



JX075 Series Sensitive gate SCRs

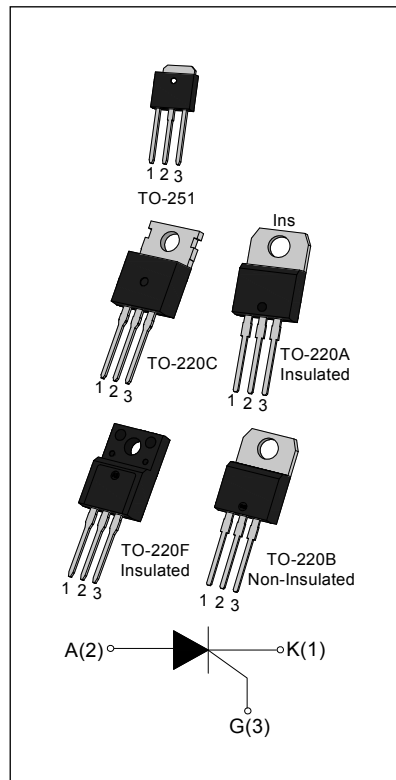
Rev.11.0

DESCRIPTION:

The JX075 SCR series provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc. From all three terminals to external heatsink, JX075A & JX075F provides a rated insulation voltage of 2000 V_{RMS}. All the packages mentioned are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
V _{DRM} / V _{RRM}	800	V
I _{T(RMS)}	12	A
I _{GT}	≤200	μA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	T _{stg}	-40-150	°C	
Operating junction temperature range	T _j	-40-125 ^①	°C	
Repetitive peak off-state voltage	V _{DRM}	800	V	
Repetitive peak reverse voltage	V _{RRM}	800	V	
RMS on-state current	I _{T(RMS)}	TO-251/TO-220C TO-220B(Non-Ins) (T _C =80°C)	12	A
		TO-220A(Ins)/ TO-220F(Ins) (T _C =85°C)		
Non repetitive surge peak on-state current (tp=10ms)	I _{TSM}	100	A	
I ² t value for fusing (tp=10ms)	I ² t	50	A ² s	
Critical rate of rise of on-state current	di/dt	50	A/μs	

Peak gate current (tp=20μs, Tj=125°C)	I _{GM}	4	A
Peak gate power (tp=20μs, Tj=125°C)	P _{GM}	3	W
Average gate power dissipation(Tj=125°C)	P _{G(AV)}	0.2	W

NOTE 1: When we parallel connect a ≤1KΩ resistor between Gate and Cathode, the Tj can reach 125°C; if without this resistor, the Tj only can reach 110°C.

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I _{GT}	V _D =12V R _L =33Ω	-	60	200	μA
V _{GT}		-	-	0.8	V
V _{GD}	V _D =V _{DRM} Tj=125°C	0.2	-	-	V
I _L	I _G =1.2 I _{GT}	-	-	6	mA
I _H	I _T =0.05A	-	-	5	mA
dV/dt	V _D =2/3V _{DRM} Tj=125°C R _{GK} =1KΩ	5	10	-	V/μs

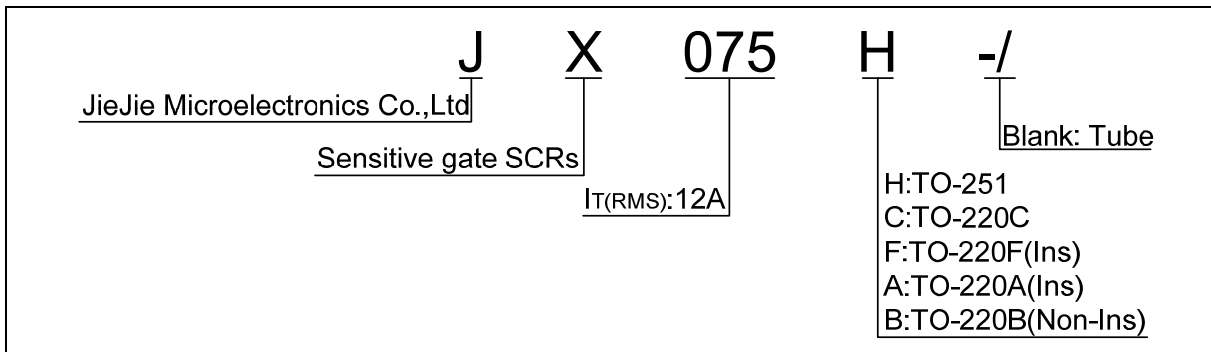
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V _{TM}	I _{TM} =24A tp=380μs	Tj=25°C	1.6	V
I _{DRM}	V _D =V _{DRM} V _R =V _{RRM}	Tj=25°C	10	μA
I _{RRM}		Tj=125°C	2	mA

