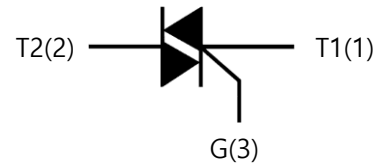
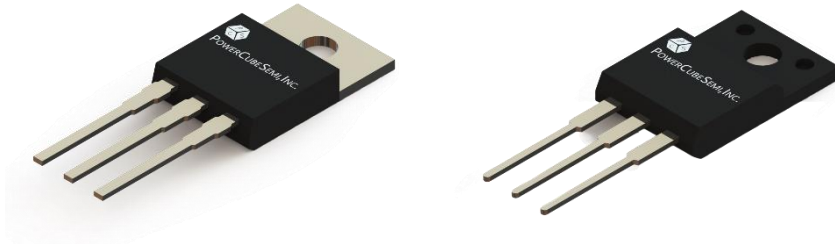


JST08 Series

600/800/1200V-Level 8A TRIACs

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 interference. 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 2,500 VRMS, and JST08F provides a rated insulation voltage of 2,000 VRMS, complying with UL standards.



PKG type : TO-220A, TO-220C, TO-220F, TO-251, TO-262



Absolute Maximum Ratings

Symbol	Parameter	Value	Unit	
V_{DRM}	Repetitive Peak Off-State Voltage ($T_J=25^\circ\text{C}$)	600/800/1200	V	
V_{RRM}	Repetitive Peak Reverse Voltage ($T_J=25^\circ\text{C}$)	600/800/1200	A	
$I_{T(RMS)}$	RMS On-State Current	TO-251 / TO-220C / TO-262 ($T_C=105^\circ\text{C}$)	8	A
		TO-220A / TO-220F ($T_C=95^\circ\text{C}$)		
I_{TSM}	Non-Repetitive Surge Peak On-State Current (full cycle, $f=50\text{Hz}$)	80	A	
I^2t	I^2t Value for Fusing ($t_p=10\text{ms}$)	32	A^2s	
di/dt	Critical Rate of Rise of On-State Current ($I_G=2 \times I_{GT}$)	50	$\text{A}/\mu\text{s}$	
T_J	Operating Junction Temperature Range	-40 to 125	$^\circ\text{C}$	
T_{stg}	Storage Junction Temperature Range	-40 to 150	$^\circ\text{C}$	
I_{GM}	Peak Gate Current	4	A	
$P_{G(AV)}$	Average Gate Power Dissipation	1	W	
P_{GM}	Peak Gate Power	5	W	

Electrical Characteristics $T_J=25^\circ\text{C}$ unless otherwise specified

3 Quadrants

Symbol	Test Condition	Quadrant		Numerical				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	$I_T=100\text{mA}$		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/ μs

4 Quadrants

Symbol	Test Condition	Quadrant		Numerical		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}		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	50	70	mA
		II		70	90	
I_H	$I_T=200\text{mA}$		MAX	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_J=125^\circ\text{C}$		MIN	200	500	V/ μs

Static Characteristics & Thermal Resistances

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 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

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case	TO-251 / TO-220C / TO-262	2
		TO-220A / TO-220F	3



Package Marking and Ordering Information

Device Marking	V_{DRM} / V_{RRM} [V]	IGT(Ma)	Package	Packing Method	Quantity
		I · II · III			
JST08A-600(800/1200)TW	600/800/1200	5	TO-220A	Tube	50
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		
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				



Package Marking and Ordering Information

Device Marking	$V_{\text{DRM}} / V_{\text{RRM}}$ [V]	IGT(Ma)		Package	Packing Method	Quantity
		I · II · III	IV			
JST08A-600(800/1200)B	600/800/1200	50	70	TO-220A	Tube	50
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		
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		
JST08H-600(800/1200)C		25	50			

