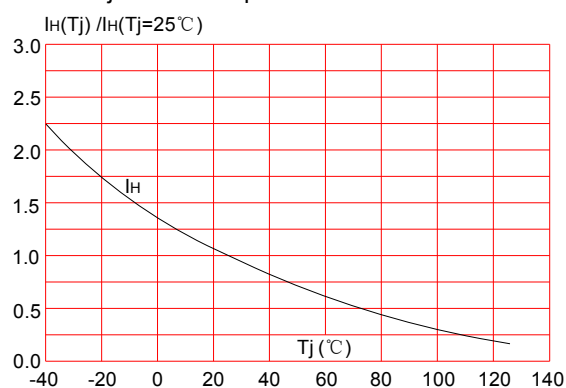
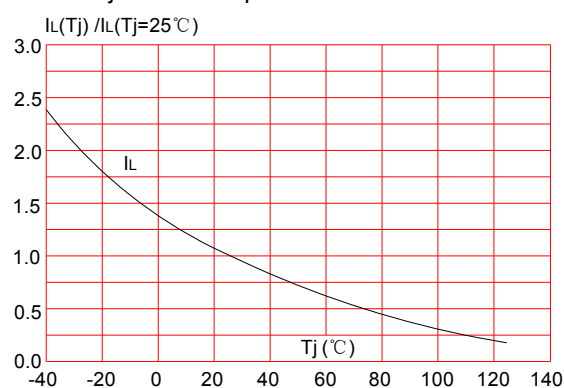


FIG.7: Relative variations of holding current versus junction temperature

FIG.8: Relative variations of 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
		I - II-III	IV			
JST137A-600/800D	600/800	5	10	TO-220A(Ins)	50	Tube
JST137A-600/800E		10	25			
JST137A-600/800F		25	70			
JST137A-600/800G		50	100			
JST137B-600/800D		5	10	TO-220B(Non-Ins)	50	Tube
JST137B-600/800E		10	25			
JST137B-600/800F		25	70			
JST137B-600/800G		50	100			
JST137C-600/800D		5	10	TO-220C	50	Tube
JST137C-600/800E		10	25			
JST137C-600/800F		25	70			
JST137C-600/800G		50	100			
JST137D-600/800D		5	10	TO-262	50	Tube
JST137D-600/800E		10	25			
JST137D-600/800F		25	70			
JST137D-600/800G		50	100			

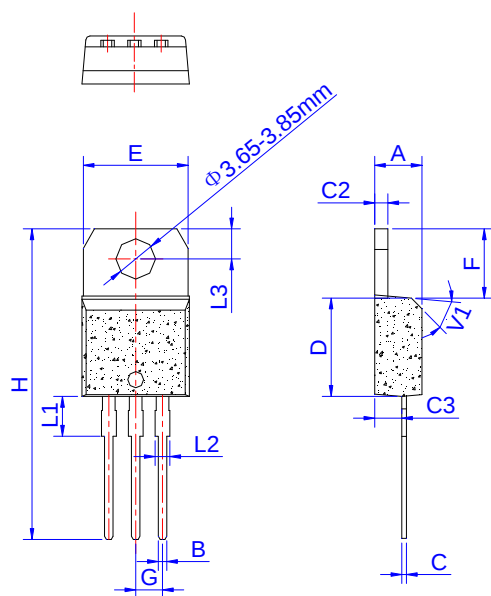


Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
JST137F-600/800D	600/800	5	10	TO-220F(Ins)	50	Tube
JST137F-600/800E		10	25			
JST137F-600/800F		25	70			
JST137F-600/800G		50	100			
JST137H-600/800D		5	10	TO-251	50	Tube
JST137H-600/800E		10	25			
JST137H-600/800F		25	70			
JST137H-600/800G		50	100			

Document Revision History

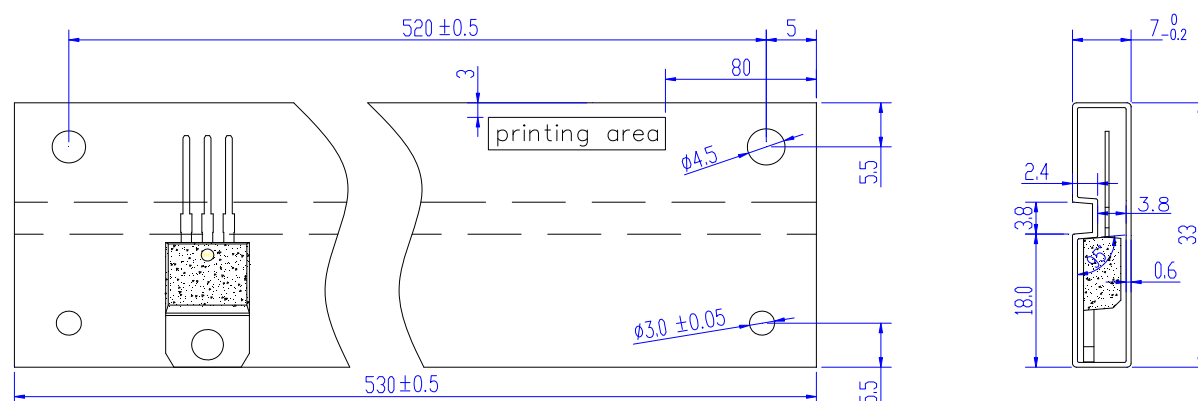
Date	Revision	Changes
Oct.10, 2020	13	Last update
Dec 29, 2021	14	Add Vto & Rd value