THERMAL RESISTANCES

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

ORDERING INFORMATION



MARKING

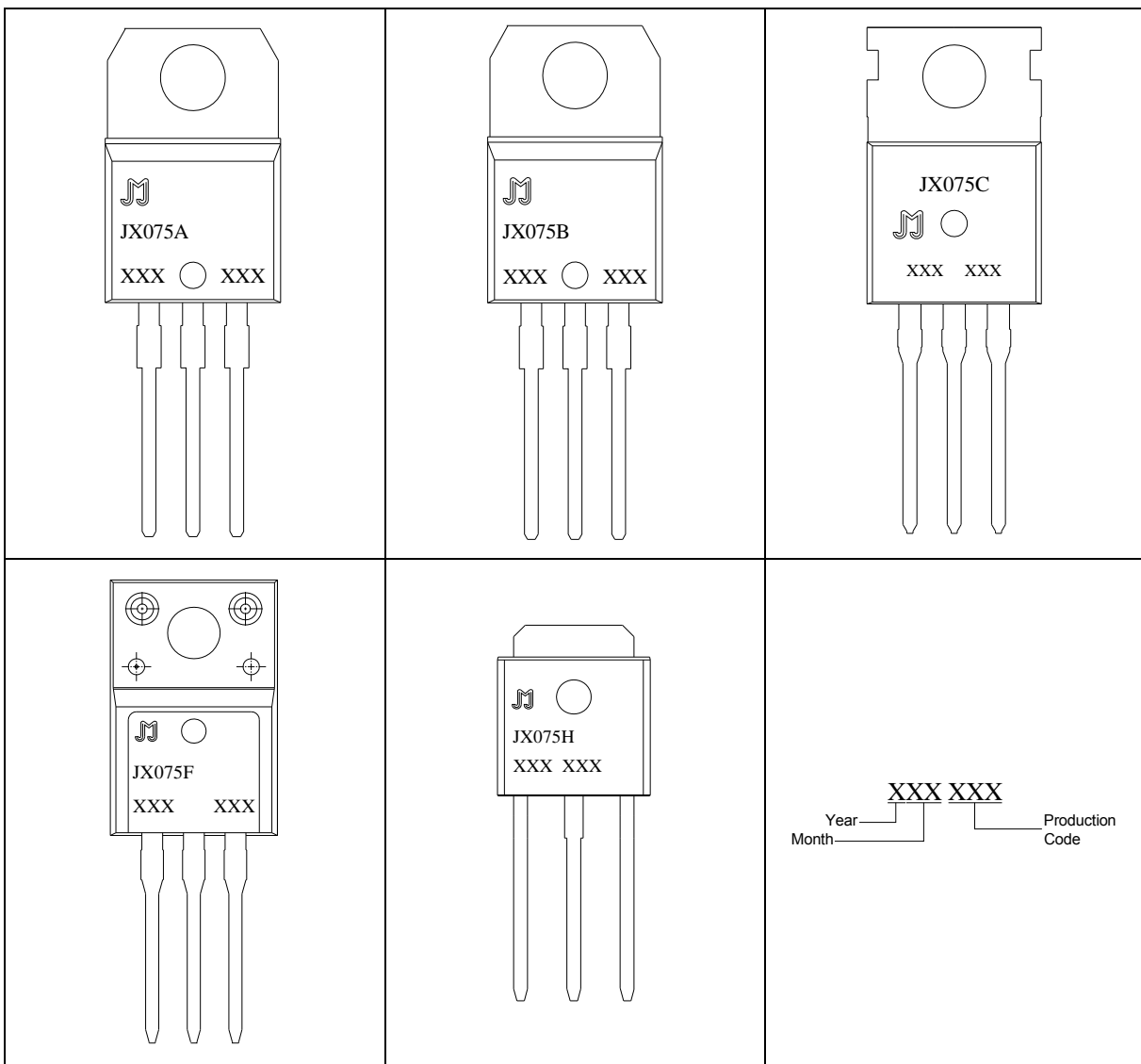


FIG.1 Maximum power dissipation versus RMS on-state current

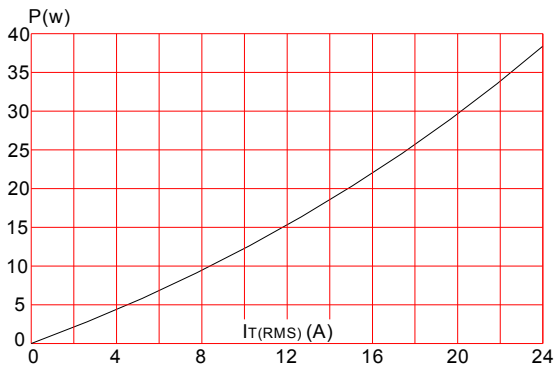