Typical Characteristics

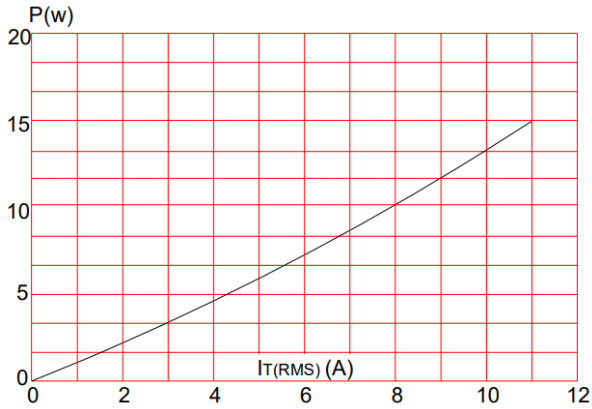


Figure 1. Maximum Power Dissipation vs. RMS On-State Current

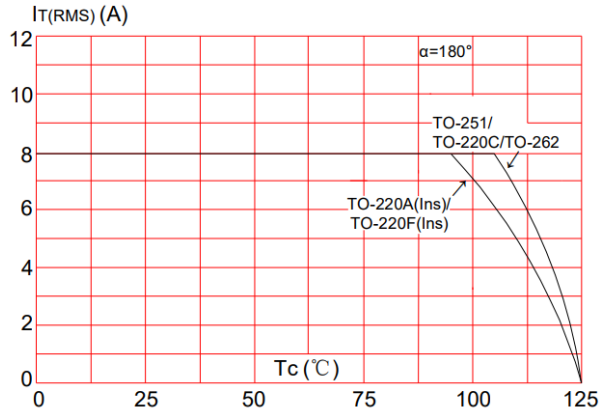


Figure 2. RMS On-State Current vs. Case Temperature

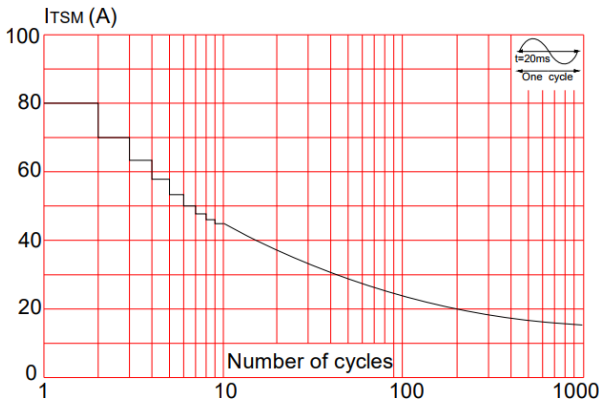


Figure 3. Surge Peak On-State Current vs. Number of Cycles

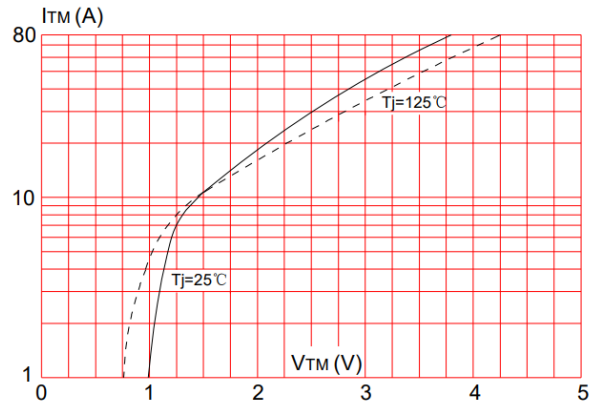


Figure 4. On-State Characteristics (Maximum Values)

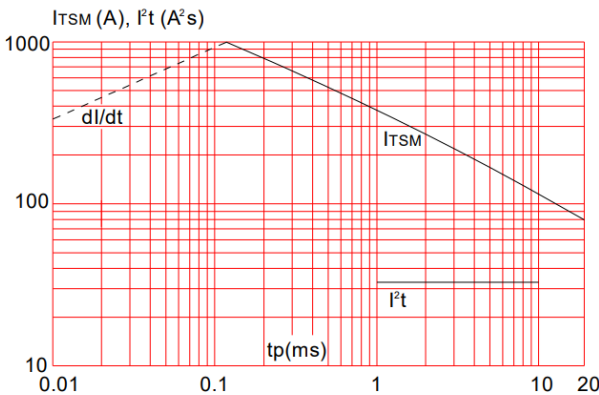


Figure 5. Non-Repetitive Surge Peak On-State Current for a Sinusoidal Pulse with width $t_p < 20\text{ms}$ and Corresponding Value of I^2T ($di/dt < 50\text{A}/\mu\text{s}$)