PACKAGE MECHANICAL DATA



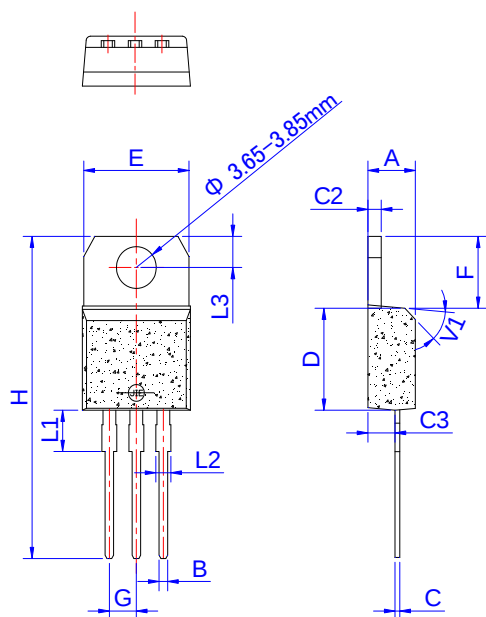
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094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



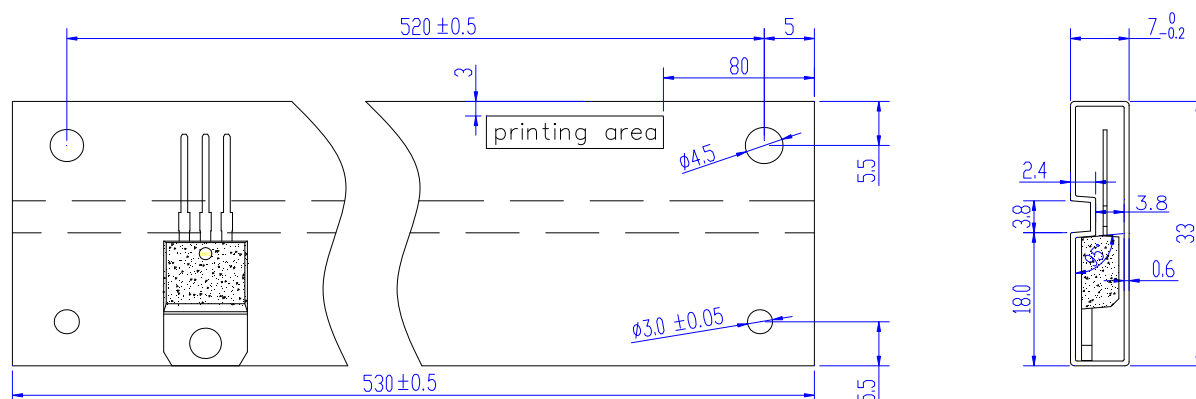
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TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



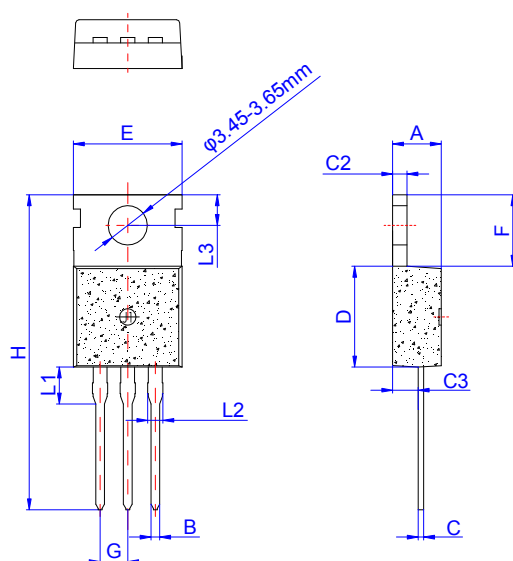
Ref.	Dimensions					
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	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60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