FIG.2: RMS on-state current versus case temperature

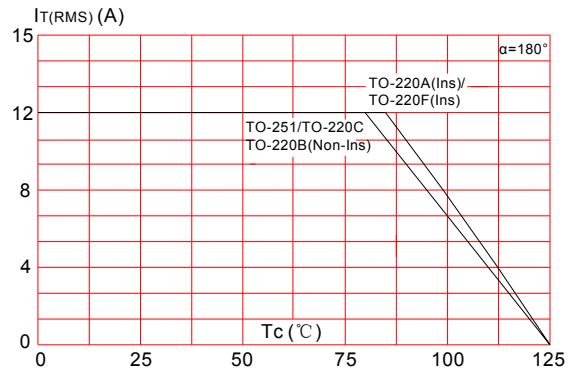


FIG.3: Surge peak on-state current versus number of cycles

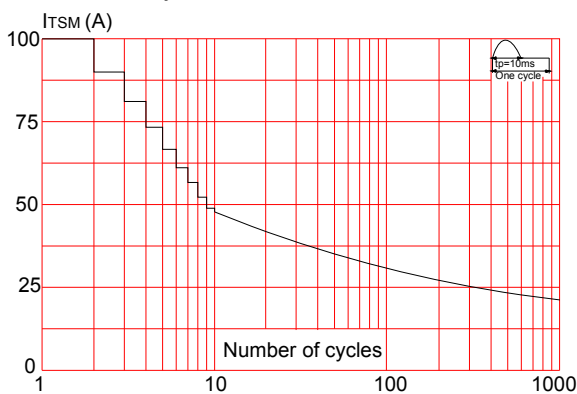


FIG.4: On-state characteristics (maximum values)