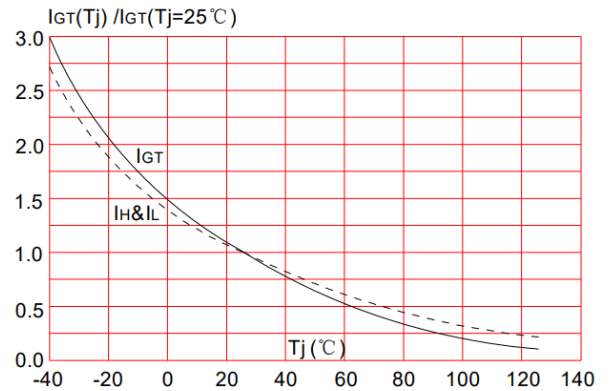
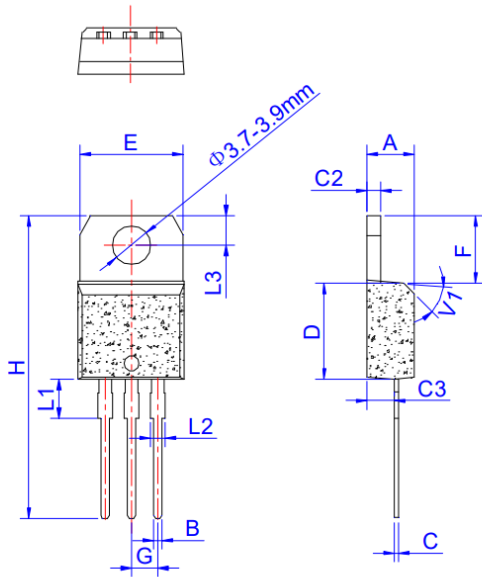


Figure 6. Relative Variations of Gate Trigger Current, Holding Current and Latching Current vs. Junction Temperature

Package Outline

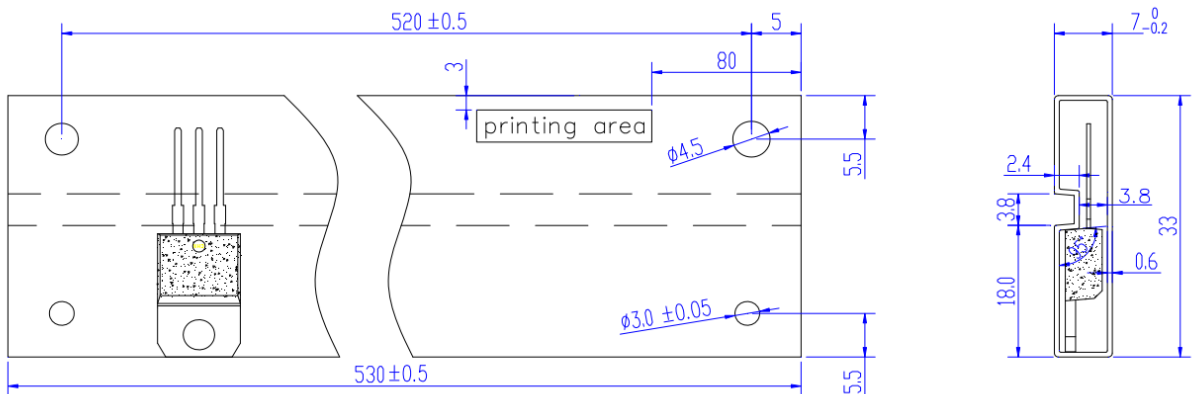
[TO-220A]

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	4.40		4.60	
B	0.61		0.88	
C	0.46		0.70	
C2	1.21		1.32	
C3	2.40		2.72	
D	8.60		9.70	
E	9.80		10.4	
F	6.25		6.85	
G	2.40		2.70	
H	28.0		29.8	
L1	3.45		4.5	
L2	1.14		1.70	
L3	2.65		2.95	
V1		45°		