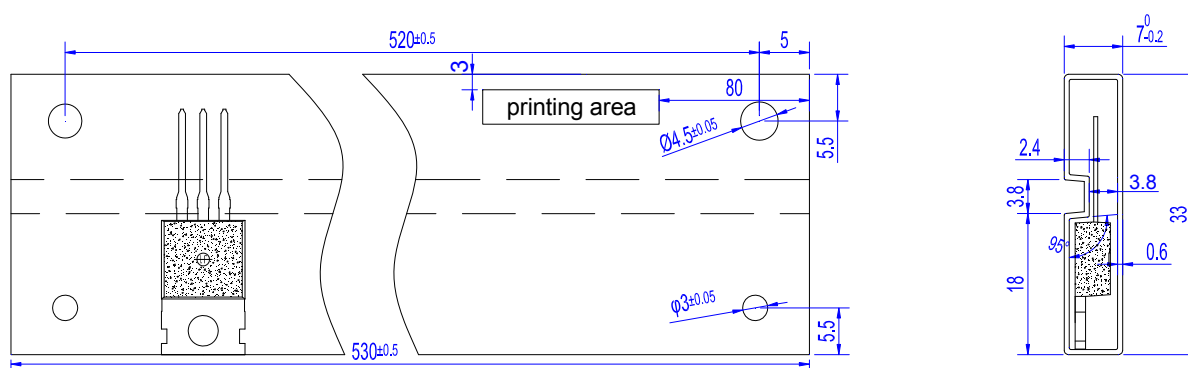
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TO-220B	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



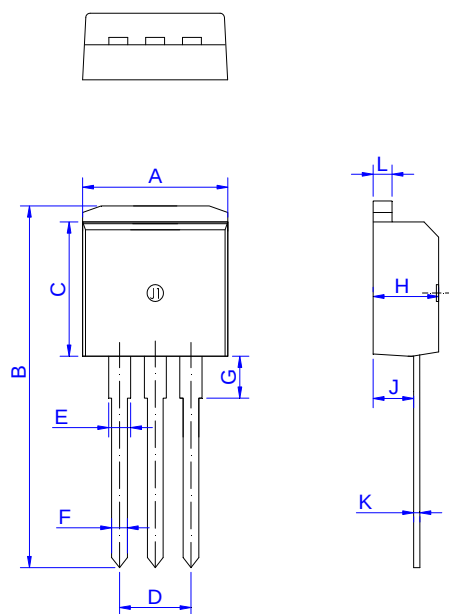
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	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



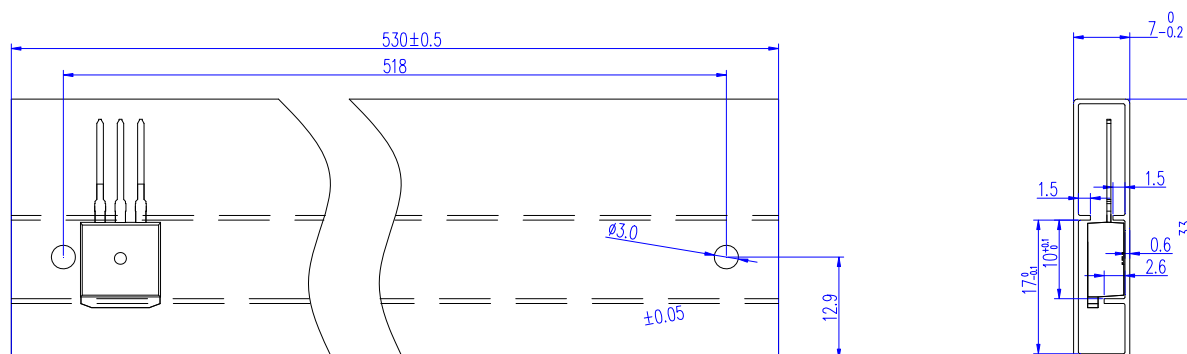
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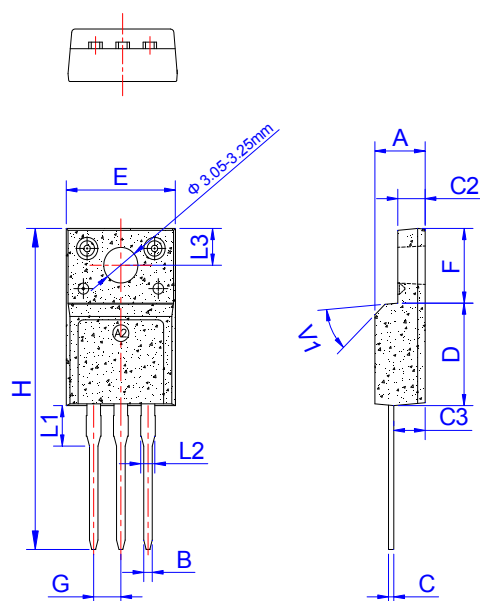
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	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.95		10.20	0.392		0.402
B	23.85		24.05	0.939		0.947
C	9.40		9.60	0.370		0.378
D	5.00		5.20	0.197		0.205
E	1.35		1.40	0.053		0.055
F	0.80		0.85	0.031		0.033
G	2.70		3.40	0.106		0.134
H	4.45		4.55	0.175		0.179
J	2.30		2.50	0.091		0.098
K	0.48		0.52	0.019		0.020
L	1.30		1.35	0.051		0.053