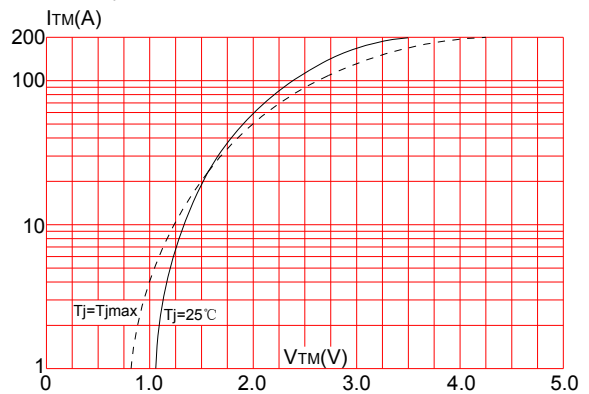


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

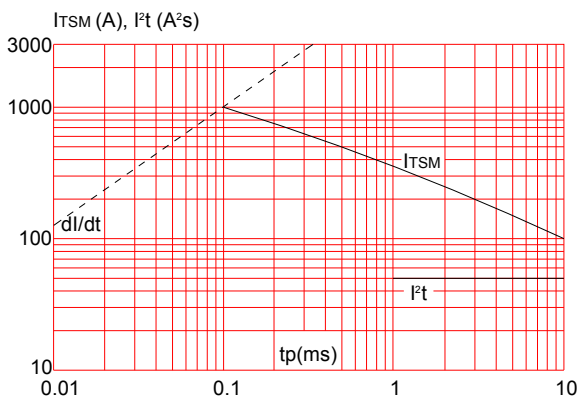
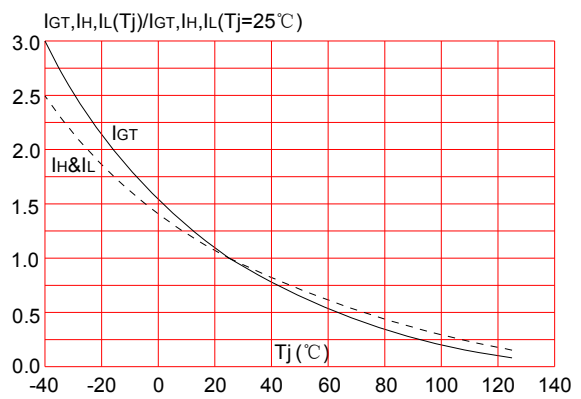


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



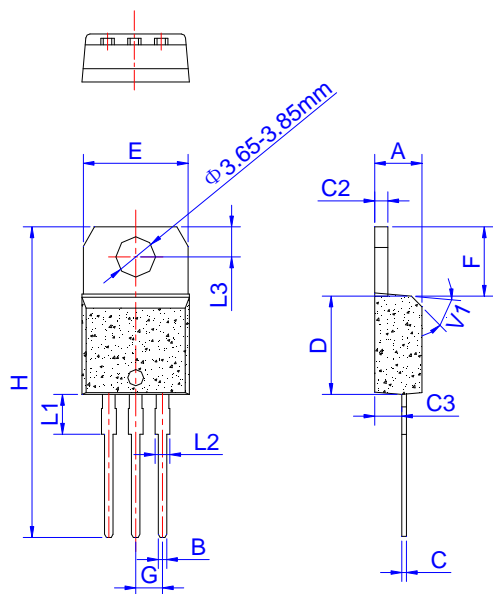
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(μ A)	Package	Base qty. (pcs)	Delivery mode
JX075A	800	200	TO-220A(Ins)	50	Tube
JX075B			TO-220B(Non-Ins)		
JX075C			TO-220C		
JX075F			TO-220F(Ins)		
JX075H			TO-251	80	

Document Revision History

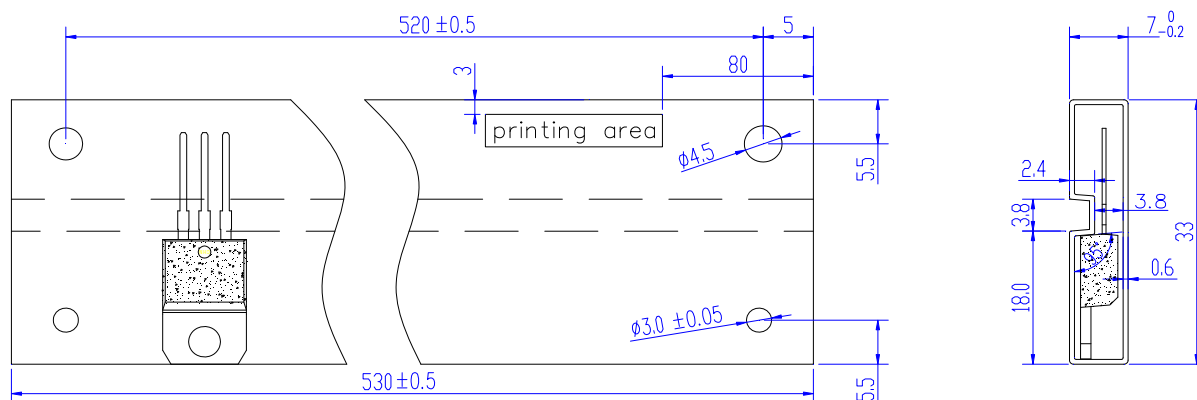
Date	Revision	Changes
July 23, 2021	9	Last update
Aug 31, 2021	10	Add TO-220C package
Sep 9, 2021	11	Renew IGM & dV/dt