Delivery Mode

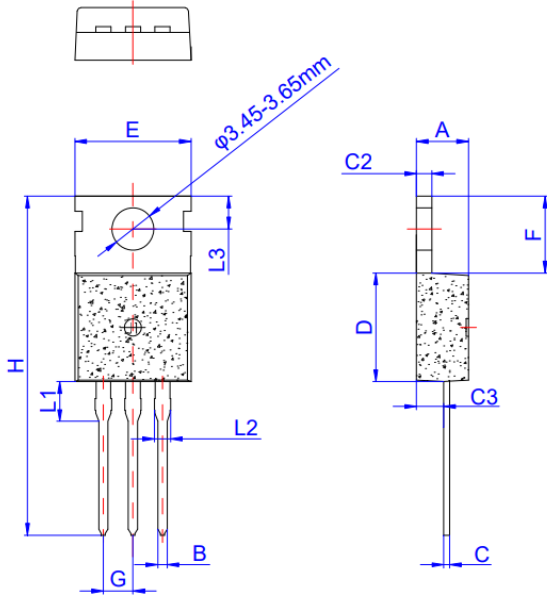


Package	Outline	Tube	Inner Box	Per Carton
TO-220A	TUBE	50	1,000	5,000

Package Outline

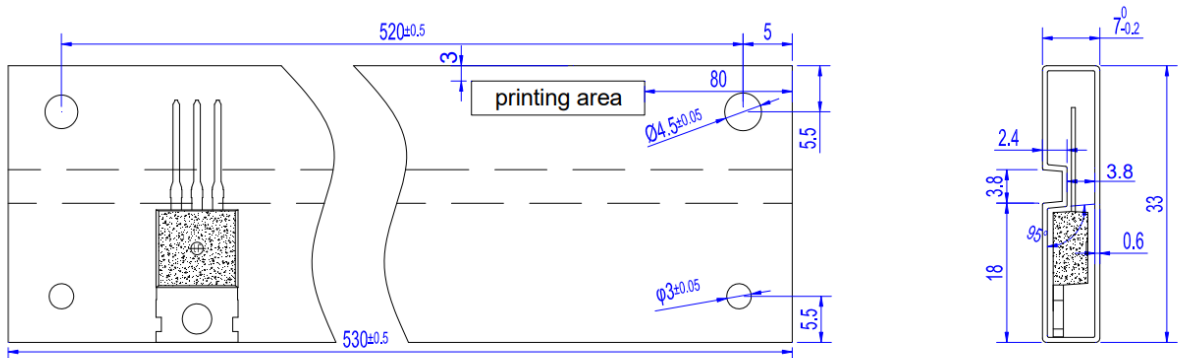
[TO-220C]

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	4.40		4.60	
B	0.70		0.90	
C	0.45		0.60	
C2	1.25		1.35	
C3	2.20		2.60	
D	8.90		9.90	
E	9.90		10.3	
F	6.30		6.90	
G	2.40		2.70	
H	28.0		29.8	
L1	2.70		3.30	
L2	1.14		1.70	
L3	2.65		2.95	