DELIVERY MODE



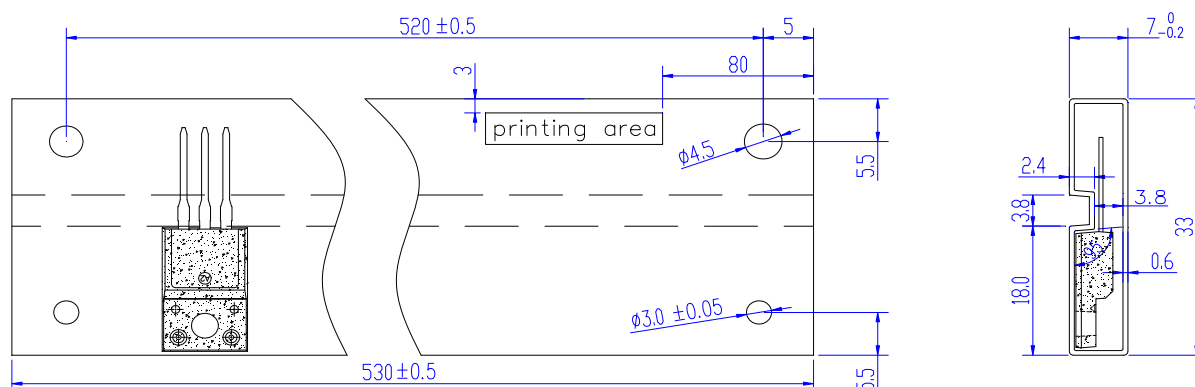
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TO-262	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



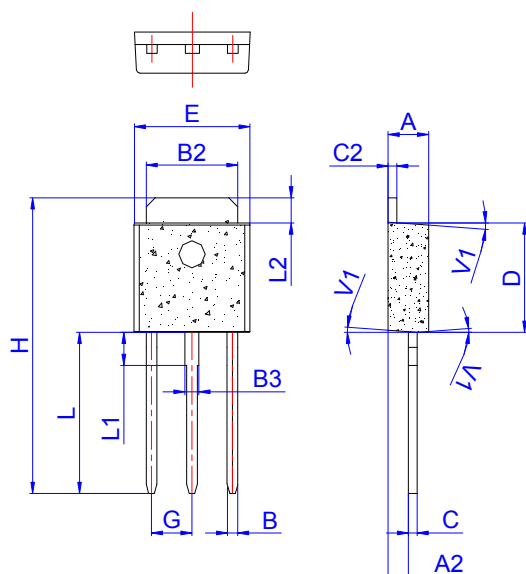
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	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410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



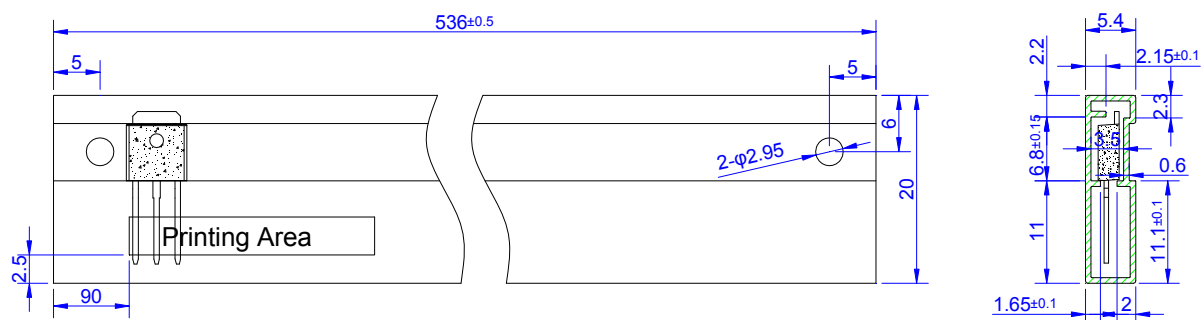
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TO-220F	TUBE	50	1,000	5,000

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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