PACKAGE MECHANICAL DATA



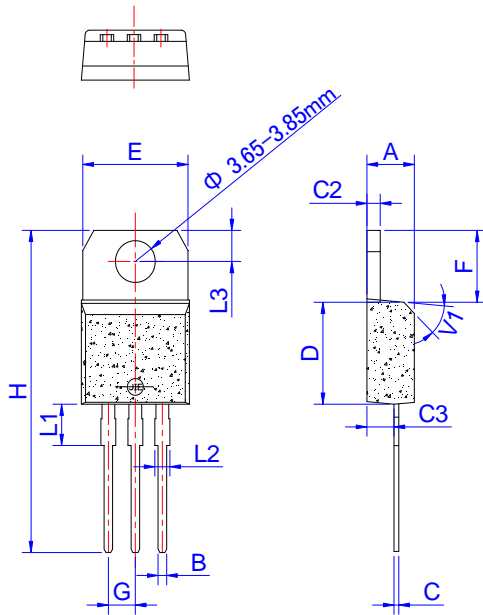
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094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



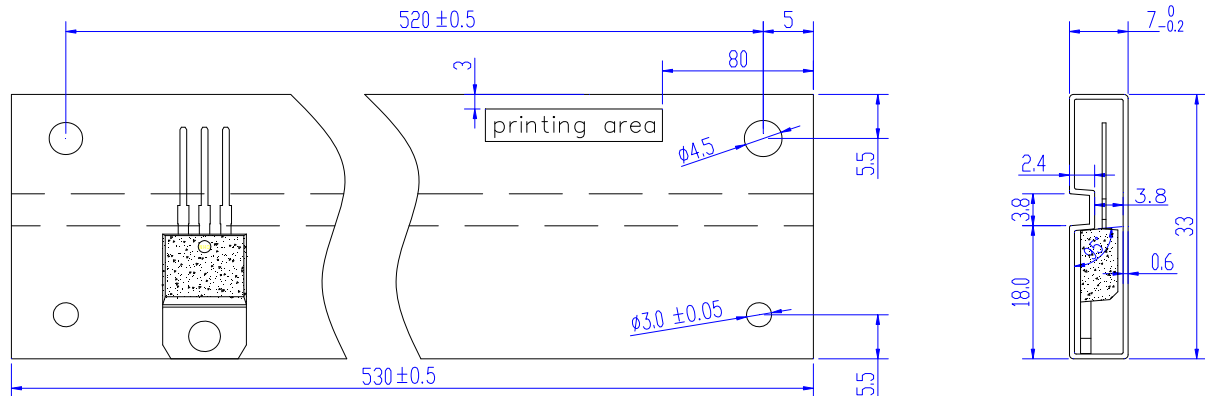
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



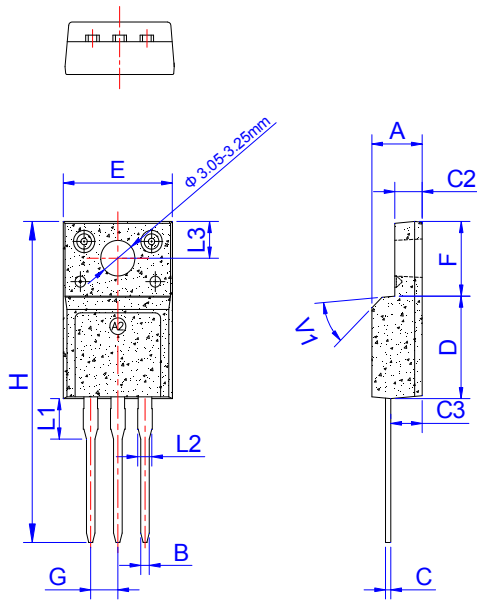
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	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40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