Delivery Mode

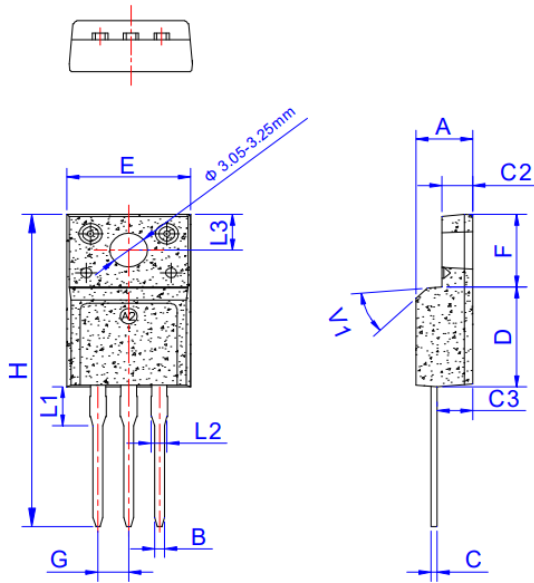


Package	Outline	Tube	Inner Box	Per Carton
TO-220C	TUBE	50	1,000	5,000

Package Outline

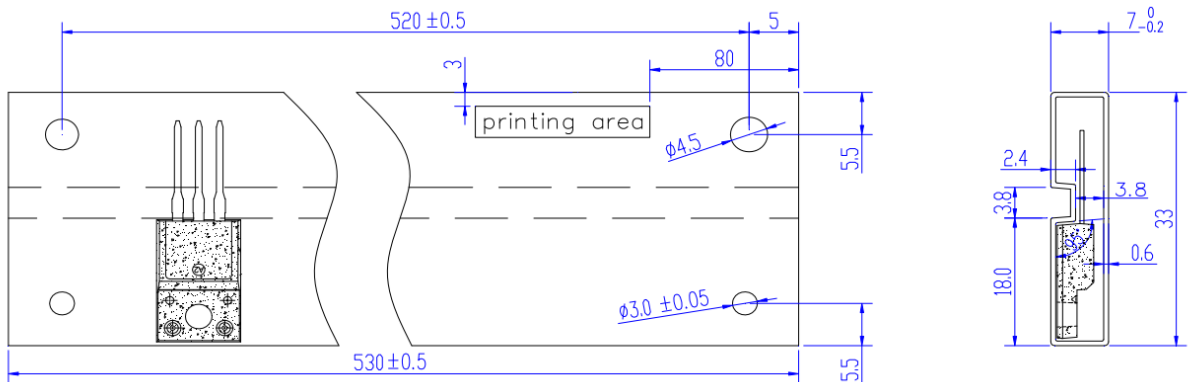
[TO-220F]

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	4.50		4.90	
B	0.74	0.80	0.83	
C	0.47		0.65	
C2	2.45		2.75	
C3	2.60		3.00	
D	8.8		9.30	
E	9.80		10.4	
F	6.40		6.80	
G	2.40		2.70	
H	28.0		29.8	
L1	3.20		3.80	
L2	1.14		1.70	
L3	3.20		3.60	
V1		45°		

Delivery Mode

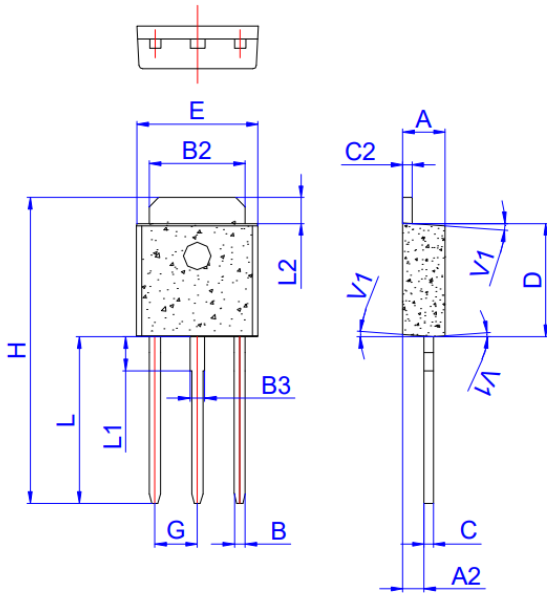


Package	Outline	Tube	Inner Box	Per Carton
TO-220F	TUBE	50	1,000	5,000

Package Outline

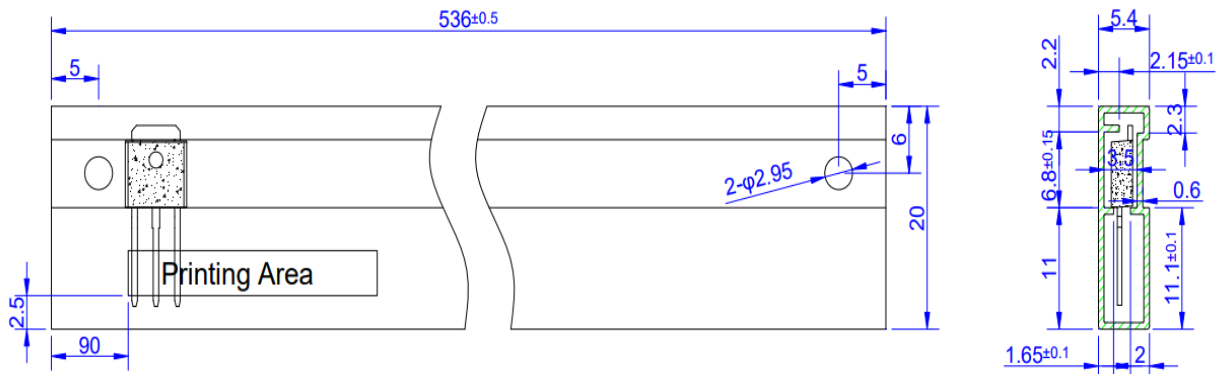
[TO-251]

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	2.20		2.40	
A2	1.00		1.30	
B	0.50		0.70	
C	5.10		5.40	
C2	0.70		1.00	
C3	0.45		0.62	
D	0.48		0.62	
E	6.00		6.20	
F	6.40		6.70	
G	2.20		2.40	
H	16.0		17.0	
L	8.90		9.40	
L1	1.80		2.20	
L2	1.25		1.55	
V1		4°		

Delivery Mode



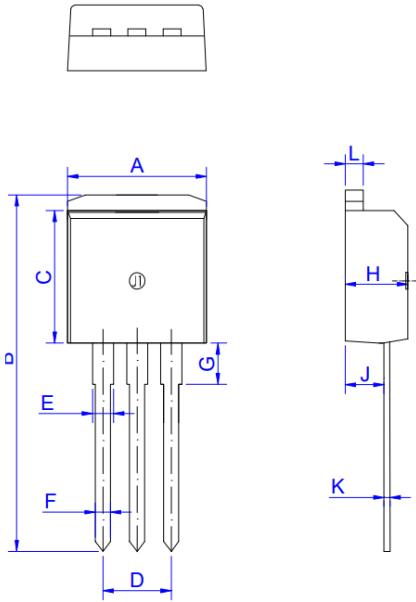
Package	Outline	Tube	Inner Box	Per Carton
TO-251	TUBE	80	4,000	20,000



Package Outline

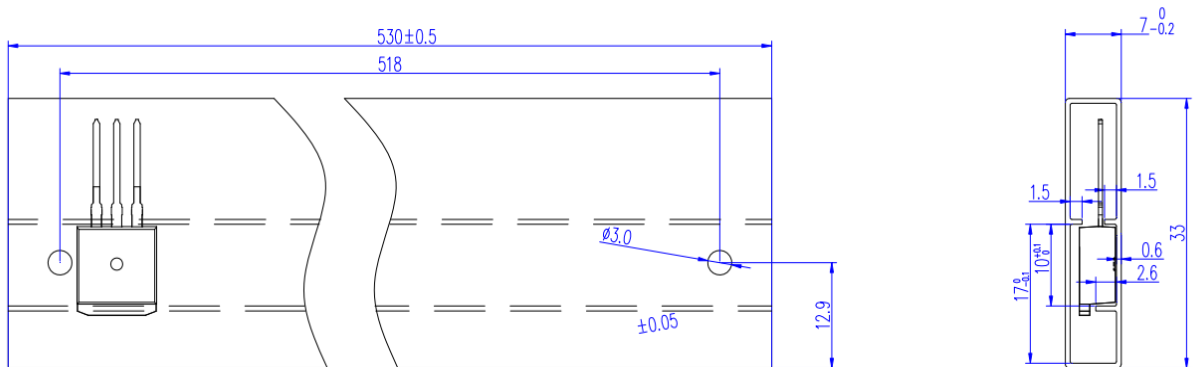
[TO-262]

Unit : mm



SYMBOL	DIMENSIONS			NOTES
	MIN	NOM	MAX	
A	9.95		10.20	
B	23.85		24.05	
C	9.40		9.60	
D	4.95		5.25	
E	1.35		1.40	
F	0.80		0.85	
G	2.70		3.40	
H	4.45		4.55	
J	2.20		2.60	
K	0.48		0.52	
L	1.30		1.35	

Delivery Mode



Package	Outline	Tube	Inner Box	Per Carton
TO-262	TUBE	50	1,000	5,000