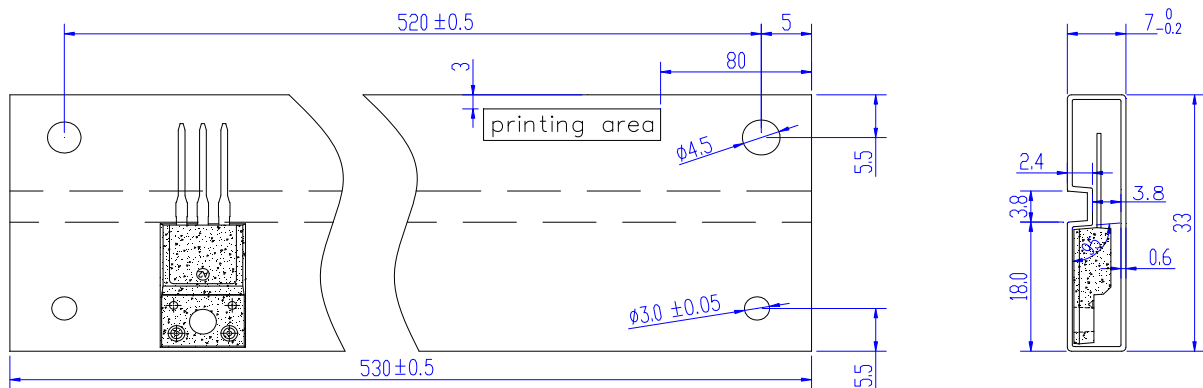
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220B	TUBE	50	1,000	5,000

PACKAGE MECHANICAL DATA



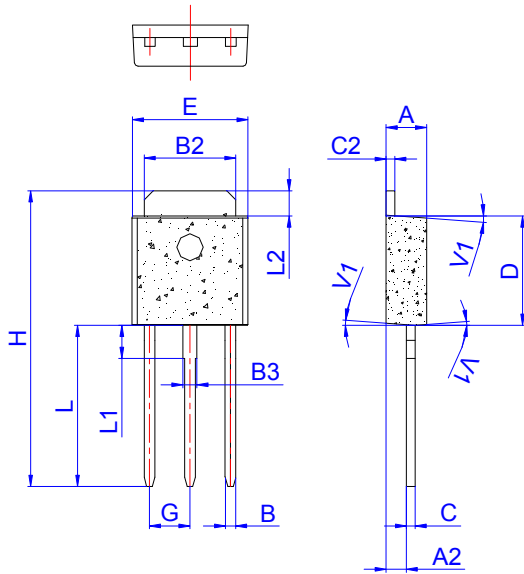
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40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



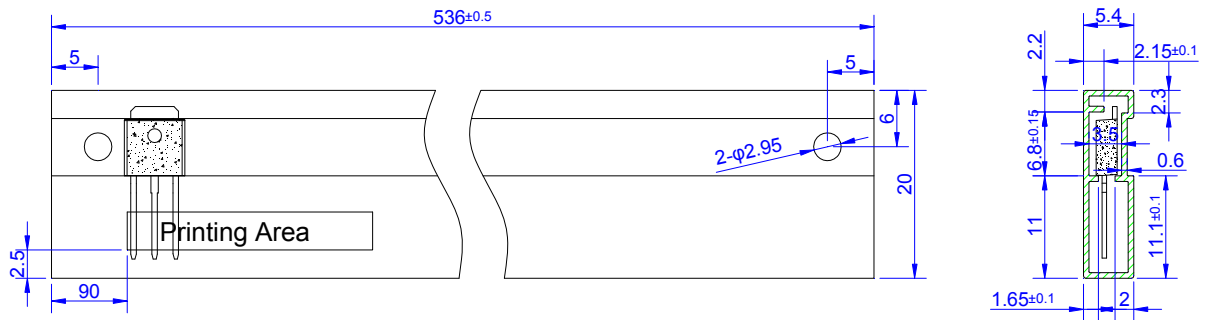
PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220F	TUBE	50	1,000	5,000

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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